HaSS: International Journal of Research in Humanities and Social Sciences, *Vol 10(1), 5-7, January-June 2023*
DOI:10.15613/hijrh/2023/v10i1/221070
ISSN (Print): 2349-4778
ISSN (Online): 2349-8900

Home as Empire of the Heart in *The Home Front Girls* by Rosie Goodwin

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Abstract

The paper aims to bring out the best in the three female protagonists during a crisis in the novel *The Home Front Girls* by Rosie Goodwin. Charles Darwin's concept of "survival of the fittest" is the looking glass through which the lives of the trio are assessed in this paper. The courage, determination and strong will of these women make them overcome seemingly insurmountable circumstances. With the imminent war lurking within and without, living each day becomes an ordeal for all irrespective of class, race and gender. These women prove that all is not lost and that one just needs the grit and perseverance to move on in life, despite the odds.

Keywords: Home Front, Indomitable, Insurmountable, Memory

1. Introduction

In the novel *The Home Front Girls*[1] by Rosie Goodwin, the three principal female characters are truly heroines in their own little world. Annabelle, the richest among the three tries to rediscover herself in a war-torn world by enlisting herself in a war zone as a nurse. Dotty whose identity is a mystery, unravels herself through her vocation as a story writer, thereby venting her hidden emotions. Lucy, with her maternal instincts, attends to her family and to her little one, in particular, and is preoccupied with domestic commitments at home. Initially, all three of them meet at a Departmental Stores for work and then part ways.

2. The Space Called Home

Home is not only a place where a person lives but also where his heart is. It is a place where people share their feelings and emotions. It is a place most people look forward to easing themselves at the end of the day. It is a place of understanding. It is a place of hope yet at the same time it is not always a place of comfort and happiness ironically. It can be also a place where identities have to be proved. However, a real home resides in the heart. When the going gets tough and when familiar things fade into oblivion, when homes are razed to the ground during catastrophes, there is only one thing that matters - the indomitable heart.

The novel, *The Home Front Girls*[2] by Rosie Goodwin is set against the backdrop of Hitler's tyranny and his impending invasion of London. The story revolves around the fortunes of three girls whose future is seemingly uncertain and fraught with dangers. Despite the hazards of life, the three of them, Annabelle, Dotty and Lucy meet as employees at Owens, a Departmental Store, Owens. It turns out that Annabelle belongs to a well-to-do family unlike the other two. However, all three are bound by one common factor - they all have an untold story which needs an outlet.

Life went by as usual despite the war and the daily routine was disrupted by occasional bombings and threats of war. As the days went by, the three girls meet each other

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Journal of the Australian Ceramic Society
https://doi.org/10.1007/s41779-023-00861-3

RESEARCH

Preparation of ciprofloxacin-loaded oyster shell derived hydroxyapatite composite film for biomedical applications

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Received: 6 June 2022 / Revised: 23 February 2023 / Accepted: 27 February 2023

Abstract

Osteomyelitis is an acute or chronic bone infection and inflammation caused by pyogenic organisms like bacteria. Treatment includes surgery and intake of antibiotics for a prolonged time. This work aims to provide a novel composite material which is cost-effective and reduces the dosage of antibiotics by implanting at the targeted site to eradicate the disease. Hydroxyapatite (HAp) $Ca_{10}(PO_4)_6(OH)_2$ extracted from oyster shell is used to improve the biocompatibility of the composite and recycling of the waste shell reduces the environmental pollution. Ciprofloxacin loaded hydroxyapatite/chitosan composite is synthesized and characterized to mimic the natural bone compositions. The prepared composite material is characterized by X-ray diffraction (XRD), Fourier transform infrared spectrometer (FTIR), thermo-gravimetric analysis (TGA-DTA), and scanning electron microscope (SEM) and energy dispersive X-ray spectroscopy (EDS). The XRD results show the prepared HAp is in good agreement with the JCPDS 076–0694 with standard peaks and crystalline structure. FTIR results confirm the presence of hydroxyapatite in both HAp powder and composite film, with the peaks corresponding to the absorption bands of phosphate and hydroxyl functional groups. Thermo-gravimetric analysis (TGA-DTA) is carried out to estimate the stability of HAp powder synthesized from oyster shell and film composite at higher temperatures. TGA is analyzed between 0 and 1000 °C, and it shows minimal weight loss till 700 °C for both HAp powder and composite film. SEM EDS has revealed the surface morphology and the chemical elements to validate the presence of hydroxyapatite, chitosan, and ciprofloxacin in the composite film. In-vitro degradation and drug release results show a sustained degradation and drug release of the film when immersed in the PBS solution. The MTT assay direct method test using L929 cell lines shows good biocompatibility with cell growth for the prepared HAp/chitosan/ciprofloxacin composite film.

Keywords Oyster shell · Hydroxyapatite · Chitosan · Ciprofloxacin · Osteomyelitis · Biocompatibility

Introduction

A bacterial infection in the bone, osteomyelitis is mainly caused by *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *and Enterobacteriacea* [1]. If the condition is left untreated, it becomes chronic without proper blood supply to the infected site and destructs the bone itself. Osteomyelitis is treated with input from various specialists with a multidisciplinary approach which makes the treatment complex [2]. To cure the bacterial bone infection, oral administration of a high dose of antibiotics is required for a period of several weeks to months. Local drug delivery with remarkable developments in osteomyelitis treatment gives an improved outcome and also reduces the side effects of high-dose drugs given through systemic administration [3].

Metals, metal alloys, and ceramics have been used as medical implant materials for many years, among which organic–inorganic composite materials are nowadays widely used in orthopedic applications for its combined properties of both ceramics and polymers that mimic the natural bone structure to induce mineralization [4]. Properties like improved mechanical strength, sustained drug release, adjusting to the internal body environment, and supporting for bone mineralization as a scaffold have made

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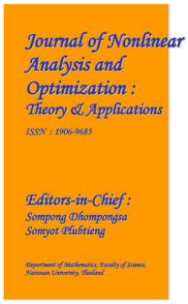
Published online: 03 April 2023

Journal of **N**onlinear **A**nalysis and **O**ptimization
Vol. 14, Issue. 2, No. 2: 2023
ISSN : **1906-9685**



PREDICTION OF CORONARY HEART DISEASE RISK FOR OCCUPATIONAL DRIVERS USING DECISION TREE ANALYSIS

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Abstract

Coronary Heart Disease (CHD) is a common disease which is closely linked with lifestyle related behaviors. Correct and in time diagnosis is very important to prevent from death. The most accurate Angiography diagnosis method has side effects and it is costly. The existing studies have used wide range of computational methods and tools for analyzing medical data. In the present study effective data mining methods have been applied to develop CHD prediction model in a cost effective manner. The aim of the study is to develop a rapid and automated prediction of CHD risk by analyzing the physical and biochemical factors using C4.5 algorithm with 10-fold cross validation. This method provides early intervention of CHD and reduces the risk for occupational drivers. In this work, information gain plays a vital role in determining the root and nodes of the decision tree. The proposed method has yielded good accuracy of 98.66%. In order to evaluate the performance of the proposed method sensitivity and specificity are analyzed which helps to reduce further invasive CHD risk examination cost for the individuals.

Keywords: Coronary Heart Disease; Ischemic heart disease; Risk Prediction; Decision Tree Classification; Receiver Operating Characteristics; 10-fold cross validation

Introduction

Coronary Heart Disease (CHD) is a serious medical emergency in which the supply of blood to an area of the heart is inadequate. This inadequacy is due to the development of plaques within the walls of one or more coronary arteries resulting in narrowing of lumen of coronary arteries (Muthukaruppan and Er, 2012). Under this circumstance the supply of the oxygenated blood to the heart decreases leading to myocardial ischemia and subsequently myocardial infarction (MI) or sudden cardiac death. The majority of CHD is caused by risk factors that can be controlled, treated or modified, such as high blood pressure, blood sugar, cholesterol, obesity and lack of physical activity (Susan et al.,2012; Katzmarzyk et al., 2006; Song et al., 2007; Grundy et al., 2004). The most useful way to reduce deaths due to CHD is early diagnosis and treatment. The combination of symptoms with medical reports to diagnose the CHD risk requires much experience and knowledge. Nowadays, Medical databases have huge amount of health care data, which contains hidden information. However, there is a task of designing the effective analysis tool to discover the hidden relationships in data for the prediction of CHD.

Knowledge that is hidden inside the huge amount of data can be discovered using data mining (Roohallah et al., 2013). It can reveal the patterns and relationships using statistical analysis, pattern recognition and machine learning techniques. Data mining is used in various applications such as marketing, banking, insurance, crime detection, agriculture, medicine, privacy preservation, etc. (Jiawei et al., 2012). Data mining is a popular predicting tool for medical reports stored in the massive database which seeks to identify and exploit patterns and relationship among large number of variables.

ISSN 0972 - 8945

SOUTH INDIA
JOURNAL OF SOCIAL SCIENCES

(BI ANNUAL)

January – June 2023 Vol. XXI,22

CONTENTS

READING PREFERENCES AND PATTERNS OF COMMERCE STUDENTS OF LRG GOVERNMENT ARTS COLLEGE FOR WOMEN, TIRUPUR : A CASE STUDY

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ABSTRACT

The Reading Habit is the foundation for the student's Academic pursuits. Among the four pillars of learning, Reading is the prime skill based on which the writing, listening, and speaking skills are built. This study tends to identify the preferences and the reading patterns of the commerce students in LRG Government Arts College for Women, Tirupur, Tamilnadu. An Online Questionnaire was distributed among all the Commerce and Commerce (Computer Applications) students. The response rate was only 53.98%. The data collected were analyzed using percentage and simple average calculations. The results revealed that commerce students prefer "Reading" as their time pass activity. Most of them choose to read only 30 minutes per day and the Teachers were the highly motivating persons for reading. The respondents preferred the Humor/comedy genre in the fiction and General Knowledge materials in the Non-fiction category.

Keywords : *Reading habit, Commerce students, Reading preferences, online reading, Reading methods.*

Introduction

The word "Reading Habit" is formed by the blend of two words - "Reading" and "Habit" in which Reading refers to the act of interpreting the meaning of printed or written words (Devarajan, 1979) and "Habit" may be said as the activity carried out in regular basis. There has been an increased need for online reading as academic endeavors were continued through online mode. The reading pattern and preferences of the students are analyzed in this paper to understand the student's choices.

Review of Literature

Ramasamy and Padma (2020) investigated the effect of gender on reading preferences and attitudes towards reading among the school students of five Matriculation schools in Madurai city. Out of 250 questionnaires, 200 were duly filled and received. The results showed that 58(49.2%)boys and 32(39.0%) girls preferred reading Non-Fiction. Out of 118 students, 29(24.6%) boys and 23(28.0%) girls preferred to read Science Fiction. Boys felt that lack of enough books at home and girls felt extracurricular work was the problem faced in nurturing their reading Habits. Luong (2021) investigated the Reading culture of Vietnamese students at three Universities of Social Sciences and Humanities which are The Hanoi University of Culture, VNUHCM-University of Social Sciences and Humanities, and VNU-University of Social Science and Humanities.600 Questionnaires were distributed and the response rate is 98%.98.8% of students use their free time to access Social Networks. The majority of the students read for Learning (87.58%) and Scientific Research (25%).65.47% read textbooks and 53.4% read Online Newspaper. Khatri and Walia (2020) investigated the reading interest of the students of select colleges affiliated with the University of Delhi. The results revealed that 89.9% of graduate students like reading. 43.7% out of 46.8% female respondents and 46.2% out of 53.2% were more interested to read which reveals that their female counterparts are more inclined to read..73.5% of students read books for academic purposes. The highest number of respondents 64.8% read newspapers for current information purposes.

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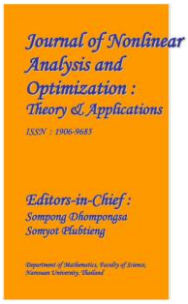
Journal of **N**onlinear **A**nalysis and **O**ptimization
Vol. 14, Issue. 2, No. 2: 2023
ISSN : **1906-9685**



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Ceramics International
Volume 49, Issue 1, 1 January 2023, Pages 48-56

High electrode performance of hydrothermally developed activated C coated O3–$NaFeO_2$ electrode for Na-ion batteries applications

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Show more

https://doi.org/10.1016/j.ceramint.2022.07.110 ↗

Abstract

Owing to increase in cost and low availability of Li source causes the high rate of the energy storage devices. By focusing on these issues, the cost effective and high performed electrode is needed for energy storage application. Na based electrodes can replace the Li ion batteries because of the availability of Na is higher than the Li. The cost of the energy storage devices can be reduced by using Na instead of Li. Many other electrodes are reported based on Na ion batteries. Since in this present work we prepared O3–$NaFeO_2$ (NIO) high performance electrode prepared by two step hydrothermal assisted solid-state method. But the battery performance of NaFeO2 is suffers from capacity decay during long term cycling. For these issues naturally derived sucrose from the sugarcane is prepared which increase the electrochemical performance of Ac carbon coated $NaFeO_2$ (AC Coated NIO). The AC Coated NIO electrode delivers the capacity of about 131 mAh g^{-1} at 80mAg^{-1}. The retention capacity of material is about 92% after 100 cycles. Such electrochemical action of the current electrode can show the way to cost effective and highly performed Na ion electrode development for Energy storage devices.

Shodhasamhita : Journal of Fundamental & Comparative Research
Vol. VIII, No. 1(XIII) : 2022
ISSN: 2277-7067

FAMILY DYNAMICS IN LITERATURE

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"Family isn't defined by last names or by blood; its' defined by commitment and love'

Dave Willis

Abstract:

Families in general have certain parameters like structure, size, hierarchy, modus operandi etc. The structure may vary from family to family. In general, a family comprises parents, children and if it is an extended family, the grandparents, cousins, aunts, uncles are also included. Sometimes, there is an absent parent which affects the entire family. At other times, one of the parents just exists as in Jane Austen's *Pride and Prejudice*. Sometimes it is a separation or a divorce as in Anne Fine's *Mrs. Doubtfire*. Again, there are families where all the members are there but they do not connect very well as in Preeti Shenoy's *Life is what you make it*. Once again in Eleanor H. Porter's *Pollyanna*, there are no parents to oversee the child's well- being

Key words: Family dynamics, structure, hierarchy, modus operandi.

Introduction : Family was originally instituted by God. God intended people to bond with one another and enjoy close companionship. The dynamics of family evolves and changes with the passage of time. Each family is unique and certainly different from the others.

The paper examines some families portrayed in a few classics which form a microcosm of a miniature world. The novels taken up for the analysis here are:

1. *Pride and Prejudice* by Jane Austen
2. *Mrs. Doubtfire* by Anne Fine
3. *Life is what you make it* by Preeti Shenoy
4. *Pollyannna* by Eleanor H. Porter.

The theories which have been applied here are Attachment Theory byJohn Bowlby, which explains an uncanny bond among strangers and others despite differences in classes, beliefs and backgrounds Pollyannaism which entails seeing the positive in negative situations and Daniel Goleman's Theory of Emotional Intelligence which discusses understanding human emotions and adapting oneself accordingly.

Main Content:

Coming to the novels, one by one, *Pride and Prejudice*, two stories of lovers run parallel to each other. The stories are set against a background of a father, Mr. Bennet who just exists. He is not interested in settling his five daughters. This is in sharp contrast to his wife who is overly anxious about her daughters. The actual role of a father is taken up by the second daughter Elizabeth Bennet.

As her love story unfolds with Darcy, a wealthy young man, Elizabeth proves to be more than a bride. She steers the family towards distinct directions and with the help of Darcy catapults the family to a higher status.Elizabeth and Jane the eldest girl have decidedly fixed their spouses though with uncertainties in the beginning, The bond between the sisters is special. They have so much to discuss about the happenings and mishappenings in the family including their youngest sister Lydia's elopement and her eventual marriage to Wickham. As far as the size of the family is concerned, it is quite large with seven of them- five daughters, parents and besides them a host of servants. Hierarchy is flat and uncertain with Elizabeth at the helm of affairs. The system seems to be bordering on matriarchy. The

RACISM AND OPPRESSION IN MAYA ANGELOU AND TONI MORRISON

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ABSTRACT

African American women's writing and its impact in the society are immense. The twentieth century has been a revolutionary era for the African American literature because many women writers contributed to the growth of feminist writings during this century. These black women writers expressed themselves and created a deep impact on the African American, literary arena. This essay describes in brief, the themes of racism and oppression found in the writings of the two most popular women writers of the twentieth century Black American literature, Maya Angelou and Toni Morrison. Also, it analyses the feminist thoughts presented in their works.

Key Words : African American Literature, Black women writers, Racism, Oppression

INTRODUCTION

African American literature is the literature of pain and survival, of triumphs and defeats, of fears and dreams, and of struggle for freedom, equality and identity, produced by the oppressed ones. Black women have used their skill of writing to discover or assert their identity. As they record their experiences they see the critical paths established by the oppressive forces of racism, classicism and sexism. In exploring what it means to be poor, black and female, they present mirror images of 'self' and the 'other' to the world. Within the marginalized blacks in America, women are at triple disadvantage. Being poor, black and female makes them most vulnerable and easy target for the male-dominated community.

During the colonial period in America (the seventeenth and the early eighteenth centuries), Black Americans lived under oppression by their white colonial masters. They never enjoyed similar rights as the white American citizens. For a long time, the blacks living in America had been undermined, disrespected, and mistreated by the white community due to their skin colour. Subjugation and slavery to black people were common practices between the mid-1700s and early 1800s. This was expected considering the brutal transportation of slaves, especially from Africa, to America to work as black soldiers and cowboys in the farms of rich white men. Over the years, the inhumane treatment and discrimination that followed eventually became unbearable. African Americans did not entirely forget their languages and cultures during the period of slavery in America. We cannot say that African Americans arrived in the United States as hopeless pagans. The native Africans did not overlook their motherland languages and traditions. Nevertheless, Africans in the United States had to struggle to learn how to communicate in a land where there were many people who spoke different languages.

African American leaders of the time began a resistance movement that aimed at calling off discrimination and provision of equal opportunities to the people of colour. Although this movement brought about some changes, the blacks still faced unequal distribution of power and their participation in political life was quite restricted. Inopportunely, the black community was unable to express its concerns over mistreatment and prejudice, due to the lack of power in a chauvinistic nation. The commencement of the pre- Revolutionary War marked the engagement expression. Because of this, African American writers decided that it would be good to present their grievances through writing. This situation led to the rise of many African American writers who championed the rights of fellow blacks through their writings.

Even after being emancipated, African American women still faced staggering impediments when pursuing educational, entrepreneurial and employment opportunities. Political participation meant restrictions on voting rights both as women and as people of colour. Racist caricatures impugned everything from a woman's intelligence and moral capacity to her skin colour, texture of hair and body shape. African American women writers have tackled the hard work of representing a diverse spectrum of lived and imagined experiences, including and especially their own. This labour occurs against the

Language in India www.languageinindia.com ISSN 1930-2940 **Vol. 22:4 April 2022**

Diasporic Consciousness in the Writing of Chitra Banerjee, Jhumpa Lahiri and Kiran Desai - A Glimpse

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Abstract

Since inception, man has always tried for a better life. Stone-age has resulted in advanced technology world-age in exploration of a better life. This quest has always enforced man to move from one place to another, often leaving his homeland. Such movements have turned into kinds of exile as dislocation from the homeland was severe and painful. Language, identity, place, home: these are all of a piece – just different elements of belonging and not-belonging" - Jhumpa Lahiri. Inspired by the vast spread of migration, immigration or emigration, Diasporic literature gained prominence in the universal literature in the backdrop of post-colonial context, simultaneously developing with post-colonial literature. The process of transplantation makes the immigrant a victim of 'rootlessness'. Today, we can say that the most important Indian writing is produced in the Diaspora by writers like Kamala Markandaya, Anita Desai, Bharati Mukherjee, Salman Rushdie, V.S. Naipaul, Vikram Seth, Amitav Ghosh, Rohinton Mistry, Chitra Banerjee Divakaruni, Jhumpa Lahiri, etc. Especially, Indian women diasporic writers have made their voice heard around the world, managed to excel in all areas of literature and achieved global recognition. These female diasporic writers exhibit their own physical and emotional conflicts in their works. Diasporic literature focuses mainly on themes like discrimination, cultural shock, identity crisis, alienation, displacement, dilemma, depression, hybridity and nostalgia.

This article explores the conflicts of cross-cultural identities and transplantation into a new culture in Jhumpa Lahiri's *The Namesake*, Kiran Desai's *The Inheritance of Loss*, and Chitra Bannerjee Divakaruni's *The Mistress of Spices*. The paper undertakes a comparative analysis, from the cultural and feministic points of view of the predicament of women protagonists in immigration as presented in the selected novels.

Keywords: Diaspora, diasporic literature, Jhumpa Lahiri, Kiran Desai, Chitra Banerjee Divakaruni cultural displacement, identity crisis, exile, nostalgia, alienation.

Introduction

Boundaries of Love

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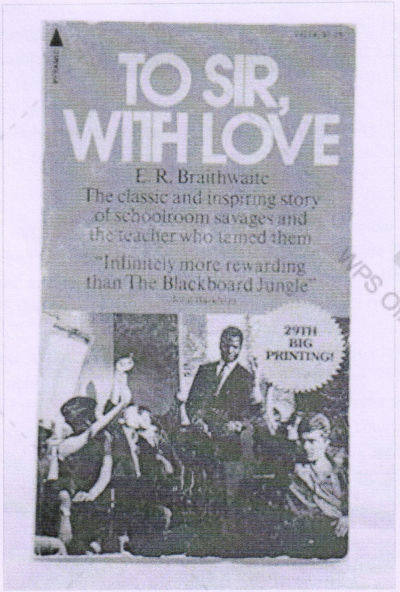

Courtesy: www.amazon.com

To Sir, with Love is a novel by E.R. Braithwaite that describes Braithwaite's personal experiences as a teacher in London, where his innovative teaching methods endeared him to his students. It is an autobiographical novel. The novel is set against the aftermath of world war-II where people struggled to find a steady job. The protagonist is named after the author himself.

JOURNAL OF MANAGEMENT & ENTREPRENEURSHIP
ISSN : 2229-5348
UGC Care Group 1 Journal

DIGITALIZATION AND INCLUSIVE GROWTH

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Introduction

Online education is a form of education where students use their home computers through the internet. For many nontraditional students, among them all those who want to continue working full time or raising families, online graduations and courses have become popular in the past decade. Often online graduation and course programmes, some of which are conducted using digital technologies, are provided via the online learning portal of the host university. Computer-based training, Web-based training, Internet based training, online training, e-learning (electronic learning), m-learning (mobile learning), computer-aided distance education - online education goes by many names and comes in a variety of styles, but at its core: Online learning is rapidly becoming one of the most effective ways to impart education. The impact of the virus was so strong that online education became a seemingly ubiquitous part of our growing world, which resulted in the closure of schools and no further physical interaction of teachers with students. Fortunately, soon enough most of the schools and educational institutions moved to online mode to resume their studies. As a result, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely on digital platforms instead of physical classrooms.

Online classes and technology have emerged as a superhero during the lockdown days. We have all been under house arrest but are still connected with the world of education. Due to the lockdown, students have not been able to stay connected with the outer world and the lack of exposure is evident. The only reprieve for the students' mental well-being has been the transition to online classes. Teachers made sure that the learning for students was not compromised, so they took a great leap forward to find solutions and create new learning environments for their students to ensure that learning never stops. With little time to prepare, curriculums were modified, new lesson plans were created, activities were planned, all so that their students remain actively involved through online learning. For students, online classes have become an imminent trend in the education sector around the globe. Digital learning has provided easy access to the files and folders that can now be organised and saved without any physical damage. With one click, students can access their notes and assignments without the fear of misplacing or spoiling them. With advanced technology, this mode of learning has not only been simpler but fun and engaging as well. Technology-enabled learning is beneficial and has proven to be more engaging as it helps in making those subjects interactive and fun which are traditionally considered dull by students. It became very convenient for the students to attend classes from anywhere in the world as both classes and learning content was easily accessible at home. Integration of the learning platforms with new-age interactive applications has made online classes more convenient for both students and teachers as more students are able to express their views at the same time using certain online applications. Students have been more particular with their online submission as they are notified on a regular basis and it is an effortless task for the teachers to track down the students who have failed to submit their assignments on time. Online learning has helped students to become independent learners before they make their way into the real world. Students got opportunities to explore new learning applications and platforms during the class, which helped them to develop new skills and capabilities accelerating their growth trajectory. Some of the students have been responding well to the active learning environment created online by the teachers whereas others need a push in fits and starts.

Most of the private and public schools have made a smooth transition to online platforms such as Zoom, Google classrooms, Microsoft teams, etc. while many still find it a herculean task. The challenges of online learning are multifaceted. Online learning has played a crucial role during the pandemic, but its consequences cannot be ignored. Online classes cannot be accessed by every student due to the unavailability of smartphones, laptops, and network. Unfortunately, the less

An Appraisal of Gross Domestic Product at Constant (2011-12) Price of States in India from 2015-16 to 2020-21

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Dr. N. Manimehalai[2]

Abstract

Background: Assessment of Gross State Domestic Product (GSDP) is one of the noteworthy pointers to enumerate the economic development in the country and comparative performance of the economy of the state and it is also a vital instrument to determine the regional inequity and the people's level of living. Hence, it is mandatory to assess the GSDP of the country which is whether projected growth rates are within reach and stand proportionate with the investment goals.

Methods: Methodological analyses of the percentage growth rate of GSDP at constant (2011-12) prices over the previous year 2015-16 and a regression analysis applied to the assessment of GSDP are carried out.

Findings: Gross State Domestic Product (GSDP) of all states and union territories of India have increased from 2015-16 to 2020-21 with all of India's GDP. Some states and union territories have a positive growth rate over the previous year 2015-16 while many states and union territories have a negative growth rate over the previous year 2015-16. Almost all states and union territories are having significant GSDP over the years.

Conclusions: The reasons for the negative and lowest percentages of GSDP are the implementation of demonetization, GST, and also many firm issues in the production of the country by COVID-19. There assist to seize curative procedures to amplify the GSDP and formulate policies for the development of the state /union territories of India.

Keywords*:* Gross State Domestic Product (GSDP), the percentage growth rate of GSDP, Regression analysis

1. Introduction

Out of the carnage of the Great Depression and World War II badge the idea of gross domestic product and the definitive measure of a nation's overall welfare, a frame into an economy's depth, the measurement to end all statistics. Its practice spread swiftly, attracting the defining meter of the last century. Then in a currently globalized world, it's progressively apparent that this Nobel-winning measurement is moreover narrow for the worrying economic periods. In 1937, Simon Kuznets, a statistician at the National Bureau of Economic Research offerings the unique design of the gross domestic product in his description to the U.S. Congress, "National Income, 1929-35." His impression is to detention all economic production by individuals, firms, and the regime in a single measure, which would increase in good periods and drop in bad. GDP was innate. Consequently, in 1944, succeeding the Bretton Woods conference which recognized international financial institutions, for instance, the World Bank and the

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Received: 28th October 2021 Revised: 30th November 2021 Accepted: 15th December 2021

BIPOLAR INTERVAL VALUED INTUITIONISTIC FUZZY CONTINUOUS MAPPING

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ABSTRACT:In this paper,Bipolar Interval Valued Intuitionistic Fuzzy Continuous mapping is introduced and the Bipolar Interval Valued Intuitionistic Fuzzy identity mapping is verified as a Bipolar Interval Valued Intuitionistic Fuzzy continuous mapping.

Keyword: Bipolar Interval Valued Intuitionistic Fuzzy Topological Space,Bipolar Interval Valued Intuitionistic Fuzzy mapping,Bipolar Interval Valued Intuitionistic Fuzzy Inverse mapping, Bipolar Interval Valued Intuitionistic Fuzzy Continuous mapping,Bipolar Interval Valued Intuitionistic Fuzzy RegularOpen Set.

1. Introduction

Interval Valued Fuzzy Generalized Semi Pre Continuous Mapping was introduced by R.Jeyabalan and Arjunan[12]. S.Vinoth and K. Arjunan introduced the concept of Interval Valued Intuitionistic Fuzzy Generalized Semi Pre Continuous Mapping[7].P.Kongeswaaran introduced Bipolar Interval Valued Fuzzy Generalized Semi Pre Continuous Mapping[12].In this paper, the concept of Bipolar Interval Valued Intuitionistic Fuzzy Continuous Mapping is defined.

2.1. Definition[21]:Let X be a non-empty set, and let A be a Bipolar interval valued intuitionistic fuzzy set of X in the form

$$A = \left\{ \left\langle x, \left[\mu^{p}_{AL}(x), \mu^{p}_{AU}(x)\right], \left[\mu^{N}_{AL}(x), \mu^{N}_{AU}(x)\right], \left[\gamma^{p}_{AL}(x), \gamma^{p}_{AU}(x)\right], \left[\gamma^{N}_{AL}(x), \gamma^{N}_{AU}(x)\right] \right\rangle \mid x \in X \right\}$$

Asian Journal of Organic & Medicinal Chemistry
Vol. 7 No. 1 (January - March, Special Issue 2022)
ISSN Online: 2456-8937
UGC CARE APPROVED JOURNAL

Adverse Effect of Acacia Nilotica on Freshwater Snails

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ABSTRACT
The acidification is the major threat to the freshwater ecosystem that causes the mortality of snail species. Acacia nilotica is a drought tolerant tree thickly developed on the ground of the pond.The by-products of A. nilotica are barks, stems, leaves, gums, flowers and pods. The study was carried out to investigate the acidification of pond water due to the by-products of A. nilotica falling into the pond and its impact on snail species that work as scavengers of the pond. During the experimental period, the pH of the pond is checked twice a month and the average was calculated for all the months. The percentage of mortality was calculated for the monsoon and summer season. The pH was slightly alkaline (pH 7.4) in the rainy season and dropped to acidic (pH 5.9) in the summer season due to the release of hydrogen ions from the by-products of A. nilotica.The overall results of the investigation pointed out that the percentage of mortality was very less in all the species during the rainy season whereas it was higher only in four among the seven species of snails. It was clear that every snail species had their own capability of survival in varying pH. The acidification of ponds was due to massive litter decomposition of Acacia nilotica. In order to prevent acidification of the pond and mortality of acid intolerant snail species, the best solution is to uproot the acidic plants and trees from the pond with the permission of the forest department. The other possible benefit from this solution is that during the rainy season, the water coming into the pond can be stored in large quantities used for fish farming to meet the food needs of rural areas and protects the snail species from acid-induced death and lets them work as scavengers in the pond.

Keywords: Acidification, extinction, by-products, scavengers, Acacia nilotica

INTRODUCTION

The acidification of freshwater ecosystem is mainly occur by man-made pollutants which disintegrate to form inorganic acids and the neutral condition of freshwater ecosystem is altered by plant by-products that release organic acids responsible for acidification: the acidification of freshwater ecosystems mainly by the addition of hydrogen ions that alter the structural and functional aspects of aquatic ecosystems which leads to the disturbance of biodiversity of aquatic organisms (Spyra, 2017). An invasive species once started to become more aggressive on the ground of aquatic environment or terrestrial environment, the native species that are already dominating they are likely to become endangered or extinct due to lack of essential needs or health hazards permanently caused by the pollutants or in the form of life threatening chemicals from invasive species that leads to decrease in the fertility of native species in the domestic ecosystem (Mayfield et al., 2021).

Acacia nilotica is a drought tolerant tree used for climate change mitigation, adaptation and phytoremediation that grows naturally in black cotton soil and alluvial soil very commonly found as invasive species on the ground of both terrestrial and aquatic environment like ponds, lakes, canals of rural and hilly areas grows up to 15 feet to 30 feet in height with dark bursting park: the leaves are double winged each with 10 to 12 leaves with a quarter of an inch long which can bloom in the month of september and october and the flowers are yellow with a diameter of half an inch followed by the development pods are about 6 inches long and contains 8 nuts (Bargali and Bargali, 2009: Amadou and Souie, 2020). *A. notiluka* trees are very thickly distributed as invasive species in waterlogged ponds frequently shack their byproducts that undergo decomposition which ultimately may cause physico-chemical disparity or acidification by the addition of anion into the pond water which may have profound impact over aquatic fauna especially to higher freshwater invertebrate like molluscs (Ismail et. al, 2016) and also infect other fauna while *Acacia Nilotica* leaves and extract used as Water Disinfectants (Jannah et. al, 2019). *A. nilotica* and *R. communis* leaves, stem and bark exhibited inconsiderably acidic in nature (Naqvi, et.al, 2016). Impacts of Environmental parameters for example low pH caused by decomposition of leaf litters have diminished survival of the freshwater Snail: Forest ponds contaminated by a massive amount of leaf litter, and separation from supplementary aquatic environments make different pH that influence all degree of ecosystems and biodiversity reduces with acidification, due to the eradication of species that are most prone to low pH (Spyra, 2017)

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Studies on Behavioural Response of freshwater fish, Tilapia (*Oreochromis mossambicus*) exposed to synthetic pyrethroid cypermethrin

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Abstract

Behavioural modification is one of the most sensitive indicators of environmental stress and may affect survival of an organism. Behaviour allows an organism to adjust to external and internal stimuli to meet the challenge of surviving in a changing environment and also the adaptations to environmental variables. In the present study, Tilapia exposed to cypermethrin exhibited disrupted school behaviour, localization to the bottom of test chamber and independency (spread out) in swimming, dullness, loss of equilibrium, stop of food intake, erratic and hysteric swimming. An increase in the number of mortalities, with an increase in concentration of the pesticide, was observed. The 96-hour LC50 value of synthetic pyrethroid cypermethrin was found to be 0 .07 µg/L.

Keywords: Stress, Behaviour, Environment, Mortalities and Pesticides

Introduction

Fish are able to uptake different xenobiotics dissolved in water by active or passive processes and retain them in the body. We can detect and document pollutants released into their environment by using fishes. Because their entire body surface is direct constant, contact with the chemical exposure occurs in an aquatic environment. Any change in fish behaviour can also provide important guides for ecosystem assessment. Behaviour allows an organism to adjust to external and internal stimuli to meet the challenge of surviving in a changing environment and also the result of adaptations to environmental variables. Behaviour is a sequence of quantifiable actions, operating through the central and peripheral nervous systems (Keenleyside, 1979) and the cumulative manifestation of genetic, biochemical and physiologic processes essential to life such as feeding, reproduction and predator avoidance (Ramesh Halappa, and Muniswamy David., 2009). Behaviour is a selective response that is constantly adapting through direct interaction with chemical, social and physiological aspects of the environment. This behavioural pattern in concert with morphologic and physiologic adaptations stability provides the best opportunity for survival and reproductive success of organisms. Alterations in the behaviour of fish indicate the deterioration of water quality, as fish are the biological indicator and hence index of environmental suitability and the cost of survival.

Any substances used to control organisms, including insects, water weeds, and plant diseases are toxic to fish. Pesticides usage in agricultural fields to control pests are extremely toxic to non-target organisms like fish and affect fish health through impairment of metabolism, sometimes leading to mortality [Shankar et. al., 2013]. They have been found to be highly toxic not only to fish but also to the other organisms, which constitute the food chain. The contamination of waters by insecticides is known to have ill effects on the growth,

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Impact of Textile Effluent on Bacterial Biodiversity In Noyyal River Bed Soil, Tirupur.

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Abstract: Bacteria are the most important living organisms and abundant organisms in the soil which perform various biological activities. Tirupur is a textile city located on the banks of noyyal river. Most of the textile based dyeing houses are located on the banks of the noyyal river in tirupur which contribute to the abundant release of dye effluent and sludges into the river. The present experiment is designed to evaluate the extent to which bacterial biodiversity has been affected in the noyyal river bed soil in comparison with wasteland soil and cultivable soil. The plate counting method is used to evaluate the bacterial growth and basic composition of bacterial species in different soil samples. The bacterial growth and basic composition of bacterial species increased in the order of noyyal river bed soil, wasteland soil and cultivable soil. The recording of decreased bacterial growth and bacterial species in noyyal river bed soil is due to the contamination of dye effluent in the river. From the experimental results, it is clearly understood that the sufficient effluent treatment plants are to be installed very close to the Noyyal river in order to save both soil microorganisms and the environment.

Keywords: Abundant, Effluent, Biodiversity,Contamination and Environment.

Introduction

Bacteria are the most important living organisms and abundant organisms in the soil in view of the fact that the decomposition of organic matter, decontamination of toxic substance, fix up nitrogen, potassium, phosphorus, and other subordinate trace minerals, and provide the ability to transform into suitable habitats for plants and soil-based organisms (Jacoby et., 2017). The diversity of bacteria in soil depends on their chemical composition, moisture, pH, and structure. Human activity has a necessary influence on the emergence of ecosystems (Furtak K and Gajda AM, 2018). The pollutants affecting the environment formed from various steps committed in the textile industries fabricate different ecological difficulties due to the propagation of a large amount of wastewater encompassing pollutants (Hossain et al., 2018).Textile industry wastewater is composed of a variety of endurance coloring pollutants and synthetic dyes, phenols, formaldehyde, phthalates, surfactants, chlorophenol and aromatic compounds and heavy metals such as lead (Pb), cadmium (Cd), arsenic (As), chromium (Cr), zinc (Zn), and nickel (Ni), chlorides, and sulfates (Kishor et al., 2021). The primary cause for damaging the soil environment is due to the addition of synthetic chemicals, pigments, and dyes that creates complexity in wastewater effluents and sludge (Chen et al., 2021; Manickam and Vijay, 2021; Methneni et al., 2021). Dye effluent discharged from textile industries is a major cause of soil and soil bacterial infestation in cities with high levels causing major changes in the growth of soil-based bacteria and diversity of bacteria (Krishnamoorthy et al., 2020). Microbes play a crucial role in decontaminating polluted sites and degrading the pollution load of textile effluent sedimented in soil (Prabha et al, 2016). Tirupur is a textile city in Tamilnadu with a large number of textile industries. There are several hundreds of dye units around the city

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138
INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) | IJRAR.ORG
An International Open Access, Peer-reviewed, Refereed Journal

DEVELOPMENT AND SENSORY ACCEPTABILITY OF BALLOON VINE (CARDIOSPERMUM HALICACABUM) INCORPORATED EXTRUDED PRODUCTS.

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Abstract
In ancient civilization plants are used to treat common ailments and even life-threatening diseases. Natural plant-based remedies are used for the both acute and chronic health problems. Based on the literature and reports from Ayurveda on the benefits, the herb *Cardiospermum halicacabum* Linn herb was selected. The study aims to formulate healthy extruded product by incorporation of balloon vine and thus making it healthier for consumption. The potentially valuable components are present in balloon vine such as phenols, phenolic acid, flavonoids, phytochemicals, glycosides and bioactive compounds which is beneficial to health. Balloon vine were dried by sun drying method and then powdered. The powdered balloon vine is stored in air tight container and analysed for proximate analysis (calcium 106.5 mg/100g, ash 7.3% and fiber 7.8%). Experimental product was developed with the incorporation of balloon vine powder in the (%) ratio of 10:10 (V1), 15:10 (V2), 20:10 (V3) and 30: 10 (V4) in rice flour. Pure rice flour based extruded product was taken as control. The analysis showed that experimental product variation 2 was most acceptable than the other variations.

Key words: balloon vine, health, consumption, experiment.

Introduction
In ancient civilization plants are used to treat common ailments and even life-threatening diseases. Natural plant based remedies are used for the both acute and chronic health problems. Plant medicine are used as most widely because due to less or no side effects (1). *Cardiospermum helicacabum* Linn is commonly known as Balloon vine. The potentially valuable components are present in balloon vine such as phenols, phenolic acid, flavonoids, phytochemicals, glycosides and bioactive compounds which is beneficial to health (2). Extrusion is used in food processing, forcing soft mixed ingredients through an opening in a perforated plate or die designed to produce the required shape. Food products manufactured using extrusion usually have a high starch content. Theses include some pasta, breads, many breakfast cereals and ready to eat snack, etc. (3)

Objective
- To identify the plant
- To formulate and standerrzise the *Cardiospermum helicacabum Linn*
- To estimate the acceptability of the formulated powders and to incorporate in extruded food.

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STUDY ON SUPPLY CHAIN MANAGEMENT PRACTICES FOLLOWED BY SELECT MANUFACTURING COMPANIES IN COIMBATORE DISTRICT

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ABSTRACT

Supply Chain Management (SCM) plays significant role that helps companies to adopt modern technology to improve their system and also effectively serve their customers. The growth of supply chain aims to improve profitability, customer response and ability to deliver value to the customers and also to improve the interconnection and interdependence among firms. Due to market expanding from domestic market to global market, increased customer demands, for instance demanding lower prices, faster delivery, higher quality products or services and increase the variety of items. To achieve all these, there has to be a systematic approach, integrating activities involved in supply chain. Therefore, this paper aims at exploring the various Supply Chain Management (SCM) practices in support of integrating all the supply chain processes across the entire value chain, at select organizations in Coimbatore District. Primary and secondary data are collected from 155 organizations using simple random sampling method and analyzed using percentage analysis and Coefficient of Variance. It is found that Lean, Six Sigma, Total Quality Control (TQC) and Total Quality Management (TQM) are the major Supply Chain Management practices adopted by organizations.

Keywords: Supply Chain Management, Organization, Supply Chain Management Practices, Lean, Six Sigma, Total Quality Management etc.

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

A STUDY ON BUYING BEHAVIOR OF SMART PHONE AND PROBLEMS ENCOUNTERED AMONG COLLEGE STUDENTS IN COIMBATORE CITY

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ABSTRACT

In this context, the study attempts to examine the buying behavior of smart phone and to know the problems encountered among college students while using the smart phone. This survey was administered among 100 college going students. Two criteria were taken into consideration while choosing the participants for the survey. The participants are college going students and are mobile phone users. Each of the survey responses was entered in SPSS and analyzed using chi-square test. From analysis it is clear that there is a significant association between monthly income and amount spent for purchasing the smart phone. There is no significant association between educational qualification and brand possessed. Lenovo tops the list in the problems of hanging, battery issues, poor connectivity, display and overheating and Oppo tops with slow processing problem.

Key words: Smart phone, College students, Buying Behavior.

INTRODUCTION

Smart phone provides an interactive feature for an increasingly wider users around the region and the world. It has become an integral part of everyday student's life. The development of smart phones began in the early 1990's and exploded in 2007 dominated by different operating systems with continuous development. In 2011 RBC Capital analyst, Dan Frommer projected that mobile phone sales are expected to outstrip PC sales and the smart phone users worldwide will triple from 165 million to over 500 million within the few years. Developments of the mobile phones popularly called smart phones allow users to perform activities such as sending text messages, calling, chatting

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

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A STUDY ON CONSUMERS AWARENESS AND ATTITUDE TOWARDS FMCG PRODUCTS PRICING STRATEGIES

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ABSTRACT:

The consumer behaviour plays an important role in marketing of fast moving consumer goods and this behaviour is effected by various factors. In the present era of globalisation needs and wants of consumers changes with time. In a competitive market environment the aim of the study is to assess fast moving consumer product awareness and attitude based on price strategies. Qualitative research methods are used by the design of a combination of grounded theory and phenomenology, as well as constructive approaches. The required information was gathered using a questionnaire. The results show that the consumer's awareness and attitude has a positive and significant effect on price sensitivity to FMCG products.

Keywords: Fast moving consumer goods, awareness, market environment, consumer behaviour.

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

A REVIEW ON IMAGE SEGMENTATION ALGORITHMS FOR DISEASE DETECTION IN LEAVES AND FRUITS

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Abstract - The image segmentation is the process applied in order to fetch the significant objects from the given input image which in turn is used for further analysis. Image segmentation can also be coined as the technique of separating an image into different segments. Basically the segmentation is based on features such as pixel intensity value, gray scale, color, depth, brightness, texture, etc. Based on these there exists several image segmentation techniques. In this paper we present the review of the image segmentation methods.

Index Terms: - segmentation, clustering

I. INTRODUCTION

Image processing has an immense application in agriculture area. Detection of diseases at its earlier stage is much essential to avoid the huge loss. This can also help the farmers to safeguard them from the economical loss caused to them.

Studying the image understanding it and then extracting information from the image to accomplish an activity is considered as an important task and it is process of image segmentation. There is no need to process the entire image and only the required area of the image needs to be processed for further analysis. Segmentation is a process which is used for identification of such areas of interest. The image is made up of set of different pixels. The pixels which have related attributes are grouped together using image segmentation techniques. Pixels are grouped on the basis of the properties they have such as gray level, color, texture, motion, etc.,[1].

The segmentation focuses to limit the objects among all other and separating the image into significant illustrations. Apart from playing an important role in image processing the segmentation process forms the basis for feature extraction and image recognition. Based on certain criteria the given image is divided into number of segments. Many applications needs to process different areas of plants like leaves, fruits, vegetables etc., in order to identify the disease, identify the matured fruits and so on.
The main focus of this article is to update the researchers about the current segmentation techniques applied in the areas of disease detection in plants.

ISSN No:-2456-2165

A Review on Fruit Disease Detection and Classification using Computer Vision Based Approaches

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Abstract:- Plant Diseases are one of the leading reasons of economic shortfalls in agricultural and farming sectors worldwide. It is the most essential element since it reduces crop quantity and quality significantly. Fruits are one of the largest essential nutritional resources from plants. Unfortunately, a variety of conditions might impair both the content and outcome of fruits. As a result, an autonomous Computer Vision (CV) -based approach for reliable Fruit Disease Detection (FDD) is necessary. CV is an Artificial Intelligence (AI) area that allows software and algorithms to extract relevant data from digital images. Over the past decades, advanced AI techniques such as Machine Learning (ML) and Deep Learning (DL) algorithms have been developed to predict and classify FDs early from different imaging modalities. The findings observed from these techniques can help farmers with FDD and treatment. This paper presents a detailed review of different ML and DL algorithms developed to predict and classify FDs from different fruit images. First, different FDD and classification systems designed by many researchers based on ML and DL algorithms are studied in brief. Then, a detailed analysis is carried out in order to identify the shortcomings of existing algorithms and to provide a novel strategy for properly classifying fruit pathogens.

I. INTRODUCTION

Agriculture has long been a key profitable area in terms of its societal influence, especially in impoverished nations. One of current primary issues is satisfying the ever-increasing needs and expectations for high-quality food items. Although the facts that numerous causes, including plant pathogens, climatic changes, and others, have a significant influence on agricultural productivity, crop infection has been recognized as one of the primary sources of food shortages, significantly hurting small-scale farmers. Small-scale farmers contribute nearly 80% of cultivations in poor nations, according to statistics, and yield losses are substantially heavier in these regions due to a scarcity of assets to handle insect infections and plant viruses [1].

Pomes, drupes, berries, melons and citrus fruits are examples of fruit plants that provide significant growth to productivity. FDs have an impact on fruit output; a decrease in fruit yield ultimately has an impact on a state's total revenue. It has the potential to affect not only cultivation but also the area economy. Besides from additional food shortages, infection destroys about 10% of crops every year, which can be significantly greater in underdeveloped nations relying on crop variety, environment, and agricultural traditions [2].

As a result, it is critical to diagnose and recognize these infections at an earlier phase in order to avoid substantial consequences. Earlier diagnosis and recognition of FDs can increase fruit quality and production. Pathology lab professionals are extensively relied on by farmers in poor nations to diagnose and control infections. Immediate infection identification is crucial for limiting infection transmission across the crop and area, especially in fruit trees. Fruit plant infection identification has always been tough for farmers who must maintain the total area by examining all crop growth. Because the physical identification method consumes a significant amount of effort and money, automatic computerized approaches must be implemented [3].

These computerized systems' key methods include preprocessing, clustering, feature extraction and selection, and categorization. To identify fruit infections, AML algorithms Neural Networks [4] have been suggested. For segmentation, K-Means clustering was used, which provides border pixels labels among objects. Image color, morphology, texture, and whole structure are used as feature vectors for disease diagnosis. Furthermore, certain programs for disease identification, such as Plantix [5] and GreenR [6], have been created employing cloud-based services. A DL-based strategy for reliably identifying the illness as well as its intensity degree has been presented [7]. Agriculture has also benefited from DL approaches. Advances in CV and AI can result in novel solutions. These approaches produce more precise forecasts than previous methods, allowing for more informed decision making. Because of advancements in hardware technology, DL techniques are now employed to solve complicated issues in a reasonable period of time.

Researchers have primarily focused on enhancing the efficiency of ML and DL-based techniques in FDD. The main goal of this manuscript is to provide a complete survey of ML and DL-based systems to detect and classify FDs for different fruit images. Also, a comparative study is presented to address the advantages and disadvantages of those methods in order to suggest future scope. The rest of the sections are prepared as follows: Section II discusses

CLUSTER HEAD SELECTION ALGORITHM IN WSN USING MOPSO

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Abstract

The most important challenge in establishing sensor network is energy efficiency. Clustering has been demonstrated to be one of the well-organized methods for saving energy of wireless sensor networks (WSNs). Clustering shares networks into inter-related clusters such that every cluster has several number of sensor nodes with a Cluster Head (CH) at its head. Sensor congregated information is communicated to data processing midpoints through CH hierarchy in clustered locations. Therefore, the proper selection of CHs plays dynamic role to conserve the energy of sensor nodes for persisting the lifetime of WSNs. In this proposed method an energy efficient cluster head gathering algorithm which is based on Multi Object Particle Swarm Optimization (MOPSO).The algorithm is established with an efficient arrangement of particle encoding and fitness function. For the energy efficiency of the proposed MOPSO approach, it considers several parameters such as message overhead, redundant avoidance, and latency time. It present cluster construction in which non-cluster head sensor nodes joint their CHs based on lacking in originality weightiness function. The algorithm is certified expansively on various consequences of WSNs, changeable number of sensor nodes and the CHs. The results are associated with explicit surviving algorithms to validate the pre-eminence of the proposed algorithm.

Keywords: Wireless Sensor Networks (WSN), Clustering, CH-selection, Energy efficient Clustering, Multi Object Particle Swarm Optimization (MOPSO)

Introduction

Wireless sensor networks are involved in varied applications, for instance; in the field of perceiving of an atmosphere, disaster association, industrial process management, battlefield detectingetc. In WSN, the sensor node has the identifying and communicationcapability to sense the in effect environment for the desired information and disrespectful this data it to a base-station for ancillarydispensation. When the sensor node is associated, then it is not feasible to access it for renewing or interchange its battery. It

PATTERNED FABRICS FEATURES EXTRACTION AND SELECTION BASED ON ROBUST FEATURE EXTRACTION AND PARTICLE SWARM OPTIMIZATION METHOD

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ABSTRACT:

In textile industry, defects that occur in fabrics during production processes cause the producers to suffer large losses of money and fabric. Various studies have been carried out to minimize these losses. There are two types of defect detection methods, that are human-focused and machine-focused defect detection. In human-focused systems, defect detection is maintained after the production phase. This does not provide an advantage for the manufacturing. The quality of the fabric can be developed by decreasing defects in the sfabric. Defect detection with machine focused method have better results. For patterned fabrics, the key problem is to reduce the influence of texture features. The proposed work focuses on patterned fabric defect detection. The main aim of this paper is feature extraction with selection. There are many features are available in patterned fabrics such as color, textures, shapes, etc., Feature extraction used to extract those features from pattern fabric images. A novel Patterned Fabrics Feature Extraction and Selection method is based on Robust Feature Extraction and Particle Swarm Optimization analyzes two robust feature detector and descriptors. They are Scale-Invariant Feature Transform (SIFT) and Speeded Up Robust Features (SURF). These two robust feature descriptors are extract all patterned fabric features such as color, texture etc., The Particle Swarm Optimization (PSO) algorithm is used to select the appropriate defect features from the robust feature extraction. The observed parameter values significantly increases the success rate of the feature selection.

Keywords: Patterned Fabric, SIFT, SURF, PSO

1. Introduction:

Textile and garment industries are one of the fastest growing and competitive markets worldwide and form a major part of production, manufacturing, employment and business operations in many developing countries. The changes have increased both yield and quality of fabrics, apart from reducing expenses and labor cost. The majority of the companies are paying more attention on improving their

Journal of Theoretical and Applied Information Technology
15th March 2022. Vol.100. No 5

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

RESILIENCE HIDDEN MARKOV MODEL BASED SUPPORT VECTOR MACHINE FOR CROSS - DOMAIN SENTIMENT CLASSIFICATION IN BIG DATA

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ABSTRACT

Sentiment Analysis (SA) utilizes text contextual mining to identify and extract core subjective information from the source material. Businesses can use SA to monitor online comments or reviews about their brand, product, or service to understand how people feel about their organization. Currently, available classifiers are developed to classify sentiments only in a specific domain, and if it is applied in different domains, it will never give its better performance. General machine learning-based algorithms cannot give the best performance when applied in big data. This paper proposes a Resilience Hidden Markov Model based Support Vector Machine (RHMM-SVM) to classify sentiments in different big product review datasets. RHMM - SVM makes use of a forward - backward strategy to attain better classification accuracy in different big product review datasets. RHMM - SVM is compared and analyzed against existing classifiers with benchmark metrics, namely Precision, Matthew Correlation Coefficient, F1 - Score and Classification Accuracy. Results make a clear indication that RHMM - SVM has better performance than previous classifiers.

Keywords: *Classification, Product Review, HMM, Big Data*

1. INTRODUCTION

In recent years, the fast growth of social media has resulted in an enormous volume of daily responses worldwide, including reviews, opinions, and comments. Several companies and individuals use feedback from customers and users to help determine the quality and effectiveness of a product or service [1]. As a result, this data must be analyzed to identify and recognize important information and polarizing opinions. Companies and individuals must be able to determine if customer feedback is favourable or unfavourable automatically. Sentiment analysis is a method for determining and categorizing people opinions based on the degree of polarity with which they are held. Analysis of sentiment is an activity to uncover subjective content, such as the author's feelings or thoughts [2]. This means that sentiment analysis has an essential role in recognizing and categorizing the polarity of user - generated material. When a user or organization needs to know if a specific opinion is good or bad, this feature comes in handy. Users can locate information more rapidly with the aid of Sentiment Analysis. Sentiment analysis has gotten a lot of attention lately because of all of the new information available.

The sheer volume of evaluations has made it nearly impossible for consumers to keep up with and understand the public discourse. As a result, vast amounts of opinionated writing must be mined for their viewpoints and synthesized into a digestible form. We anticipate that a sentiment analysis model will be helpful to users in solving this issue [3]. As a result of this requirement, a sentiment analysis model must identify and deliver beneficial information about the representative opinion sentence. Taking the time to analyze customers thoughts before making a decision is helpful for the surveyed people and the businesses collecting the data. Sentiment analysis is used to determine the polarity of a piece of writing, such as whether a text expresses positive, negative, or neutral feelings. Text mining, web mining, and

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

AN INTEGRATED METHODOLOGIES FOR PRIVACY PRESERVING IN CLOUD OVER BIG DATA USING HADOOP FRAMEWORK

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Abstract:

One of the most important aspects of big data research is data security. The majority of cloud systems deal with perceptive in order, such as personal, business, or health-related information. The rise of cloud storage systems poses a threat to this type of data. Traditional security methods, on the other hand, fail to protect large data transmissions. An effective privacy-preserving methodology to handle data generation and protection issues. Initially, cloud-based big data is clustered with multiple security procedures, which are balanced with the help of a Hadoop-based map-reduce mechanism.

Furthermore, the data and information are encrypted using a variety of data security measures, and the convolution process is carried out over the data encryption process. The deep neural network establishes the evaluation process (DNN). The data will be passed through the convolution process again if the encrypted data is not adequately encrypted. The proposed framework combines experimental discoveries with current methodology, and the big data-based privacy-preserving scheme outperforms existing strategies when data size is changed.

Keywords: Big data, encryption, cloud storage, classification, clustering, optimization.

1. Introduction

Big Data is a big volume of data that continues to rise exponentially over time. It's a data set so massive and complicated that no typical data management technologies can effectively store or process it. Big data is similar to regular data, except it is much larger. Medical researchers and clinicians use big data to uncover disease indicators and risk factors, as well as diagnose illnesses and medical problems in patients. Furthermore, data from electronic health records, social media sites, the internet, and other sources is combined to provide healthcare organisations and government agencies with up-to-date information on infectious disease threats and outbreaks.

Data security is the combination of confidentiality, which prevents unauthorised disclosure of information, integrity, which prevents unauthorised amendment or deletion of information, availability, which prevents unauthorised withholding of information, and privacy, which is the ability of an individual or group to reveal information about themselves selectively.

For the future generation of IT applications, cloud computing is a promising and developing technology. The fast expansion of cloud computing has raised concerns about data security and privacy. Researchers have offered a number of strategies for data protection and achieving the maximum level of data security in the cloud.

Hadoop is an Apache v2 licensed open-source software platform that facilitates data-intensive distributed applications. Simple programming models abstract and simplify the storage and processing of vast and/or fast growing data collections, as well as structured and unstructured data. It provides high scalability and availability by utilizing commodity hardware with minimal redundancy and fault tolerance. Hadoop prioritizes compute over data. The cluster's main nodes house the majority of the system's computational power and storage.

The efficiency of privacy-preserving bigdata security in the cloud via Hadoop has been improved utilizing several ways in this research. The first method encapsulates certain mechanisms with the MapReduce programming paradigm to explore and realize privacy preserving knowledge discovery from big data, as well as the framework known as IDEA with Hadoop framework. Optimal Support Vector Machine is the second method. The Hadoop framework was utilized to reduce repetitious encryption and decryption procedures for public and hybrid files using a classification method for privacy preservation in the cloud. The categorizing strategy shows a significant improvement.

The remainder of the article is organized as follows: the overview of the related work discussed in section 2 and the main objective of the proposed research summarized in section 3 and Design and Development of Enhanced Privacy Preserving Methods detailed in section 4 and performance evaluation elucidated in section 5 and finally the paper concludes with discussion and summary of future enhancement discussed in section 6.

Contents lists available at ScienceDirect

Materials Today: Proceedings

journal homepage: www.elsevier.com/locate/matpr

Multi-parametric multiple kernel deep neural network for crop yield prediction

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ARTICLE INFO

Article history:
Available online xxxx

Keywords:
Crop yield prediction
DNN
GDD
Multiple kernel learning
Multi-parametric multiple kernel DNN

ABSTRACT

A rapid, precise and credible prediction of crop yield at a wider scale is more important than ever for crop management, the measurement of food production, food trading and policymaking to address the challenges of environmental change, increased population and food demand. Deep Learning (DL) models are recently well-known for predicting crop yields. Multi-parametric Deep Neural Network (MDNN) is a DL model employed to estimate the crop yield concerning multiple parameters such as climate and soil. A Growing-Degree Day (GDD) has been used to determine the impact of climate change on crop yield. The determined values along with the climate and soil parameters have been learned by the DNN to estimate the yield quality. The MDNN performs well with the huge volume of data and it is not suitable for the medium scale of data. The learning ability of MDNN is improved in this paper by proposing a Multi-parametric Multiple Kernel DNN (MMKDNN) to provide better crop yield prediction for medium-scale data. The effectiveness of the model built in the last hidden layer is solely determined by the intermediate representations of the input. The intermediate representation of the input in a neural network is combined through multiple kernel learning. The MMKDNN with increasing complexity representations is preserved in this way, but the output calculation, i.e. crop yield prediction, is free to use all of the network's knowledge. For five different types of crops, the experiments are conducted to assess the efficiency of the MMKDNN.

Selection and peer-review under responsibility of the scientific committee of the International Conference on Innovative Technology for Sustainable Development.

1. Introduction

Crop yield forecast [1] at a macro and micro level is significant for advanced detection of groceries malnutrition, farming supervision and financial advertise prediction. Typically, a crop yield prediction method is depending on manual and automated systems. The manual system [2] is typically used to promote crop growth and yield development processes using a crop model. Yet, the machine learning model [3] is commonly employed in a practical wide range of farming applications because of the complexity and poor efficiency of the physical-model-based approach at a large scale. But, machine learning models are mainly related to the model representation and consistency between input and output variables.

As a result, crop yield prediction is done using DL techniques [4]. DNN [5] is a DL technique where the collected data was converted into an abstract representation with the help of stacked hidden layers. The prediction accuracy of DNN was improved by increasing the number of layers for high-dimensional relevant features. The efficiency was enhanced using the MDNN [6] where multiple criteria were employed to formulate the effect of climate and soil conditions on crop production, so the model is likely to be much more precise. Another novel feature was added to MDNN, called GDD, which estimates yield condition over a Growing Day (GD) by weather effects on yield.

This paper describes how MDNN can improve medium-scale crop yield predictions. This is a case where an intermediate representation of the deep feed-forward system can be applied to the subsequent hidden layer, helping to boost network efficiency. The final consistency of the hidden layer representations is fine-optimized by the use of multiple kernel learning for estimating yield. The quality measure describes the amount of yield generated

Abbreviations: DNN, Deep Neural Network; GDD, Growing-Degree Day.

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https://doi.org/10.1016/j.matpr.2022.03.115

Selection and peer-review under responsibility of the scientific committee of the International Conference on Innovative Technology for Sustainable Development.

Materials Today: Proceedings xxx (xxxx) xxx

Contents lists available at ScienceDirect

Materials Today: Proceedings

journal homepage: www.elsevier.com/locate/matpr

A concatenation of deep and texture features for medicinal trash image classification using EnSegNet-DNN-based transfer learning

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ARTICLE INFO

Article history:
Available online xxxx

Keywords:
Clinical trash classification
EnSegNet-DNN-TC
Texture features
Deep features

ABSTRACT

The foremost vital process in clinical trash classification is to classify the medicinal wastes into various categories like contagious, poisonous and normal wastes. For this purpose, several deep learning systems using different structures including ResNext, GoogleNet, etc., are designed. Among those systems, an Enhanced Segmentation Network (EnSegNet) with DNN-TC (EnSegNet-DNN-TC) system has achieved a higher efficiency by segmenting and classifying the trash input images. Although it segments and extracts features effectively, there are very subtle differences between many images because of their highly complex background. This leads to misjudgments of the deep learner system. Therefore in this article, an EnSegNet with Combined Feature Extraction (CFE) and DNN-TC called EnSegNet-CFE-DNN-TC system is proposed to solve misjudgments problem in deep learner classifiers due to high complex background images. First, the input images are segmented by the EnSegNet model. After that, various texture characteristics, namely Gray-Level Co-occurrence Matrix (GLCM), Multi-level Local Binary Pattern (MLBP), Local Derivative Pattern (LDP) and Local Ternary Pattern (LTP) are extracted including the deep features from the segmented images. Then, a new layer called the combination layer is introduced after the Fully Connected (FC) layers to fuse the extracted features and construct a new hybrid feature vector. This hybrid feature vector has a stronger discriminant ability compared to the single feature vector. Further, the softmax is performed to classify the medicinal wastes. Finally, the investigation outcomes reveal that the EnSegNet-CFE-DNN-TC system attains a 93.7% of classification accuracy for 100 trash images compared to the EnSegNet-DNN-TC and DNN-TC.

Selection and peer-review under responsibility of the scientific committee of the International Conference on Innovative Technology for Sustainable Development.

1. Introduction

Medicinal waste typically comes from health practices for individuals, animals, clinical researchers, wastes in the clinical laboratories and others. A portion of the waste material is infectious or potentially harmful and should be precisely controlled to safeguard healthcare and hygiene professionals. Medicinal waste is usually monitored and managed in many countries based on specific algorithms and guidelines. During improper monitoring of medical activities, wastes are made, causing a potentially severe impact on the community, the hospital staff. The serious threats to the health of the population, care centers, clinics and biodiversity are medicinal wastes. It should always be handled in a healthy environment and not combined with industrial, toxic, or other laboratories waste Chauhan and Singh [1], Refonaa and Vivek [2], Kumar et al.[3] Almost 75–90% of clinical wastage is healthy and safe like any other waste. The remaining 10–25% is hazardous to individuals or animals or the environment.

The Indian Government reports that the safety and care of hospitals are involved in hospital waste. Biomedical waste has been divided by the World Health Organization (WHO) into various categories, including normal waste, highly infectious or harmful wastes, radiation, industrial, pathological, ventilated tubes and vaccines. The WHO has also established a range of learning activities for guidelines in healthcare waste management addressing all attributes of waste disposal identification and classification tasks to guide their recycling process by non-incineration and disposal strategies. In modern times, the popular use of machine learning was involved in classifying medicinal waste. Deep Neural Networks (DNNs) which can recognize and categorize waste from the image Achuthan and Madangopal [4], is one of the best approaches for labeling waste or garbage efficiently. For the use of images for clinical waste categorization processes, several

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https://doi.org/10.1016/j.matpr.2022.03.129
2214-7853/
Selection and peer-review under responsibility of the scientific committee of the International Conference on Innovative Technology for Sustainable Development.

Hindawi
Journal of Engineering
Volume 2022, Article ID 4274436, 8 pages
https://doi.org/10.1155/2022/4274436

Research Article

An Investigation of the Dielectric Properties of Barium Oxide: Therm500 Nanofluids at Different Temperatures

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Received 3 June 2022; Revised 27 June 2022; Accepted 9 July 2022; Published 17 August 2022

Academic Editor: Karthikeyan Sathasivam

The dielectric characteristics of barium oxide: Therm500 nanofluids were investigated at a static frequency in this study. Barium oxide: Therm500 nanofluids are made by dispersing barium oxide nanoparticles in Therm500 (base fluid) using a sonicator. The static dielectric measurements were made with a frequency domain reflectometry (FDR) sensor. At various temperatures, the values of several dielectric properties, including dipole moment (μ), molar polarization (P), excess dielectric constant (ε^E), static dielectric constant (ε^O), and excess dipole moment (μ^E), have been measured for BaO: Therm500 nanofluids. Kirkwood factor and Bruggman factor were also computed and presented. The fluctuations in dielectric properties concerning six distinct combinations including 0.001 grams, 0.002 grams, 0.003 grams, 0.004 grams, 0.005 grams, and 0.006 g of nanofluid systems and four different temperatures such as 300 K, 303 K, 313 K, and 323 K are investigated in terms of intermolecular interactions. At all temperatures, the abovementioned dielectric properties BaO: Therm500 nanofluids are positive-negative variations across the whole combination range suggesting in nanofluids the existence of molecular interactions. Synchronization in both parallel and antiparallel of the dipoles in the fluid's mixture are verified by the Kirkwood factor. The Bruggman factor depicts the divergence from the linear relationship in nanofluids, indicating molecular interactions. Dielectric properties of BaO: Therm500 are being studied to understand better their physical, technical, chemical, industrial, laboratory, biological, and pharmaceutical applications.

1. Introduction

The dielectric constant is a material's ability to increase a condenser's capacitance. The dielectric constant is governed by the molecule's permanent dipole moments and its polarizability in terms of structure. The ease with which the electron density of a molecule can be altered is called polarizability. The dielectric constant rises as the dipole moment and polarizability rise. The formation and composition of complexes in nanofluids containing various numbers of nanoparticle molecules are determined using dielectric measurements [1, 2]. Researchers have been intrigued by the dielectric behaviour of polar and non-polar substances, as well as their combinations, at various combinations and temperatures. Merely only a few researchers, however, have used dielectric properties to investigate the molecular interactions of nanofluids [3, 4].

Dielectric studies have become increasingly important in understanding the interplay of the components in recent years. The other dipole moment in numerous H-bonded complexes was explained using the polarization effect, charge transfer effect, and proton transfer impact. Poor H-bonding can be caused by poor interaction between electrostatic charges. No chemical approach can detect such low-energy hydrogen bonding. As revealed by Sivakumar and Kumar, even weak interactions can be detected in dielectric investigations [5]. They understood the intermolecular interactions induced by dipole-dipole contact and

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Songklanakarin J. Sci. Technol.
44 (4), 979–986, Jul. – Aug. 2022

SJST
http://www.sjst.psu.ac.th

Original Article

Synthesis and characterization of zinc doped beryllium oxide: Ethylene glycol nanofluids

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Received: 14 January 2022; Revised: 2 March 2022; Accepted: 22 April 2022

Abstract

The current study used ultrasound-assisted chemical precipitation to create zinc doped beryllium oxide (BeO) nanoparticles. X-ray diffraction (XRD) and scanning electron microscopy (SEM) were used to characterize the synthesized samples. The effect of sonication on the size of zinc-doped BeO nanoparticles is discussed. The presence of zinc-doped BeO nanoparticles with an average crystallite size of 17.89 nm was established by X-ray diffraction. The FTIR peaks at 434.97 cm^{-1} and 1,110.08 cm^{-1} confirm Zn and Be in them. Sonication was used to disperse the nanoparticles in ethylene glycol, resulting in a nanofluid. The nanofluids were prepared in six concentrations from 0.0005 to 0.0030 wt% and characterized by ultrasound velocity and Fourier transform infrared (FTIR) spectroscopy as well as photoluminescence. Ultrasonic studies and FTIR analysis confirmed the absence of particle-fluid interactions. The maximum intensity was at 510 nm wavelength in the photoluminescence spectra, giving the electron transition energy. Thermal conductivity and viscosity revealed an optimum concentration at 0.0025 wt% zinc-doped BeO in ethylene glycol nanofluid, for maximal heat transfer with the highest thermal conductivity of 0.265 W/mK.

Keywords: BeO nanoparticle, Sonication, beryllium sulphate, crystallinity index

1. Introduction

Nanomaterials have made tremendous progress in recent years due to their unique electrical, optical, magnetic, mechanical, and chemical capabilities, which differ greatly from those of larger particles (Loong, Salleh, Khalid, & Koten, 2021; Mwafy, Mostafa, Awwad, & Ibrahium, 2021; Shi & Cheng, 2020). Metal oxide nanoparticles, in particular, have attracted the attention of researchers in a variety of fields due to their distinct physical and chemical properties (Dag, Akcay, Koten, & Guner, 2019; Morris, Farrell, & Tabor, 2019; Shah, Koten, & Ali, 2020; Shao, Hanaor, Shen, & Gurlo, 2020). A nanoparticle is, in theory, any collection of atoms bonded together with a structural radius of 1-100 nm. This may include, for example, fullerenes, metal clusters (metal atom agglomerates), large molecules such as protein, or even water molecules as hydrogen bonded composites, which are available in water at room temperature. Nanoparticles have a large specific surface area with a large fraction of the

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© August 2021| IJIRT | Volume 8 Issue 3 | ISSN: 2349-6002

A Journey Towards Self-Realization in the Novel God of Small Things

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Abstract **- Booker prize winner Arundhati Roy's novel God of Small Things speaks about casteism, discrimination, marital issues, childhood struggles, marginalization, and woman subjugation. The plot is centered on the life of the twins Rahel and Estha who face traumatic childhood experiences because of their parental mistakes, social construct, and patriarchal society. The psychological issue that they face is the feeling of not being loved and also they were tormented physically and emotionally. The setting of the story is set in Kerala which follows the old patriarchal order. The novel is in third person narrative to give the readers a better perspective of the feeling and emotions of the characters. The various characters in the novel make mistakes that directly and indirectly affect the lives of the twins. Each character in the novel has a traumatizing past.**

The founder of analytical psychology Carl Jung has explained the impact of the consciousness and unconsciousness, which became a great breakthrough in the field of psychology. He is known for the concept of collective unconsciousness which in simple terms means that every individual has a similar psychological construct and he also explains the influence of the unconscious in day to day situations. The article explains through God of Small Things and Carl Jung's theory that an unconscious traumatic experience faced by an individual has an effect on one's actions and thought process.

Index Terms **- Culture, identity, feminism, psychology, understanding, dreams, self-realization, Caste, society, marginalization, unconscious, conscious, Carl Jung.**

INTRODUCTION

Booker prize winner Suzanne Arundhati Roy has occupied a prominent place among the contemporary literary world's prominent figures. Women's rights, gender politics, and identity are among the major themes in Roy's debut novel. The condition of the society, communism, untouchability, strained human relationships, loss of identity, and a constant quest to achieve it are woven into the fictitious fabric of *The God of Small Things*. Women and other vulnerable groups have made their space for themselves by fighting against all forms of exclusion.

The oppression structures in this novel differ depending on the context. Applying Carl Jung's psychological theory to the novel, the gender issues faced by the characters, their struggle to create an identity during a patriarchal era are analyzed. There is a strong focus on the horrors of caste and gender discrimination that is prevalent in India. There is also a focus on how women, generally, are marginalized and oppressed. The article examines the discourse of marginality and the resistance towards it. This theme is evident in each of the novel's generations, which emphasizes women's subjugation. A male-dominated society, broken homes, and caste discrimination are all depicted in *The God of Small Things*, along with the problems faced by women in it.

Gender does not only refer to social and cultural constructions of being female or male. Feminism and masculinity are viewed as cultural and social constructions. Since it is a product of culture, it can hardly be separated. Judith Butler introduced the notion of gender performativity in her book *Gender Trouble* in 1990. In her view, a person's behavior is not determined by being born male or female. Rather than fitting in, people learn how to act in certain ways. In her female characters, Roy portrays gender as irreproachable, as Judith Butler makes clear in *Gender Is a Performance.*

As a patriarchal society, Indian women have always suffered and have been suppressed, this is evident in the novel *The God of Small Things*. The novel focuses on the experiences of women across three generations. Mammachi and Baby Kochamma are the first

Elements of Magical Realism in the Novel The Palace Of Illusions

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Abstract:

Chitra Banerjee Divakaruni is a world-acclaimed author, born in Calcutta, who published literary works of various genres with poems, novels, and short stories paving new ways for the understanding of humanistic issues of the world. Divakaruni has attracted readers' attention with her poetry and fiction dealing with the problems of Indian emigrants. The paper is a study on *The Palace of illusions*, a fantasy novel centered on the characters of the Mahabaratha. This charming and compelling novel won the readership with its magical realism and omnipresent sensuality. The characters of Divakurani's work cross the boundaries between dream and reality and question their own understanding of life and reason. This paper presents a brief introduction to Magic Realism and the theme of magic realism in Divakaruni's *The Palace of Illusions*. It shows how Divakaruni employed magic realism as a literary device in her novel.

Key words -

Fantasy, myth, realism, magical reality, postmodernism, Mahabharata

Magic realism is a literary genre in which the real world has elements of fantasy or magic. "Magischer realismus" is a German term that translates to magic realism. This term was used by Franz Roh, an art critic of Germany. He used this term to show the existence of magical objects or elements in the realistic world when one observes keenly. It was first used in the year 1925 and later it was translated into Spanish in the year 1927. According to Roh "Magic Realism is not a synthesis of logic and belief, but a way to reveal the mystery contained in everyday reality." Realism and magic are balanced in magical realism with the help of stories, myths, and fables from various cultures. The narration technique is different when compared with other genres. It has supernaturalistic elements, uncertain truths, myths, exaggeration, and time. Magical Realism is an aesthetic style in which to understand reality better the mystical elements are introduced into the realistic environment. It has true incidents of history, cultural beliefs, social norms, tradition, and philosophy embedded

COVID-19 PANDEMIC AND ITS ECONOMIC IMPACT ON SELECTED HOUSEHOLD

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Covid-19 one of the great pandemic faced after decades by the world is now being a great problem to the universe as a whole as it affects economic, social and life of millions of humans in the globe. Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness. The best way to prevent and slow down transmission is being well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol based rub frequently and not touching your face. (WHO 2020).

As this deadly disease started to spread across the countries the Indian government decided for full lock down this was not a planned one, which affected so many household as it resulted in sudden stoppage to their work, studies, income. The economic distress in India caused by the lockdown is dire. Nearly 84% of Indian households are seeing decreases in income since the lockdown began, according to a recent study by experts at the University of Pennsylvania, University of Chicago and the Mumbai-based Centre for Monitoring the Indian Economy (CMIE), titled "How Are Indian Households Coping Under the Covid-19 Lockdown? 8 Key Findings." The study found a "sharp and broad negative impact on household income" as the pandemic diminished their staying capacity. Nearly a third of all households will not be able to survive beyond a week without additional assistance, it stated. That harsh statistic finds corroboration in the unemployment rate, which had crossed 27% in early May, up nearly four-fold from levels in January-February, according to CMIE data. The jobless rate has since dropped to less than 24%. (Wharton 2020).

The Centre for Monitoring Indian Economy (CMIE Report 2020) reported unemployment levels of 24-27% in April and May, up from 8-9%, before the lockdown started. Even people who have not lost their jobs are reporting income losses due to pay cuts and declining business profits. In a nationally representative survey of nearly 6000 households in May 2020, 84% of households reported decreases in income since the lockdown.

With this background the current study has tried to identify the economic effect caused by covid-19 pandemic on the selected households in Coimbatore district.

Review of literature

Report of South Asia IFPRI (2020) has stated that an episode of job loss leads to an immediate reduction in household consumption expenditure by 6.2%, but the decline is twice as large in urban areas (11.1% vs 5.1%). Similarly, a 1% decline in family income leads to an instantaneous 0.05% and 0.29% decline in consumption expenditure for rural and urban households respectively. To put this in perspective, a similar analysis undertaken by us using previous CPHS data shows that demonetization had a similar impact; consumption of urban households declined (almost 4%) more than rural households after the demonetization in November 2016.

According to Carlsson-Szlezak et al. (2020a) and Carlsson-Szlezak et al. (2020b), there are three main transmission channels. The first is the direct impact, which is related to the reduced consumption of goods and services. Prolonged lengths of the pandemic and the social distancing measures might reduce consumer confidence by keeping consumers at home, wary of discretionary spending and pessimistic about the long-term economic prospects. The second one is the indirect impact working through financial market shocks and their effects on the real economy. Household wealth will likely fall, savings will increase, and consumption spending will decrease further. The third consists of supply-side disruptions; as COVID-19 keeps production halted, it will negatively

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 4, Issue 2, April 2021
Impact Factor: 4.819

Notes on Bipolar Interval Valued Intuitionistic Fuzzy Topological Space

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Abstract: *In this paper we have introduced Bipolar Interval Valued Intuitionistic Fuzzy Point, Bipolar Interval Valued Intuitionistic Fuzzy Neighbourhood,Bipolar Interval Valued Intuitionistic Fuzzy Interior and Bipolar Interval Valued Intuitionistic Fuzzy Closurein Bipolar Interval Valued Intuitionistic Fuzzy topological space and have verifiedsome of its properties.*

Keyword: Bipolar Interval Valued Intuitionistic Fuzzy Topological, Bipolar Interval Valued Intuitionistic Fuzzy Set, Bipolar Interval Valued Intuitionistic Fuzzy Open Set, Interior of Bipolar Interval Valued Intuitionistic Fuzzy Topology, Bipolar Interval Valued Intuitionistic Fuzzy Closed Set, Closure of Bipolar Interval Valued Intuitionistic Fuzzy Topology

I. INTRODUCTION

A bipolar Interval Valued Intuitionistic fuzzy topology τ on X is defined as a collection that contains the null bipolar null Interval Valued Intuitionistic fuzzy set, absolute bipolar Interval Valued Intuitionistic fuzzy set, finite intersection and arbitrary union of Bipolar Interval Valued Intuitionistic fuzzy sets[2].SinceBipolar Fuzzy Topology is a special case of Fuzzy Topology, it is quite logical as Fuzzy Topology and it induces a special type of fuzzy bitopology[33].

1.1 Bipolar Interval Valued Intuitionistic Fuzzy Point

Let (X,τ) be a topological space of BIVIF sets

Let $((\alpha_1,\beta_1),(\alpha_2,\beta_2)) \in (0,1)$ & $((\vartheta_1,\delta_1),(\vartheta_2,\delta_2)) \in (-1,0)$ such that

$$\alpha_1+\beta_1 \le 1$$
$$\alpha_2+\beta_2 \le 1$$
$$\vartheta_1+\delta_1 \ge -1$$
and
$$\vartheta_2+\delta_2 \ge -1$$

A Bipolar Interval Valued Intuitionistic Fuzzy Point BIVIFP P^x of is a bipolar interval valued intuitionistic fuzzy set of X is defined by

$$P^x = \left\{\left\langle x,\left[\mu_L^p(x),\mu_U^p(x)\right],\left[\mu_L^N(x),\mu_U^N(x)\right],\left[\gamma_L^p(x),\gamma_U^p(x)\right],\left[\gamma_L^N(x),\gamma_U^N(x)\right]\right\rangle \mid x \in X\right\}$$

We have

$$\mu_L^p(x) = \begin{cases}\alpha_1 & if \quad y = x\\ 0 & if \quad y \ne x\end{cases}$$

International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211
Volume 9, Issue 5, May -2021, Impact Factor: 7.429, Available online at: www.ijaresm.com

Bipolar Interval Valued Intuitionistic Fuzzy Generalized Closed Set

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ABSTRACT

In this paper we have introduced Bipolar Interval Valued Intuitionistic Fuzzy Generalized Closed Set as an extension of the Bipolar Interval Valued Intuitionistic Fuzzy Closed Set. Using the properties of the Bipolar Interval Valued Intuitionistic Fuzzy Subsets we have verified some prepositions of Bipolar Interval Valued Intuitionistic Fuzzy Subset of a Bipolar Interval Valued Intuitionistic Fuzzy Topological space.

Keyword: Bipolar Interval Valued Intuitionistic Fuzzy Topological Space, Bipolar Interval Valued Intuitionistic Fuzzy Set, Bipolar Interval Valued Intuitionistic Fuzzy Open Set , Bipolar Interval Valued Intuitionistic Fuzzy Closed Set, Interior of Bipolar Interval Valued Intuitionistic Fuzzy Topology, Closure of Bipolar Interval Valued Intuitionistic Fuzzy Topology.

INTRODUCTION

In general the decision making made by humans are most of the times based on double-sided or based on bipolar thinking[22].In 2015,D.Ezhilmaran and K.Sankar have introduced the concept of bipolar information in Intuitionistic Fuzzy Set and named it as Bipolar Intuitionistic Fuzzy Set[11]. Here the concept of Interval Valued sets in Bipolar Intuitionistic fuzzy set was introduced with the condition that the sum of supremum of the positive membership and positive non-membership function is less than or equal to one and the sum of infimum of the negative membership and negative non-membership function is greater than or equal to minus one[22].

Different type of closed sets in Bipolar Interval Valued Intuitionistic Fuzzy Topology:

Bipolar Interval Valued Intuitionistic Fuzzy Regular Closed Set:

A Bipolar Interval Valued Intuitionistic Fuzzy set A of a topological space (X,τ) is said to be Bipolar Interval Valued Intuitionistic Fuzzy Regular Closed set (BIVIFRCS) if A=BIVIFcl(BIVIFint(A)).

Example:

Let $G=\{\langle x,[0.1,0.3],[-0.4,-0.2],[0.2,0.5],[-0.5,-0.3]\rangle \mid x\in X\}$ be a Bipolar Interval Valued Intuitionistic Fuzzy set of a Bipolar Interval Valued Intuitionistic Fuzzy Topological Space $\tau=\{0\sim,1\sim,G\}$ and let $A=\{\langle x,[0.2,0.25],[-0.3,-0.25],[0.3,0.4],[-0.4,-0.35]\rangle \mid x\in X\}$ be a Bipolar Interval Valued Intuitionistic Fuzzy set of a Bipolar Interval Valued Intuitionistic Fuzzy Topological Space (X,τ) then the Bipolar Interval Valued Intuitionistic Fuzzy interior of the bipolar interval valued intuitionistic fuzzy set A of X is defined by

$$BIVIF\ \text{int}(A)=\{\langle x,[0.1,0.3],[-0.4,-0.2],[0.2,0.5],[-0.5,-0.3]\rangle \mid x\in X\}\rightarrow(1)$$

then the Bipolar Interval Valued Intuitionistic Fuzzy Closure of (1) is defined as

IJARSCT

ISSN (Online) 2581-9429

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 5, Issue 2, May 2021

IJARSCT
Impact Factor: 4.819

Alpha Dot-Interior and Alpha Dot-Closure in Topological Spaces

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Abstract: In this paper, some basic properties and applications of $\dot{\alpha}$ -neighbourhoods, $\dot{\alpha}$ -derived sets, $\dot{\alpha}$ -interiorand $\dot{\alpha}$ -closure are introduced and discussed by using $\dot{\alpha}$ -closed sets in topological spaces.

Keywords: $\dot{\alpha}$ -closed set, $\dot{\alpha}$ -neighbourhoods, $\dot{\alpha}$ -derived sets, $\dot{\alpha}$ -interior and $\dot{\alpha}$ -closure.

I. INTRODUCTION

R. Rajendiran and M. Thamilselvan [1] studied and investigated properties of g*s* Closure, g*s* Interior and g*s* Derived Sets in Topological Spaces. S. Chandrasekar, M. Sathyabama and A. Atkinswestley [2] introduced $g^{\#}$b-interior and $g^{\#}$b-closure in topological spaces. In this paper, some basic properties and applications of $\dot{\alpha}$ -neighbourhoods, $\dot{\alpha}$ -derived sets, $\dot{\alpha}$ -interior and $\dot{\alpha}$ -closure of $\dot{\alpha}$ -closed sets are introduced and discussed in topological spaces.

II. PRELIMINARIES

Throughout this paper (X, τ) (or simply X) represents topological spaces. For a subset A of X, interior of A, closure of A and complement of A are denoted by int(A), cl(A) and A^c respectively.

Definition 2.1:

A subset A of X is said to be

1. α-closed set [3] if cl(int(cl(A)))⊆A.
2. αg-closed set [3] if αcl(A)⊆U whenever A⊆U and U is open in X.
3. αgg-closed set [4] if cl(A)⊆U whenever A⊆U and U is αg-open in X.
4. 4) $\dot{\alpha}$ -closed set [5] if αcl(A)⊆U whenever A⊆U and U is αgg-open in X.

The complement of the above mentioned closed sets are their respective open sets.

III. $\dot{\alpha}$ -NEIGHBOURHOODS

Definition 3.1:

Let (X,τ) be a topological space and let $x \in X$. A subset N of X is said to be an $\dot{\alpha}$ -neighbourhood of x iff there exist an $\dot{\alpha}$ -open set G such that $x \in G \subset N$.

Definition 3.2:

Let (X,τ) be a topological space and A be a subset of X. A subset N of X is said to be an $\dot{\alpha}$ -neighbourhood of A of X iff there exists an $\dot{\alpha}$ -open set G such that $A \subset G \subset N$.

DOI: 10.48175/IJARSCT-1263

On Chromatic Zagreb Indices of Some Cycle Related Graphs

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Abstract

Real numbers that are invariant under graph isomorphism are known as topological indices. In recent literature, the concept of chromatic topological indices has been described and studied as an extended coloring version of some Zagreb indices. In this article these new indices have been created for certain types of cycle related graphs.

Keywords: Double fan graph, Fan graph, Friendship graph, Zagreb Indices.

1. Introduction

Chemical graph theory has a wide range of applications in today's world, particularly in the pharmaceutical industry. It is primarily concerned with mathematical modelling of chemical phenomena and acquiring useful insights into chemical behaviour. One of the essential conceptions of molecular descriptors in chemical graph theory is a topological index of a graph *G*, which is a real number retained under isomorphism. The chromatic topological indices of a graph *G* was recently coined in [5] to identify a novel coloring version of these indices that encompasses both proper colouring and topological indices. The vertex degrees are swapped with minimal coloring in this case, however the additional coloring conditions of proper coloring are maintained. The graphs in this work are finite, non-trivial, undirected, linked and free of loops and multiple edges. See [2,8,9,10] for notation and terminology not expressly described here.

Analogous to the definitions of Zagreb indices of graphs (see [1,3,4,7]), the notions of different chromatic Zagreb indices have been introduced in [5] as follows:

Definition1.1

[5] Let $C = \{c_1, c_2, ..., c_l\}$ be the proper coloring of any graph G .Since $|C| = l$, G has $l!$ minimum parameter colorings. Denote these colorings as $\phi_t(G), 1 \le t \le l!$.

Let $\phi(v_i) = c_s$, $1 \le i \le n, 1 \le s \le l$ .Then for $1 \le t \le l!$,

- The *first chromatic Zagreb index* of *G* is defined as:

$$M_1^{\phi_t}(G) = \sum_{i=1}^{n} c(v_i)^2$$

$$= \sum_{j=1}^{l} \theta(c_j) \cdot j^2, c_j \in C$$

- The *second chromatic Zagreb index* of *G* is defined as:

3.8.2 — Paper Publication — (3).

Inorganic Chemistry Communications 129 (2021) 108528

Contents lists available at ScienceDirect

Inorganic Chemistry Communications

journal homepage: www.elsevier.com/locate/inoche

Short communication

Enhancing the electrochemical performance by structural evolution in O3-$NaFe_{1-x}Mg_xO_2$ cathodes for sodium ion batteries

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ARTICLE INFO

Keywords:
Na ion
O3- phase
Battery function
Discharged state

ABSTRACT

The structural evolution of electrode materials directly influences the performance of sodium-ion batteries. In the present report we have chosen O3- $NaFe_{1-x}Mg_xO_2$ system in which different ratios (X = 0.1, 0.2, 0.4, 0.5) for investing through hydrothermal synthesis. The prepared material was confirmed by Rietveld refinement method and morphology was confirmed by FESEM and HRTEM analysis. The prepared samples were fabricated into coin cells and electrochemical test was performed and the migration of Fe ions into Na layer which results capacity fade during cycling. In the present work the active participation of Mg ions at higher operating voltages the stabilization of Fe ions take place which results in migration of Fe ions into Na layer which was greatly reduced. Among different ratios, $NaFe_{0.5}Mg_{0.5}O_2$ delivers the higher reversible capacity of 158 mAh g^{-1} at 50 mA/g with the capacity retention of 85–90% after 100 cycles. This performance shows that the structural changes in the cathodes allow to design high cathodes for Na ion batteries in future.

1. Introduction

In 2020 s, research interests in rechargeable Na(-ion) batteries operating at room temperature have been renewed to be a promising energy storage large – scale device [1–3]. Although sodium has a substantial advantage compared to lithium in terms of material abundance, in comparison to lithium system. Considering battery voltage and atomic mass, the energy density available is not substantially desirable (electrochemical equivalent). Thus, sodium insertion material studies for battery applications in the last three decades have exhausted. Research interests in sodium insertion material have now been totally redeveloped. After 2010, materials researchers investigated new materials for battery insertion of sodium extensively [4–13]. Compared to state of the art rechargeable lithium – ion batteries, the energy density available in Na-ion batteries is low. Nevertheless, acceleration of the development of sodium-based energy storage devices by increasing research activity in sodium inserting material. Layered materials Na_xMeO_2 (Me = metal(s)) have been extensively studied as electrode battery materials. Based on the abundance of material in the earth's crust, the layer (Alpha type) $NaFeO_2$, the layer structure of which, after the notation of Delmas, is also classified as the layer structure of O_3 [14–16], is of the greatest importance from a gravimetric and volumetric perspective as positive electrodes for the Na batteries. Indeed the $NaFeO_2$ layers are electrochemically active higher as an Na intercalation as mentioned by Okada and co-workers [17], while the $LiFeO_2$ layered lithium counterpart is considered to be electrochemically inactive [18]. A Na//$NaFeO_2$ cell showed flat voltage profile with 3.3 V vs. Fe^{3+}/Fe^{4+} redox in combination with Na metal.

Recently, the layered $NaFeO_2$ system is revisited and the electrode performance is systematically examined by changing in the cut off voltage in the Na cells [19]. When the cut-off voltage in the sodium cell is restricted to 3.4 V, $NaFeO_2$ sustain relatively good capacity retention with reversible energy of 80 $mAhg^{-1}$. However the reversibility of the electrode is greatly affected by an increase above 3.5 V in higher voltage. The analysis of ex-situ X-ray diffraction (XRD) revealed that there was a transformation of an irreversible structure, presumably associated with

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https://doi.org/10.1016/j.inoche.2021.108528
Received 30 December 2020; Received in revised form 17 February 2021; Accepted 21 February 2021
Available online 4 March 2021

Inorganic Chemistry Communications 125 (2021) 108459

Contents lists available at ScienceDirect

Inorganic Chemistry Communications

journal homepage: www.elsevier.com/locate/inoche

Short communication

Influence of aloe-vera gel mediated CuO coated $LiNiPO_4$ cathode material in rechargeable battery applications

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ARTICLE INFO

Keywords:
Aloe vera gel mediated CuO coated $LiNiPO_4$
Lithium ion batteries
Water mediated CuO coated $LiNiPO_4$
Green synthesis method

ABSTRACT

In this work, we report the synthesis and electrochemical performance of CuO synthesized in aloe-vera gel medium coated $LiNiPO_4$ in first time also, we compared the performance of CuO prepared in water medium coated $LiNiPO_4$. The particle size of pure $LiNiPO_4$ is 5.2 μm and the particle size of CuO prepared in water medium coated $LiNiPO_4$ is 2.1 μm. Also, the particle size of CuO prepared in aloe-vera gel medium coated $LiNiPO_4$ is 1.7 μm, which is analysed by using particle size analysis. As we expected, aloe-vera gel mediated CuO effectively reduces the particle size of $LiNiPO_4$ also it exhibits the good electrochemical performance which is examined with the help of charge/discharge analysis. Green synthesis is an operative method to prepare surface coating materials for cathode materials of lithium ion batteries.

1. Introduction

Lithium ion batteries (LIB) are playing a dominating role in the enrichment of electronic devices and hybrid electric vehicles applications on the other hand, science community focusing their attention towards olivine type cathode materials in the enhancement of LIB owing to their exceptional characteristics of high discharge capacity and highly safety also, they are searching high voltage and cost efficient cathode materials in the improvement of LIB. In the group of olivine phosphates, $LiFePO_4$ has already commercialized and effectively optimized but, this is not sufficient to satisfy the demand of LIB devices owing to its low operating voltage of 3.5 V. It is essential to progress the high voltage cathode materials in the development of LIB devices which is the preferable substitution for non-renewable energy sources. In the kinds of olivine phosphates, $LiNiPO_4$ identified as a high voltage (5.2 V) cathode material which can contribute in the progress of LIB devices. Moreover, $LiNiPO_4$ exhibits a flat high potential and good theoretical capacity of 167 mAh/g [1–7]. Despite the virtuous potential of $LiNiPO_4$, only countable works are done on $LiNiPO_4$ due to its low electrochemical performance in nature. Moreover, it is essential to strengthen the efficiency of $LiNiPO_4$ in terms of (i) reduction of particle size (ii) avoid the loss of active materials when cycling. Based on the results of various researchers, surface modification route could improve the performance of $LiNiPO_4$ furthermore involves in the reduction of particle size and shields the active material from dissolution. Ahmet Ornek et al. [8] suggested that surface modified $LiNiPO_4$ with cobalt oxide enhance the both electrical and electrochemical performance owing to its involvement in reduction of volumetric strain and stresses when Li^+ insertion/extraction. Devaraju et al. [9] coated gold material on $LiNiPO_4$ surface which is considered as a significant improvement in surface modification technology on $LiNiPO_4$ and they reported surface modification with Au on $LiNiPO_4$ decreases the contact area between electrolyte and active material which in turn increases the electrochemical performance of $LiNiPO_4$. Various coating materials are analysed to improve the performance of cathode materials of LIB among them, CuO coating adopting some interesting characteristics of readily stored, low cost and high theoretical capacity which are suggesting by following researchers. Hao et al. [10] prepared CuO coated $LiCoO_2$, and they achieved the improved electrochemical performance compared with pure sample due to the action of CuO which prevents the active material from polarisation. Cui

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https://doi.org/10.1016/j.inoche.2021.108459
Received 1 October 2020; Received in revised form 6 January 2021; Accepted 7 January 2021
Available online 11 January 2021

Asian Journal of Chemistry; Vol. 33, No. 8 (2021), 1919-1922

ASIAN JOURNAL OF CHEMISTRY

https://doi.org/10.14233/ajchem.2021.23330

Electrochemical Degradation of Reactive Red 195 from its Aqueous Solution using $RuO_2/IrO_2/TaO_2$ Coated Titanium Electrodes

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Received: 23 May 2021; *Accepted*: 30 June 2021; *Published online*: 26 July 2021; AJC-20446

The electrochemical oxidation of reactive red 195 from aqueous solution was carried out using titanium electrode in an electrochemical cell reactor. The effect of different operating parameters such as dye concentration, current density, electrolyte concentration, pH and stirring speed were investigated. The UV-visible spectroscopy confirmed the removal and degradation of reactive red 195. Three different supporting electrolytes such as NaCl, $NaNO_3$ and Na_2SO_4 were used for electrolysis and NaCl were found to be effective for the removal of reactive red 195 dye from its aqueous solution. The maximum percentage of colour removal was 94%, under the optimum operating conditions with electrolyte (NaCl) concentration 0.075 M, current density 25 mA/cm^2, pH 5 and stirring speed of 250 rpm. This method was found to be relatively more effective to the conventional treatment techniques.

Keywords: Electrochemical oxidation, Reactive Red 195, Titanium electrodes.

INTRODUCTION

More than 10,000 types of dyes are commercially available and more than 7×10^5 tons of dyes are produced every year, which can be classified as anionic and cationic based on their structure [1]. Textile effluents containing dyes, when released into water bodies, considerably affect the photosynthetic activity in water because of reduced light penetration. Even <1 ppm dye concentration in effluents can affect light penetration in water bodies. Furthermore, these dyes, along with other contaminants, subsequently deplete dissolved oxygen concentration and thus alter the aquatic ecosystem [2]. Generally, dyes are derived from petroleum products that consist of an unsaturated chromophore molecule group, which absorb light present in the visible region of the electromagnetic spectrum (400-750 nm). Most of the dyes are recalcitrant molecules that chemically lock the colour onto fibres or other materials and resist decolourization on exposure to soap, water, light or other mild chemical agents [3]. The textile industry majorly affects the environment through the release of untreated sewages into water bodies [4]. The effluents with high dye concentration can change biological cycles when released into the aquatic environments through alteration of photosynthesis and water oxygenation and their high potential to harm living organisms and cause mutations in them [5].

Several physical, chemical and biological treatment methods are commonly used for removal of dyes from textile effluents. Presently, an efficient and cost-effective technique is urgently required for wastewater treatment. Currently, advanced oxidation process and electrochemical process are used to treat drinking water and industrial effluents. Electrocatalytic oxidation can efficiently remove organic and inorganic pollutants from industrial wastewaters [6]. Various physico-chemical processes are used to treat wastewater effluents, such as adsorption, coagulation/flocculation, precipitation, activated carbon, ozonation, membrane filtration and ion exchange. However, most of these treatments are expensive and generate pollution because of the many chemicals used in the processes [7].

Recently, electrocatalytic oxidation has received increasing attention in environment-related studies because it can

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 8357 - 8374
Received 05 March 2021; Accepted 01 April 2021.

Analysis of Quantity and Quality Features of Virgin Coconut Oil Produced in Selected Coconut varieties under Fresh-Dry Method

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ABSTRACT: In this research study, Virgin Coconut Oil (VCO) was produced in four selected varieties of coconuts like West Coast Tall, Arasampatti Tall, Deejay Vishwas and Tiptur Tall. The Present method was optimized with three common parameters especially temperature viz., 30±1ºC, 35±1ºC, 40±1º C, 45±1ºC, Drying intervals viz., 24hrs, 36hrs, 48 hrs, 60hrs and fruit maturity like 10, 11, 12 and 13 month old coconuts was taken to study the yielding efficiency of VCO from four varieties . In this quantity analysis with temperature variable, the maximum yielding efficiency 95.33% was obtained in WCT Coconuts at 45º C. The Drying interval analysis showed, the maximum yield efficiency that is 93.06% with 48 hrs drying. The fruit maturity level analysis showed the same maximum value of 93.06% as in the drying interval analysis. The coconut varieties are taken in this research study, showed different yield composition of fatty acid profile especially the lauric acid percentage, which was registered maximum that is 51.20% at "WCT Coconuts" and in rest of varieties such as AT, DJ and TT Coconuts were noted as 50.10%, 49.23% and 48.55% respectively.

Keywords: VCO, Temperature, Drying Interval, Fruit maturity, yielding efficiency.

1. INTRODUCTION

Coconut is cultivated largely in Philippines, Indonesia, India, SriLanka, Papua New Guinea, Thailand, Malaysia and Fiji (1). India occupies a leading position of coconut production in the world. It have 1.94 million ha in 19 states and including 3 Union Territories covers 15730 million nuts production with an average productivity of 8303 nuts per ha or 44.27 nuts/palm/year (2).It is for the most part grown in the southern part of India (3).Southern states particularly Tamil Nadu, Kerala, Karnataka and Andhra Pradesh occupies more than 90% area for coconut production (4).

VCO is defined as "Oil, one which is produced through with or without the use of heat and without undergoing chemical refining (5). The fractions of coconut oil are utilized as drugs because; it contains many key components like vitamin A, E, anti-cancer polyphenols (ferulic acid, catechin, caffeic acid) and Phytosterols (6). Nearly 50% of the fatty acid in VCO is in the form of lauric acid, which is act as an antimicrobial substance against fungi, bacteria and viruses. Additionally, the fatty acid profile of coconut oil shares the similar characteristic of breast milk (7 & 8).

Based on their moisture content coconuts are classified as wet and dry coconuts (9). Commonly VCO produced in both wet and dry methods. In dry method, the grated kernel was dried under controlled temperature up to complete moisture removed. Finally oil is extracted through grinding process (10).Wet methods are commonly classified into chilling-thawing, fermentation, enzymatic and pH methods or the combinations of the above (11). The existing wet methodology

Res. Jr. of Agril. Sci. (May-Jun 2021) 12(3): 1055–1066
www.rjas.org

Full Length Research Article

Comparative Study on Virgin Coconut Oil Production from two Coconut Varieties under Fermentation Method

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Received: 22 Apr 2021 | Revised accepted: 01 Jun 2021 | Published online: 16 Jun 2021

A B S T R A C T

In this study, Virgin Coconut Oil (VCO) was produced from West Coast Tall (WCT) and Deejay Coconuts (DJ) under induced fermentative methodology by employing *Saccharomyces cerevisiae* and *Lactobacillus plantarum* (9511) strains. This production methodology was optimized with temperature, PH, Inoculum concentration and Fermentation end time. The VCO yielding efficiencies were compared from two strains. Among the four parameters in the study, the maximum yielding efficiencies were obtained from WCT coconuts employing *L. plantarum (*9511) at 40±1ºC temperature, 5.5±0.1 PH, 7% (w/v) Inoculum concentration and 60hrs of fermentation end time. In conclusion, it has been observed that proximate analysis of VCO showed within the standard limits and also WCT Coconuts in combination with *L. plantarum* offered higher yield and better fatty acid proportion than the DJ Coconuts.

***Key words*:** VCO, Yielding efficiency, Parameters, *L. plantarum* (9511), *S. cerevisiae,* WCT, DJ

Coconut is considered as a "*Kalpavriksha*" or "the tree of heaven" which means "the tree that gives all that is essential for living", in our common life. It is chiefly cultivated in Philippines, Indonesia, India, Sri Lanka, Papua New Guinea, Thailand, Malaysia and Fiji [1]. There are more than 50 value-added products are acquired from coconut palm are utilized in domestic purposes as well as importing quality products [2]. Coconut oil is one of the edible oil commonly extracted from the matured coconut kernels for food and Industrial preparations. It is a primary source of energy, in tropical countries like India, Sri Lanka, Philippines and Indonesia [3]. The oil is utilized for various health related concerns including skin care, hair care, stress relief, weight loss, body cool, cholesterol level maintenance, immunomodulatory effects and cardiovascular uses [4]. Based on the moisture content, coconuts are classified as wet and dry coconuts [5]. Wet matured coconuts are used for the extraction of VCO [6]. Virgin Coconut Oil was defined as, an oil manufactured through with or without heat and chemical refining [7]. VCO from wet preparation has more remedial potential to reduce the diseases intensity like Alzheimer's, Autism, Dementia and AIDS [8]. VCO is commonly produced from both wet and dry methodologies. In dry method, kernel was heating under controlled conditions to remove the moisture as well as for the prevention of microbial contamination and finally oil is recovered through grinding process [9]. Wet methods are commonly classified into chilling and thawing, fermentation, enzymatic and pH method or any of these in combination [10]. Among the above methods, VCO Produced from both Fermentation and Chilling method had higher antioxidant potency than Refined Bleached Deodorized (RBD) coconut oil [11]. This potential is helps to fight against several dreadful diseases of human beings.

As per the Codex "Virgin Oils", are defined as oils which are suitable for human consumption [12]. It provides an alternative inexpensive source of energy to neurons of humans in the case of Alzheimer's disease [13]. Also, various fractions of coconut oil are used as drugs [14]. Almost 50% of the fatty acid in VCO is available in the form of lauric acid, which has applied as wide spectrum of antimicrobial substances against fungi, bacteria and viruses. Moreover, the fatty acid profile of coconut oil shares the similar characteristic nature of breast milk [15-16]. A Normal coconut milk have innate microbial flora which is involved in fermentation to produce VCO. Commonly VCO from natural fermentation showed poor in quality due to the entry of unwanted microbes through coconut milk, which provides rich attractive sources for the microbes [17]. Also, natural fermentation is not enough to destabilize the fat protein emulsion. Since, it could be overcome by induced fermentation with probiotic microorganism like *Lactobacillus plantarum* which is actively involves in VCO production [18-19]. A comparative study showed that, both quantity and quality of coconut oil was high with *L. plantarum* induced fermentation [20]. A prior study on VCO production with commercial yeast was focused

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The Indian Journal of Nutrition and Dietetics
ISSN: 0022-3174; eISSN: 2348-621X
www.ijndonline.org
DOI:10.21048/IJND.2021.58.S1.27533

Quality Evaluation of Value Added Cookies

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Abstract

Food supplementation is one of the most effective methods of promoting health and preventing or combating health problems, to reach some or all population. Supplementary foods were formulated on the basis of low cost, locally available foods, familiar to home maker and easy for preparation. Hence the present study was initiated to develop an iron and calcium rich health mix cookies. Cookies were prepared using the health mix which scored highest in terms of sensory evaluation and also had high level of calcium content. Sensory evaluation, nutrient content and calculation of cost effectiveness were done. The physical characteristics like weight, width, diameter, thickness and spread factor were determined. The physical characteristics were measured. The mean values of the standard and formulated cookies were different in the proximate principle composition and mineral content. The iron, calcium, magnesium and vitamin B-6 levels of formulated cookies were higher than the standard cookies. It was also noted that the moisture content of the standard cookies was 5.15 per cent and that of formulated cookies was 2.084 per cent. The moisture content of the formulated cookies was lower than the standard cookies as the sprouted ragi enhanced the reduction in moisture content in the flour. The protein content of the formulated cookies was 13 g which was slightly higher than standard cookies (10.2 g). This was attributed to the incorporation of high protein ingredients like soya, horse gram and roasted Bengal gram dhal in the formulated cookies. The fat content of the formulated cookies (20.0 g) was lower than the standard cookies with fat content of 35 g. The carbohydrate content of the formulated cookies (22.8 g) was much lower than the standard cookies (72 g). This is due to the incorporation of pulses, oil seeds which replaced some of the carbohydrate content in the cookies. From the overall acceptability, it was clear that only a slight difference was noted between the standard and formulated cookies.

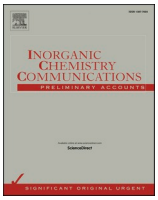
Keywords: *Food supplementation, cookies, calcium, health mix, sensory evaluation, physical characteristics*

Inorganic Chemistry Communications 126 (2021) 108475

Contents lists available at ScienceDirect

Inorganic Chemistry Communications

journal homepage: www.elsevier.com/locate/inoche



Short communication

Pt-free and efficient counter electrode with nanostructured $CoNi_2S_4$/rGO for dye-sensitized solar cells

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ARTICLE INFO

Keywords:
$CoNi_2S_4$/rGO
Counter electrode
Charge-transfer process
Electrocatalysis
DSSCs

ABSTRACT

Solar cells of the third generation aim to reduce costs and/or boost the efficiency of current solar cells. The goal of this paper is to systematically research a cobalt nickel sulfide/reduced graphene oxide ($CoNi_2S_4$/rGO) nanocomposite sandwich type dye sensitized solar cell (DSSC) prototype as a counter electrode synthesized by a simple one-step hydrothermal process. The structural and morphological characterization of the nanocomposite reveals that cubic structure with spherical shaped nanoparticles (25–30 nm), which is uniformly decorated on the rGO sheets. When used as a counter electrode, the optimized $CoNi_2S_4$/rGO nanohybrid film delivers a high photo-conversion efficiency of 10.21%, which is higher than that the DSSC manufactured as counter electrode with Pt (6.45%) and even better than that with pristine $CoNi_2S_4$ (3.45%). Cyclic voltammetry, Tafel plot and electrochemical impedance spectroscopy show that the as-synthesized $CoNi_2S_4$/rGO nanohybrid counter electrode exhibits an excellent electrocatalytic property than compared with pure $CoNi_2S_4$ counter electrode (CE). This research also offers some clues to the potential growth and rational design of $CoNi_2S_4$/rGO nanohybrid counter electrode for advance energy applications.

1. Introduction

In the last two cades, dye sensitized solar cells have gained considerable attention as one of the most excellent characteristics compared with silicon-based based solar cells, which is promising third generation solar cells, cost effective, relatively high performance, versatility and easy production of cells [1–3]. In the field of DSSCs, Gratzel opened a whole new age and achieved an unparalleled effectiveness over 12% [4]. This value is still lower than that of solar cells based on crystalline silicon. Contemporary studies in the development of DSSCs focuses primarily on improving performance and cost reduction. The CE stuff for effective performance of DSSC, desirable properties should be present, such as (i) high electrocatalytic properties, (ii) high electrical strength, (ii) conductivity for improved transport of charges, (iii) high surface area, (iv) strong adhesion to create more catalytic active sites and (v) for long-term use, chemical stability. In addition, platinum (Pt) may undergo corrosion electrolyte, thereby impacting the long-standing stability of the unit performance. Therefore, extremely desirable to replace the Pt with the stable CE free of Pt, thus reducing the total cost of the DSSCs. As far as the cost-effective alternates to Pt CE are concerned, a number of literatures has suggested various materials such as, carbonaceous based materials [5], nitride [6], polymers [7], transition metal sulfides, etc., [8]. In transition metal sulfides, various nonstoichiometrically produced metal sulfides, such as NiS [9], CoS [10], $Cu_{2-x}S$ [11] have also been studied as a CE in DSSCs.

Recently, the ternary nickel–cobalt sulphides were highly investigated because of their greater conductivity and high stability than compared with binary cobalt sulphides and nickel sulphides [12–17]. Comparing with their binary, studies of the ternary compounds are relatively more meaningful as they could exhibit not only more complex functions but also their properties are readily tunable by changing the ratio of the component elements [18,19]. Ternary compounds relatively more useful as they can not only do they represent more complex functions, but their performance also easily tuned by adjusting the proportion of the element components. Moreover, ternary nickel–cobalt sulphides can give richer quantities of redox reactions than their corresponding single-metal sulfides due to the separate valence states in the contributions of both nickel and cobalt. Sulfides also have relatively

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https://doi.org/10.1016/j.inoche.2021.108475
Received 4 November 2020; Received in revised form 15 January 2021; Accepted 16 January 2021
Available online 21 January 2021

International Journal of Advanced Research in Commerce, Management & Social Science (IJARCMSS)
ISSN : 2581-7930, Impact Factor : 5.880 , Volume 04, No. 02(II), April - June, 2021, pp 229-232

SECURITY ISSUES FACED BY RURAL POPULATION ON PAYMENT BANKS WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT

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Dr. R. Hamsalakshmi**

ABSTRACT

A payments bank is like any other bank, but in service on a minor level without involving any credit risk. Simply, it can perform mainly banking operations but can't advance loans or issue credit cards. The primary aim of payments bank is to enlarge the extend of imbursement and financial services to firm, low-income households, migrant labor force in protected technology-driven atmosphere. But in payment banks services there are some security issues namely Sophisticated Malware, Poor Patching, Application/Middleware Vulnerabilities and Service Providers. Normally people are utilizing electronic services for saving their time, difficulties, efforts and cost cutting. Due to technological progress it's possible without any delay. But whenever people try to use those services, they deeply exploited by different ways security issues. In this study for analysis purpose, primary data and secondary data has been used. For collecting primary data, questionnaire have been prepared by Google form in structured manner and collected from 146 respondents. And secondary data have been collected from various books, magazines, journals, websites and reports. In this research Likert scale analysis, Chi – square and ANOVA. Payment bank should pay attention on security for transactions in payment banks. Then only thee rural population will use payment banks confidently and also they will feel the services of payments are reliable one and accept it as essential one.

Keywords: *Payments Bank, ANOVA, Chi – Square, Likert Scale, Primary Data.*

Introduction

A payments bank is like any other bank, but in service on a minor level without involving any credit risk. Simply, it can perform mainly banking operations but can't advance loans or issue credit cards. It can allow demand deposits, put forward payment services, mobile payments or money transmit or acquires and other banking services like ATM / debit cards, net banking and third party fund transfers.

The primary aim of payments bank is to enlarge the extend of imbursement and financial services to firm, low-income households, migrant labor force in protected technology-driven atmosphere.

Biggest Security Threats to Payments

- **Sophisticated Malware**

Malware has gotten very complicated, tracking all from keystrokes to education passwords, to perceptive notebook cameras and microphones. Uniform Resource Locator scraping can see wherever you have been online, and bots can be installed in your system without you ever knowing it. This all adds up to bad actors knowing who you are, what you do, your passwords, etc.

- **Poor Patching**

Patching is a dangerous movement for any development, security-conscious society. Unluckily, patching demands must be addressed on operating systems, applications and set of connection communications, making it a bit of a obstacle in some minds.

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FACTORS INFLUENCING CONSUMER BEHAVIOUR TOWARDS ECO- FRIENDLY PACKAGES

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ABSTRACT:
Packaging is of great importance, since it is the first level of communication between a product and the consumers.Nowadays, consumers are more aware of the environmental problems and require from the companies to adopt packaging process, which is eco-friendly, and which takes into account the issue of their safety. All the activities of the business concerns end with consumers and consumer satisfaction. Customer behaviour study is based on consumer buying behavior, with the customer playing the three distinct roles of user, payer and buyer. In order to develop a framework for the study consumer behaviour it is helpful to begin by considering the evolution of the field of consumer research and the different paradigms of thought that have influenced the discipline. The increasing internationalization and globalization of business has forced many firms to reconsider what contributes to their competitive advantage. With pollution levels increasing every year and consumers willing to make more sense in their daily consumption, packaging sustainability represents an important issue for industrials and retailers. The understanding of environmentally concerned consumer behavior is of importance to consumers, business, market place, educationists. The purpose of this paper is to examine the influence of eco-friendly packaging on consumers' responses. In this paper, consumer environmental choice is studied by analyzing the relative importance of green packaging when compared with other relevant product attributes.

Keywords: Consumer Behavior, Eco-friendly packaging

INTRODUCTION

Packaging is regarded as the fifth element, or better the fifth 'P', of the marketing mix, because of its importance in the communication with consumers, in building relationship with them, in influencing their purchasing decisions, the promotion of the products and the brand values, as well as in differentiating a product (company) from the competitors. The word "green" hinders under itself various interpretations by different interest groups; the media defines green packaging with reducing overflowing landfills and global warming, the manufactures equate about decreasing carbon footprint as well as saving

Turkish Online Journal of Qualitative Inquiry (TOJQI)

Volume 12, Issue 3, June 2021: 4431 - 4439

Research Article

APPLICATION OF INTERNET OF THINGS IN INDIAN AGRICULTURE BASED ON TURMERIC CULTIVATION.

Mrs.M.Sangeetha[1], Dr.K.Brindha[2]

ABSTRACT

In India, the most imperative issue ascends in conventional technique is the unevenness in the configuration of climatic conditions (occasional precipitation, soil disintegration and so on) because of which the efficiency is diminished to a noteworthy degree. Another real disservice is these gadgets are yet to reach in the Indian market. The mindfulness is inadequate in the Indian farmers. To decide the dirt ripeness and profiling he needs to movement to adjacent agriculture based on turmeric cultivation focuses, which might possibly be available. The data in regards to the dirt conditions are not adequately utilized by the Indian farmers. The main objective of the study is to analyse the level of awareness among farmers about IoT in marketing process. For this purpose a sample of 75 was collected from the farmers of Coimbatore region based on random sampling method were percentage analysis, one way Anova, multiple regression and Kruskal Wallis test were used as samples to analyse the data. The conclusion is that the respondents don't have awareness towards access to web for IoT in marketing, display of notices/ circulars through news papers by the government, checking availability of Books/ lend out and the respondents (farmers) also have a negative opinion towards the process of IoT in marketing.

Key words: Agriculture based on turmeric cultivation, Awareness and Farmers

INTRODUCTION

Internet of Things is shaped out of squares working in which sensors, e-gadgets are incorporated. There won't be any human to human communication because of the inclusion of IoT in marketing. It is a self - mechanized process. The IoT in marketing innovation is more powerful because of: Peter J. Ryan (2017)

- Effective administration of Time.
- Communication and Connectivity.
- Faster get to and decreases human endeavors.

IoT in marketing gadgets are relatively utilized as a part of each segment including agriculture based on turmeric cultivation. These gadgets give answer for the angles like enhancing the nature

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of the harvests, soil quality, robotizing water for water system lastly the imperative part – estimating of climate. Empowering these gadgets in agriculture based on turmeric cultivation would help us to balance out our generation and supply, it starts to make more request and draws out an appropriate harmony between the request and supply. A reasonable development is guaranteed by empowering the utilization of IoT in marketing gadgets in the agriculture based on

STUDY ON EVALAUTION OF CHALLENGES AND BENEFITS IN SUCCESSFUL IMPLEMENTATION OF SUPPLY CHAIN MANAGEMENT BY MANUFACTURING COMPANIES IN COIMBATORE

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ABSTRACT

Supply Chain Management is basically the coordination of activities across the entire supply chain network for the sole purpose of ensuring the efficient movement of products and information along the entire supply chain. Supply Chain Management (SCM) plays significant role that helps companies to adopt modern technology to improve their system and also effectively serve their customers. The complexities associated with these systems, expertise required for its implementation, huge commitment of fund and other challenges do exist however in spite of the benefits it offers. The benefits in adopting and implementing supply chain management can improve profitability, customer response and ability to deliver value to the customers and also to improve the interconnection and interdependence among firms. The purpose of this paper is to discover the challenges and benefits perceived by adopting and implementing SCM by manufacturing companies in Coimbatore. The study is descriptive in nature, data are collected via two processes, namely Primary sources and Secondary sources. Simple random sampling method is used considering the manufacturing companies involved in adopting the SCM technology in Coimbatore district. One hundred and sixty companies are selected for the study and the tools used for analysis are percentage analysis, weighted average and Chi-square test. Majority (40.6%) of the organisations stated Overall Functional Capabilities improved their prospective after adopting SCM. Challenges in implementing SCM did not found to have significant association when compared with success of implementing SCM. Challenges based on transition into new technology and adopting to fit with the IT skills, installation, implementation process, training hours and cost of training, adopting into new system and change in firm strategic direction as well as the burden of work process is observed to have marginal influence on overall functional capabilities. However, association is not statistically proved. There is a significant association between success of adopting supply chain management (SCM) and Benefits of implementing SCM.

Keywords: Supply Chain Management, Manufacturing companies, Technology, Challenges, Benefits, efficiency, etc.

International Journal of Commerce and Management Research
www.managejournal.com
ISSN: 2455-1627
Received: 14-11-2021, Accepted: 29-11-2021, Published: 15-12-2021
Volume 7, Issue 6, 2021, Page No. 45-46

Present status and future prospects of turmeric production in Tamil Nadu

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Abstract
Turmeric is one of the most popular spices and had been used in India since ages. That is what it is said that this spice is in India and also called 'Indian saffron'. It is used in many Hindu Social rites even now and Indians tend to be attached to it emotionally. It is also used as a medicine. This is because of this bonding only that India is the largest producer, consumer and exporter of this spice. The overall production of turmeric stands at roughly 800000 tonnes in which India hold a share of approximately 75-80%. Also India consumes around 80% of its own production. Tamil Nadu accounts for 17 per cent of the country's output. The price is likely to range between Rs. 2,000 and Rs. 2,200 a quintal (G. K. Nair 2006).
This study aims to know about the objective of Erode turmeric market, the production level and its export condition. Through this study the researchers gained information about the new techniques introduced in turmeric cultivation and its development.

Keywords: turmeric, curcumin, market

Introduction
Turmeric is one of the oldest spices and had been used in India since ages. That is why it is said that this spice belongs to India and also called 'Indian saffron'. It is used in many Hindu rituals even now and Indians tend to be attached to it emotionally. It is also used as a medicine. This is because of this bonding only that India is the largest producer, consumer and exporter of this spice. The world production of turmeric stands at around 800000 tonnes in which India hold a share of approximately 75-80%. Also India consumes around 80% of its own production.
Tamil Nadu accounts for 17 per cent of the country's output. The price is likely to range between Rs. 2,000 and Rs. 2,200 a quintal (G. K. Nair 2006).

Indian Turmeric Market
Turmeric holds a reputation of being auspicious in India. It has been used in India since a long time and is also used in many Hindu rituals and ceremonies. India's production of turmeric is the largest in the world. Andhra Pradesh stands to be the leading turmeric producing state in India. It exceeds the domestic demand and that gets India into an exporting condition. The Indian turmeric is considered to be of the best quality in the world. Our country contributes to the largest share in the world's total exports figuring around 40000 tons to the countries like United Arab Emirates, United States, Japan, United Kingdom, Sri Lanka.
UAE accounts for the largest share in total Indian exports followed by United States. Turmeric is available in two seasons in India i.e. from February to May and from August to October. There are various varieties of turmeric that are produced in India namely: -

- Alleppey Finger (Kerala)
- Erode Turmeric (Tamil Nadu)
- Salem Turmeric (Tamil Nadu)
- Rajapore Turmeric (Maharashtra)
- Sangli Turmeric (Maharashtra)
- Nizamabad Bulb (Andhra Pradesh)

From the above-mentioned varieties of turmeric, Alleppey, Rajapore and Erode varieties are exported from India.

Present Status of Turmeric Market
Turmeric trade is the lifeline of several persons and it has raised the standard of hundreds of farmers in Erode district. Erode turmeric market is the second biggest markets in the country. Now the turmeric market is conducted in four places by the Regulated Marketing Committee, Erode Cooperative marketing Society, Gobichettipalayam Cooperative Marketing Society and private traders. The arrival in the private market is very high as they are granting advance money for the crop to the farmers and also providing space for stocking the produce. Free fumigation is also under taken.
Tamil Nadu plays an important role in production of range of spices and accounts for a major share in export of turmeric, cardamom, chillies, garlic, curry leaves, tamarind and herbal spices.
Turmeric grown in Erode region is preferred for grinding but due to cross contamination of different varieties and improper post-harvest practices followed, the acceptance level of Erode turmeric has declined sharply. Currently, most of the turmeric produce in the Erode belt is used for domestic consumption and the unit value realization by the farmers is comparatively lower.
On the other hand, the quality of Salem turmeric is comparatively better and has acceptance in the international market for grinding and blending purposes.
Primary objective of setting up an agri-export zone would be export turmeric and processed products. Other objectives, included moving up of the value chain by promoting processed and value added form of turmeric exports, to introduce high yielding and disease resistance variety of turmeric having high curcumin content, to provide adequate and better facilities for proper storing and packing, to

DE-NOISING OF TOMATO FRUIT IMAGE USING SPIRAL SEED FILTER

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Abstract:
Fruit disease causes more economic losses in agricultural industry. In prediction of disease image pre-processing plays an important role. Fruits may appear healthy and fresh to human eye but its quality is known by customer after eating the fruits. Images are used to forecast quality of the fruits and vegetables, but accuracy of grading will be affected by distortion. Various noise affect the quality of the image and it can be denoised by various filters. The preservative edges, background information and contrast of images are the challenging issues in exiting filtering methods. This research proposed Spiral Seed Filter (SSF) to increase the quality of the tomato fruit image by extracting the luma variance and by applying the row wise and column wise 3x3 cross correlation. The result shows that the proposed filter increases the PSNR (Peak Signal to Noise ratio) and reduces MSE (Mean Square Error) metric values and yield good results. It gives highest PSNR value such as 94.68. It gives 0.0001 as MSE value for proposed method.

Keywords: Image processing, Filter, PSNR (Peak Signal to Noise ratio), MSE (Mean Square Error)

1. Introduction

Tomato belongs to the family of *Solanum lycopersicum* L. Tomato is the second largest fruit consumed worldwide. Tomato is consumed throughout the world for its nutrition contents. Thus cultivation of tomato has increased in recent years. Tomato fruit is of four types as milano, chonto, cherry and industrial. Among these Milano has the high commercial value as the shelf life is comparatively good [1]. Chonto and cherry are consumed fresh and mostly consumed in domestic. Tomato rich in vitamin C and A, Calcium, Phosphorus, Potassium, Iron and Copper which supports in human metabolism. Tomato is the most widely cultivated crop in India. Winter and summer seasons are the most suitable seasons for cultivation of tomato crop as it cannot withstand frost. Average temperature ranging from 21°-23°C is the most suitable weather for good yield of fruit. Weather conditions are given more importance as it affects the quality of the fruit in its pigmentation and nutritive value. The fruit becomes more vulnerable to diseases that are caused by fungi, bacteria, and viruses due to the climatic changes. Tomato being a berry fruit it has number of attributes such as size, shape, pigmentation, ripening rate to regulate the quality of the fruit. Farmers can benefit from its cultivation only when the fruit has good size, shape, pigmentation, taste and

SSN (Print): 2204-0595
ISSN (Online): 2203-1731

Turkish Journal of Computer and Mathematics Education *Vol.12 No.3(2021), 4284-4297*

Research Article

A Novel Technique for IDS in Distributed Data Environment Using Merkel Based Security Mechanism for Secure User Allocation

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Article History: Received: 10 November 2020; Revised 12 January 2021 Accepted: 27 January 2021; Published online: 5 April 2021

Abstract: Multiple corporations and people frequently launching their data in the cloud environment. With the huge growth of data mining and the cloud storage paradigm without checking protection policies and procedures that can pose a great risk to their sector. The data backup in the cloud storage would not only be problematic for the cloud user but also the Cloud Service Provider (CSP). The unencrypted handling of confidential data is likely to make access simpler for unauthorized individuals and also by the CSP. Normal encryption algorithms need more primitive computing, space and costs for storage. It is also of utmost importance to secure cloud data with limited measurement and storage capacity. Till now, different methods and frameworks to maintain a degree of protection that meets the requirements of modern life have been created. Within those systems, Intrusion Detection Systems (IDS) appear to find suspicious actions or events which are vulnerable to a system's proper activity. Today, because of the intermittent rise in network traffic, the IDS face problems for detecting attacks in broad streams of links. In existing the Two-Stage Ensemble Classifier for IDS (TSE-IDS) had been implemented. For detecting trends on big data, the irrelevant data characteristics appear to decrease both the velocity of attack detection and accuracy. The computing resource available for training and testing of the IDS models is also increased. We have put forward a novel strategy in this research paper to the above issues to improve the balance of the server load effectively with protected user allocation to a server, and thereby minimize resource complexity on the cloud data storage device, by integrating the Authentication based User-Allocation with Merkle based Hashing-Tree (AUA-MHT) technique. Through this, the authentication attack and flood attack are detected and restrict unauthorized users. By this proposed model the cloud server verifies, by resolving such attacks, that only approved users are accessing the cloud info. The proposed framework AUA-MHT performs better than the existing model TSE-IDS for parameters such as User Allocation Rate, Intrusion Detection Rate and Space Complexity

Keywords: Intrusion Detection System, Machine Learning, Cloud Storage, Security, User- Allocation.

1. Introduction

There is an emerging model in computing called cloud computing which provides users with unlimited services. On the one side, the absence of useless knowledge renders cloud storage valuable. Cloud platforms should be seen as an effective storage platform. Both hackers and terrorists will misuse the cloud for their purposes. For e.g., it is conceivable that a harmful user is residing in a Virtual-Machine (VM), essentially intrudes in several VMs in the cloud, and uses the VM to disperse ransomware or initiate a Distributed-Denial ofService (DDoS) attack and so on. There would be a lot of network traffic related to occupant activity in the cloud world both external and internal traffic. The "external" traffic refers to the network traffic between customers accessing cloud resources from the network, and the "internal" traffic refers to network traffic between VMs in the cloud (Moustafa et al. 2019).

Data transmission will begin to grow exponentially and be at risk for disruptive threats. Cyber threats harm cloud vendors and data users, although cloud usage still suffers. Intruder avoidance is an essential aspect of protection control for cloud storage. This is an overview of the role of IDS to verify the proper operation of the internet in cloud computing (Moustafa et al. 2017).

Today, technology has contributed to the emergence of Block Chain (BC) based systems in various industries. The BC provides new possibilities by facilitating smart contracts, value transfers, and conflict settlement. The BC system has different uses in multiple fields in various sectors that go beyond digital currencies and financing (Moustafa et al. 2018).

The solutions of IDS and BC have been deployed in the cloud to classify and secure data (Keshk et al.2019). IDS based on the cloud are mainly categorized into host-based and network-based classification. Since a Host-

A Hybrid TF-IDF and N-Grams Based Feature Extraction Approach for Accurate Detection of Fake News on Twitter Data

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Article History: Received: 10 January 2021; Revised: 12 February 2021; Accepted: 27 March 2021; Published online: 7 June2021

Abstract
As there is an exponential growth of social networks and due to large usage of social media, there is an increasing demand for data in the web for the users which leads to current inclinations concepts in the area of research. Sentiment, text analysis and social media analysis, especially in user reviews and a tweet has become a popular area of research. Fake and Real data classification from user responses plays a key role in fake detection on social media platforms. Fake news and lack of trust in the media are growing problems with huge difficulties in our society. Evidently in a deceptive story or fake news in social Medias leads to change its description. The main objective of this research is to detect the fake news, which is a classic text classification problem with a straightforward proposition. There is needed to build a model that can differentiate between "Real" news and "Fake" news with NLP (Natural Language Processing) and ML (Machine Learning) techniques for discovering the 'fake news', or deceptive news stories that arises from the defective bases. Often, some preprocessing steps and feature extraction techniques are applied to obtain features from twitter data to improve the accuracy using supervised classification algorithm. This paper elucidates the ML classification approaches with different feature extraction techniques to obtain a text analysis and the results obtained are compared to identify the best possible approach.
Keyword: Feature Extraction, Fake News, Twitter, SVM

1. Introduction

Social media has substituted the usual media. It has also developed as one of the key platforms for spreading news which travel faster and also easier than traditional news bases due to low cost internet convenience. However, not all the news published on social media is genuine and it may come from unverified sources. Fake information can be created and spread easily through social media and this fake news can potentially or intentionally mislead readers. The extensive spread of fake news brings negative impact not only to individual but also society. So, fake news may affect how readers perceive online news on social media and indirectly mislead the way they respond to real news. However, some existing manual fact in section websites are established to inspect if a news is realistic, it does not measure with the bulk of the wide range online facts, particularly on social media [1]. To solve this problem, many mechanized fact inspection applications are established to tackle the requirement for automation and also scalability. Numerous computational techniques are available which

IJSTR©2020
www.ijstr.org

ISBN: 978-93-80686-04-2

Big Data Mining using Clustering Algorithm with WEKA Distribution

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Abstract **—In recent years, big data streams have become a hot topic in a variety of research fields, including data mining, machine learning, artificial intelligence, information fusion, the semantic Web, and social networks. Big Data is a modern concept for databases that we can't handle with our existing methodologies or data processing software tools because of their size and complexity. Big Data mining is the ability to obtain valuable information from massive databases or sources of data that were previously impossible to process due to their scale, uncertainty, and velocity. The various clustering algorithms are investigated in this paper. . The main goal of the paper is to compare different clustering algorithms using WEKA and determine which algorithm is best for users working with data.**

Keyword **— Big data mining, WEKA, clustering algorithms, k-means algorithm**

I. Introduction

Big data mining a are more complex to use than data traditional mining algorithms.

Extending existing approaches to deal with massive workloads (such as hierarchical clustering, K-Mean, and Fuzzy C- Mean) is a normal way to cluster big data. The majority of extensions are focused on analysing a certain number of big data samples, and they differ in how the sample-based results are used to partition the overall data. Big data clustering is becoming a distributed and concurrent process. The key challenges of cloud computing in data mining with big data have been described as a lack of computational efficiency and storage space.[13]

We are only concerned with clustering in this paper because it is the most critical method when dealing with a large database. For clustering, I use the Weka tools. Clustering is the process of grouping a set of objects so that objects in the same cluster are more similar than those in other clusters. Clustering is a popular technique for statistical data analysis used in many fields, including machine learning, pattern recognition, image analysis, information retrieval, and bioinformatics, and is a main task of explorative data mining. For this, I'm using the Weka data mining software as this software provides better user interface than other data mining tools.

WEKA is a open framework programming tool with various built-in clustering algorithms such as canopy, cobweb, EM, farthest first, Hierar chicalcluster, makedensity Basedcluster, and simplek means. However, these algorithms were compared using methods that took into account accuracy and a variety of other factors. Capturing, saving, searching, exchanging, and, most notably, storing vast amounts of data pose a number of challenges. All industries have vast amounts of data, but they lack the necessary expertise and resources to extract value from it. Data mining uses a variety of algorithms to assist these industries in making informed decisions. WEKA is a data mining application that can perform a variety of tasks such as data pre-processing, attribute collection, classification, clustering, and information discovery improvement using various Meta classifiers.

II. Related Work

The author demonstrated that clustering is a strategy for effectively and efficiently analysing a dataset. They analysed high-dimensional data using a K-means clustering algorithm and split it into smaller clusters. At the classification point, these clusters are used to classify the dataset. To demonstrate the increase in accuracy and execution time, a modified K-means clustering algorithm is used. [1]

WEKA Tools' Analysis of Clustering Algorithm has been described in detail. The method of paper defined clustering is used in a variety of fields, including image analysis, pattern recognition, and statistical data analysis. Clustering is the division of data into groups of related objects. Every cluster contains a variety of items that are analogous to them but different from objects from other sets. [2]

Another work looks at a K-means clustering algorithm that is already in use. According to the author, the conventional K-means clustering method is costly and more vulnerable to outliers, resulting in unreliable performance. To address these problems, several improved K-means clustering methods are investigated using various approaches. The final conclusion is that the K-means clustering algorithm's drawback can be overcome by using the existing algorithm with a different prospective. [3]

To solve the downside of K-means clustering, the author used canopy clustering. For K-means clustering, the canopy clustering algorithm is used as a pre-clustering strategy. The current clustering algorithm works normally when canopies are used and an initial cluster centre is provided. This method is effective for

higher-dimensional datasets and reduces execution time.[4]

The author of this paper compares various clustering strategies using the Waikato Environment for Information Analysis, or WEKA. We can draw the following conclusions after reviewing the results of the algorithm testing: The K-Means algorithm outperforms the EM and Density Based Clustering algorithms in terms of efficiency. While all of the algorithms have some complexity in some (noisy) data when clustered, the K-Means algorithm outperforms the EM and Density Based algorithms in terms of model building time. [5].

Every algorithm has its own value, and we use them based on the data's behaviour, but based on this study, we discovered that the k-means clustering algorithm is the simplest of the algorithms. Working in Weka does not necessitate a deep understanding of algorithms. As a result, Weka is a better platform for data mining applications. [6]

Proposed methodology

Methodology Suggestions the proposed method is shown in Figure 1. Our main goal is to reduce the number of iterations and time complexity of K-means clustering. The K-means clustering algorithm is implemented in this proposed form.

Clustering techniques are suitable for detecting network anomalies because they can handle unlabeled data. [7]

III. Clustering Algorithms

Cobweb clustering algorithm

COBWEB is a hierarchical computational clustering incremental structure. Professor Douglas H. Fisher, currently at Vanderbilt University, invented COBWEB. COBWEB incrementally organises observations into a classification tree clustering, which provides a probabilistic explanation for each cluster. A class (concept) is represented by each node in a classification tree, which is labelled by a probabilistic concept that summarises the attribute-value distributions of objects listed under the node. [9] Indeed, a COBWEB algorithm like this will be based on the Category Utility (CU) function. This can be used to assess the clustering accuracy.

Canopy Clustering

Canopy clustering is an algorithm that is not supervised. For K-means clustering, it functions as a pre-clustering algorithm. This can efficiently process large datasets and creates canopies that pre-partition the dataset so that existing slow methods like K-means clustering can be analysed. [7].

EM clustering algorithm

Expectation and Maximization (EM) is part of data mining application tool. In a model, the EM algorithm is used to find the most likely parameters. These types of models In addition to uncertain parameters and known data observations, this model includes a latent variable and employs probability functions. The model

ISSN: 0011-9342 | Year 2021

Design Engineering

Issue: 8 | Pages: 2492-2504

An Efficient Privacy Preserving using Map Reduce based International Data Encryption Algorithm and weighted Auto Encoder

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Abstract

One of the most important aspects of big data investigation is data security. The majority of cloud system applications involve sensitive data, namely personal, business, or health records. Threats to such data could put the cloud platforms that store it in jeopardy. Conventional security solutions, on the other hand, are incapable of securing big data migration. To handle the generation of vast amount of data and security aspects of generated data across cloud is handled by an effective privacy preserving mechanism. Initially, cloud based dataset is clustered and information are balanced with map-reduce mechanism. Further, the information are encrypted using International Data Encryption Algorithm (IDEA) and the convolution process is attained over pertain the estimation process to the encrypted or convoluted data. The estimation process is accomplished by the weighted Auto encoder KNN (WAEKNN) classifier. Suppose the encrypted data are not appropriately encrypted means the data are again transmitted to the convolution process. Experimental results of proposed framework is compared with existing technique and the big data based privacy preserving scheme outperforms the existing techniques.

Keyword: Big data, privacy, data security, encryption, decryption, clustering and classification.

1. Introduction

The rapid development of technologies in collecting and storing data required the organizations to gather massive data volume. There is an assessment that the volume of the information is doubled in size for every 20 months and the number of databases is also increased faster [1]. It is tremendously a challenging task to extract the required information and also the traditional techniques and tools are failed to handle these gigantic dimensions of data [2, 3].

Data Mining handles huge volume of data with the combination of sophisticated algorithms and available data analysis methods. In general, the transaction data is known as raw material and data mining is a crawler which screens the valuable items of information from large amounts of raw data [4]. The generation of huge amount of data is effectively handled by the big data

Design Engineering

ISSN: 0011-9342 | Year 2021
Issue: 7 | Pages: 6587- 6607

SECURED AND TRUST AWARE ROUTING SCHEME FOR WIRELESS SENSOR NETWORK WITH THE CONCERN OF PACKET DROPPING ATTACKER NODES

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Abstract-

In a wireless sensor network, it is very difficult to achieve secured routing because of the unavailability of a centralized unit for investigating and securing the functions performed by the malicious attackers. Triple kay based Selective Dropping Attack Detection method (TK-SDADM) is established in the traditional approach for assuring secure routing. But, this traditional method cannot be able to provide secured transmission of data within the nodes. Therefore, there is a need for a novel method for assuring the highly secured transmission of data by identifying the inside attackers. Hence, a new approach named as Secured and Trust aware Secured Routing Scheme (STSRS) is established. Primarily, trust aware routing is carried out for assuring the secured data transmission. Also, in this approach, optimal shortest route path selection is performed by the Pareto optimality based Particle swarm optimization algorithm. After the selection of path is finished, the data is transmitted securely by using the Triple key-based AES encryption technique. The entire process of this approach is examined using the NS2 simulation platform and so that the output efficiency of this new approach is improved.

Keywords: Secured Data transmission, Trustable Routing, Optimal Routing, Pareto Optimality, Triple Key Based Encryption, MOPSO-Modified Particle Swarm Optimization.

1. INTRODUCTION

WSNs contain sensor nodes that are connected via wireless media. Multi-hop communication is developed along the direction in which the data is transmitted from the source to the destination node [1]. Multiple sensor nodes are gathered and are built by themselves. One petite sensor device is used for observing, calculating and communicating to other device units. The environmental factors like sound, temperature, pollution, humidity and compression etc., are measured and observed by WSNs. The energy efficiency in communication media is not

A STUDY ON CARDIOVASCULAR DISEASE PREDICTION USING DATA MINING TECHNIQUES

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Abstract - *In the digital era, there are abundant data created and are stored in repositories. Health sector is no exception from it. But these data are not analyzed with proper techniques in order to extract the hidden information from it. In recent days, Data mining has wide wings in its application. Medical field is one of the application areas of data mining techniques. Although there are number of diseases that affect human, not all are life threatening in nature. Heart disease being one of the serious diseases has to be predicted and treated at the earliest to avoid death rate. Every year millions of people are affected with this disease. More than one third of the world's population affected by this disease. If not treated on proper time it will lead to deaths in people under 70 years of age. Early diagnosis of cardiovascular disease are challenging task, and computer aided methods has been proposed to overcome the disease. Revealing facts about the disease supports the physician in decision making. It can be achieved by KDD (Knowledge Discovery in Databases) process using data mining techniques. The objective of this study is to carry out empirical analysis on various applications of data mining and machine learning techniques. Some of the techniques used worldwide by the researchers for the diagnosis of heart disease are support vector machine, neural network, naive Bayes, conventional neural network, k-Nearest Neighbor, Decision tree and so on.*

***Keywords*:Heart Disease, Data Mining, KDD, Prediction.**

1.INTRODUCTION

In a human system heart is the primary organ which plays a vital role. The functions of heart are pumping oxygenated blood to the other body parts, pumpinghormones and other vital substances to different parts of the body, receiving deoxygenatedblood and carrying metabolic waste products from the body and pumping it to the lungs for oxygenation and to maintain blood pressure [10]. The heart and its blood vessels are knownas the cardiovascular system [10]. Smooth function cardiovascular system is very importantfor healthy life of person. In recent times it is very common to see that heart disease being the main cause fordeath. The death rates of recent days are alarming to find the causes for heart disease and toobtain the prevention measures at the earliest. At present, there are so many diseases like diabetes, dengue, thyroid, breast cancer, lung cancer, cardiovascular disease and so on., which affects the human worldwide. According to the World Health Organization (WHO) report more than 17.9 million

Efflatounia
ISSN: 1110-8703
Pages: 2119 – 2131
Volume: 5 Issue 2

An Improvised Multilayer Perceptron Network Using Boosted Regression Tree Based Missing Value Imputation And Fuzzy Backward Elimination Feature Selection For Autism Disease Prediction

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Abstract

Autism is also known as behavioral disease which affects the communication skill and social interaction with others. This neuro-syndrome begins at a person's childhood and continues throughout their life. But early detection of autism may positively assist the victim to maintain both their physical and mental health. Emergence of machine learning in the field of medical research greatly improves the diagnosis of disease at their earlier stages. Thus, this paper focuses on developing a improvised classification model to increase the accurate classification by enhancing the quality of autism dataset. Though, there many existing research works are there to classify the autism, importance on quality of dataset is not considered. In this proposed work the raw autism dataset collected from Kaggle repository with missing values is well treated by adapting two main preprocessing method. In this work boosted regression tree is used for imputing the missing values of autism to complete dataset. Fuzzy backward feature elimination is applied for reducing the feature set involved in classification and it also influence the accuracy by maximizing the relevancy of attributes and minimizing the redundancy among them. The Multilayer perceptron is used as classifier for handling the imbalance class issue in autism detection. From the results obtained the efficacy of the proposed improvised multilayer perceptron is proved more prominently in autism detection.

Keywords: Autism, missing value, imputation, boosted regression tree, Fuzzy Backward Feature Elimination, Multilayer perceptron network

Introduction

In recent decades, one of the most prevalent childhood disorders with sustained increase is known as Autism. In India, 1 among 100 children under age of 10 has autism and diagnosing autism is conducted by clinical examination method along with behavioral analytics for Classification of presence or absence of Autism [1]. It is a type of mental disorder which hinders the ability of linguistic, cognitive, communication, abilities and social skills [2]. This order occurs within first 5 years of children and

Design Engineering

ISSN: 0011-9342 | Year 2021
Issue: 7 | Pages: 6573- 6586

A HYBRID DENOISING ALGORITHM FOR PATTERENED FABRIC IMAGES

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Abstract-

The textile industry is mostly concerned with the design, manufacture and supply of fabrics. It is one of the main sources of revenue generated industry. The price of fabrics is severely affected by the defects of fabrics that represent a major risk to the textile industry. A very small percentage of defects are detected by the physical inspection even with highly trained inspectors. Automatic defect detection system will increase the defect detection percentage. It is economically profitable. Fabric images taken for automatic defect detection process. Noise is commonly present in fabric images. Noise degrade the fabric's value. Noise is very complicated to remove from the fabric images without the preceding facts of noise model. The purpose of noise models reviews is necessary for denoising methods. The sparse denoising methods suggest a class of denoising principle. The use of sparse and over complete representations to develop position of the image denoising system. K_SVD (K means Singular Value Decomposition) is a method that is used to represent the signal of each set, which can create dictionary. The atoms in the dictionary can be equalized with each signal using combination of the atoms in the dictionary. K_SVD can remove the noise present in the color images and gray scale images. It can remove Gaussian noise from an image. Wavelets are often used to denoise two dimensional signals in images. The Discrete Wavelet Transform (DWT) is a denoising method can be decomposed into its low-frequency and high-frequency parts of an image. The low-frequency parts represent the approximate energy of an image, while the three high-frequency parts represent the detailed information of an image, including the horizontal, vertical and diagonal parts. It can remove Gaussian noise, impulse noise, speckle noise. The proposed hybrid denoising algorithm ksvd_dwt is the combination of ksvd and dwt. It can remove sparse representation noise and wavelet signal noise from the images. The performance of this study can be measured in terms of Peak Signal Noise Ratio (PSNR) and Mean Square Error (MSE) values.

Keywords: denoising, sparserepresentation, dictionaries, Discrete Wavelet transformation, KSVD_DWT.

INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY

RESEARCH ARTICLE

Enhanced segmentation network with deep learning for Biomedical waste classification

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OPEN ACCESS

Received: 26.11.2020
Accepted: 26.12.2020
Published: 20.01.2021

Citation: Mythili T, Anbarasi A (2021) Enhanced segmentation network with deep learning for Biomedical waste classification. Indian Journal of Science and Technology 14(2): 141-153. https://doi.org/10.17485/IJST/v14i2.2137

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Funding: None

Competing Interests: None

Published By Indian Society for Education and Environment (iSee)

ISSN
Print: 0974-6846
Electronic: 0974-5645

Abstract

Objective: To maximize the accuracy of classifying the medical wastage, an Enhanced Segmentation Network (EnSegNet) with Deep Neural Network-Trash Classification (EnSegNet-DNN-TC) is proposed in this article. **Methods**: Initially, a core trainable segmentation network called SegNet framework is proposed which uses the Encoder-Decoder Network (EDN) and a pixel-wise classification layer for image segmentation. The decoder is used to upsample its low-resolution input feature maps via max-pooling. Also, SegNet uses fewer parameters for training. The uncertainty inherent to the EDN is modeled by the Bayesian functions to segment the input images. But, this SegNet can sample a limited amount of pixels in the images. Hence, an EnSegNet is proposed that uses Content-Sensitive Sampling (CSS) to sample more pixels in the data-sparse regions and fewer pixels in data-dense regions. Once the segmentation is completed, the DNN is applied for classifying the wastage using the segmented images. **Findings**: The experimental results show that the EnSegNet-DNN-TC framework achieves 88% accuracy compared to the DNN-TC for considering 100 images of different categories of biomedical wastes from the trash image dataset.

Keywords: Biomedical wastage classification; deep learning; image segmentation; ResNext; encoder-decoder network

1 Introduction

Biomedical wastage normally creates from human, animal healthcare, medical training and research, biological laboratory wastage and other facilities. Part of the wastage stream is contagious or possibly harmful and should be carefully handled to protect health and sanitation workers. Typically, biomedical wastage are regulated and controlled based on different standards and protocols in various nations. In healthcare applications, the wastage are produced during inappropriate management which causes a direct health impact on the public, the atmosphere and the healthcare personnel. Biomedical wastage are a dangerous health hazard to the community, hospital, healthcare units, flora and fauna of the region. It should be accumulated in

BIPOLAR INTERVAL VALUED INTUITIONISTIC FUZZY NECESSITY OPERATOR

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Abstract

In this paper we have introduced the necessity operator on a Bipolar Interval Valued Intuitionistic Fuzzy Subset of a Bipolar Interval Valued Intuitionistic Fuzzy Topological space and verified its property.

Keyword

Bipolar Interval Valued Intuitionistic Fuzzy Topological Space, Bipolar Interval Valued Intuitionistic Fuzzy Set.

1. Introduction:

Lee introduced the concept of Bipolar fuzzy set. In Bipolar Intuitionistic Fuzzy Topology the membership and non-membership degree of the fuzzy set lies in the range [0,1] and [-1,0][21]. In this paper we have introduced the Bipolar Interval Valued Intuitionistic Fuzzy necessity operator on a Bipolar Interval Valued Intuitionistic Fuzzy Subset of a Bipolar Interval Valued Intuitionistic Fuzzy Topological space and verified that the necessity operator on a Bipolar Interval Valued Intuitionistic Fuzzy Subset itself forms a Bipolar Interval Valued Intuitionistic Fuzzy Topological space.

2. Definition:

Let X be a non-empty set, and let A be a Bipolar interval valued intuitionistic fuzzy set on a Bipolar Interval Valued Intuitionistic Topological Space BIVIFTS(X), then the necessity operator on A is defined as

i.

ii. $$[\ ]A = \{\left\langle x, \begin{matrix}[\mu^P_{AL}(x), \mu^P_{AU}(x)], [1-\mu^P_{AU}(x), 1-\mu^P_{AL}(x)], \\ [\mu^N_{AL}(x), \mu^N_{AU}(x)], [-1+\mu^N_{AU}(x), -1+\mu^N_{AL}(x)]\end{matrix}\right\rangle \mid x \in x\}$$

A Biographical Study on the Life of Paulo Coelho in the light of Abraham Maslow's Hierarchy of needs theory

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Abstract:

Paulo Coelho, one of the most prominent contemporary writers in the world, is an extraordinary personality who has a strong drive to realize his true potential and achieve his true self.He delivers through his novels that there is an intrinsic potential inside everyone and everyone must develop to its fullest in order to lead a purposeful life. Abraham Maslow, the renowned twentieth century theorist and founder of the humanistic psychology toofocusses on the optimistic facets of human experiences. His Hierarchy of Needs theory centers on individuals' personal meanings, understandings and subjective experiences attached with growing and learning. He postulated the idea that people are programmed to be self-actualized and they have the powerful need for reaching the balance between who they are and who they could be. The research paperexplores Coelho's personal life using Maslow's Hierarchy of Need theory to understand the motivation behind his optimistic vision of his life and to analyse how Coelho moves upward from physiological to self-transcendence needs.

Key Words: Humanistic Psychology, motivation, Hierarchy of need theory, self-transcendence, etc.

Vol. 4 No. 2 January 2020 E-ISSN: 2456-5571

Self-actualization through Travel in Paulo Coelho's *The Alchemist*

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Abstract

Paulo Coelho, the universally renowned writer, is not a man of half measures, rather a man of extremes. He is an avid traveller. His travel is involved with two basic human instincts such as the drive towards movement in the external world and the reflexive drive toward movement in the internal world. He is an adventurer who has a constant hunger for new experiences. He believes that travelling thrusts a person to see the unknown places and provides a bounty of new information and ideas to expand one's mind. Understanding the true motivation of the adventure travelling, he states, "Something of the great human adventure that has brought Ulysses from Troy that had led a part of Don Quixote's experience, that had led Dante and Orpheus into hell, and that had directed Columbus to the Americans; the adventure of travelling towards the unknown" (The Pilgrimage 14). The research paper aims at exploring how Santiago, the principal character in *The Alchemist*evolves through travel experiences and attains self-actualization.

Keywords: Travel experiences, Journey, Evolution, Mind, Motivation, Adventure, etc.

Travelling is one of the most enriching and indispensable activities of human life. Man travels from place to place with a view to satisfying his basic needs or to continue to have his existence from time immemorial. Writing and travel have always been closely connected. Travel writing is an ancient impulse. People have been sharing accounts of their journeys ever since they first began to wander. As the world evolves continuously, a person who travels evolves his way constantly. Travel and travel writing too keeps evolving. Today's modern developed world has emerged due to the evolution of man's tendencies of travelling.

Modern travel narratives are more introspective and the perspective of travel has evolved remarkably from the outer world to inner journey. As quoted by the French theorist, Michel de Certeau, "Every story is a travel story- a spatial practice", it is a challenging task to limit the scope of travel writing. It becomes apparent that the mere physical or geographical expedition and their accounts do not form travel writing, but a personal journey through different situations and different cultures are also equally important. Therefore, travel writing can be perceived as that which is twofold in nature one, the physical journey, and the other accompanying inner journey.

The word Journey refers to both physical journey as well as inner journey. The inner journey involves emotional and spiritual journey and it includes a psychologicalpath leading to self-realization. Spiritual Journeys are also a part of travel literature and it is often a metaphor for self-discovery. Self-discovery is an inner journey that occurs within. In this journey, the main character goes through changes and discovers something about them. It is about the soul's exploration of the world. Spiritual journey is often taken at a mythological level to find one's inner truth, to find God in oneself. Many writers connect their writings to reveal the quest for meaning in life. To name a few, the renowned Italian writer Dante and the classical writer John Milton and their works like The Inferno and Paradise lost unveil the spiritual journey of man and man in relation to God.

According to Abraham Maslow, the humanistic psychologist, attaining self-actualization is the full use of one's skills, capabilities and potentialities etc. He believed that all beings have the self-actualizing ability. Coelho like Maslow focuses on the inner potential of his characters. The characters choose to evolve themselves from one level of existence to another as they have long-lasting curiosity, intentions, instincts and awareness even if they

THE MEGALITHIC MONUMENTS OF THE NILGIRI HILLS

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Abstract

The term megalithic was used to describe a class of monuments in Europe consisting of huge stones which were earthen circles, Cists, Dolmens, Shrines, and Rock art.[5]Captain Congreve – 1847 reports and Breeks excavating – 1873 in the nineteenth century the region has been of particular interest to archeologists. The megalithic monumetns which dot the crests of hills in the upper reaches of the Nilgiri Mountains were thought to have been simply variants of the Niligiri Mountains were thought to the upper reaches of the Nilgiri mountains were throught to have been simply varients of the widely disapersed Megalithic Cemeteries found through out much of South India the so called as "Pandukal" tradition.

Keywords: megalithic, monuments, excavating.

Introduction

The Nilgiri graves came to be seen as a Phenomenon into themselves different from the Pandukal Megalithic tradition. The cemetery complexes were viewed as extradinary corresponding to the remarkable indigenous inhabitants of this mountain zone. Indigenous mountain peoples especially the Toda buffalo pastoralists were seen as something unique they were romanticized as holdovers from a more glorious past. They were compared to the lost tribes of Isreal to the Romans to the sumerians of Southern Iraq and remnants of the ancients buffalo herders of Neolithic South India. The assumption of the antiquits the primitiveness of the highlanders was contained in the suggestion that the well known economic and riarol symbiosis of the various highland communities.

- The agriculturalist Badagas.
- The Pastoral Todas.
- The crafts – oriented Kotas.
- The hunting Kurumbas.
- The gathering - Irulas.

These groups were seen as being proto like in form.

The upper Nilgiri region has several megalithic grave stpes. The grave types of the Nilgiri consisting of

- Cairns are a circular enclosure formed by rough stone walls or heaps or by single stones. These include a type peculiar to the Nilgiri Mountains.
- The Draw –Well type, These are Corral like structures built up to varied sized stones, or small boulders open in the centre.
- Barrows consists of a mound of earth enriched by a ditch or sometimes by one or more circles of stone.
- Cist are constructed of large stone slabs closed on every side occasionally with a 'Porthole' in one of the walls. It may or many not be surrounded by stone circle or Tumulus.

IJIRSET

ISSN(Online): 2319-8753
ISSN (Print): 2347-6710

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 9, Issue 2, February 2020

On Pre Generalized Regular Beta (PGRB) Closed Sets in Topological Spaces

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ABSTRACT: The scope of this paper is to introducea new type of closed sets called pre generalized regular beta (brieflypgrβ-closed sets) closed setsin a Topological spaces.Some propertiesof pgrβclosed set in topological spaces are investigated in this connection and they are compared with the existing closed sets. Some properties of pgrβ- open set are also discussed. Further pgrβ-continuity, pgrβ- irresoluteness and pgrβ- $T_{1/2}$ space are introduced.

KEYWORDS: rβ open, pre-closure, pgrβ-closed sets, pgrβ- continuous function, pgrβ- irresolute,pgrβ- $T_{1/2}$ space

I. INTRODUCTION

N. Levine [10] introduced the concept of generalized closed sets in general topology as a generalization of closed sets in a Topological space in the year 1970. M.H. Stone [16] introduced regular open sets in a Topological space. A.S .Mashour ,M. E. Abd El-Monsef, S. N. El-Deep and R. A. Mahmoud [13] introducedpre continuityin Topological spaces in the year 1982 and also M. E. Abd El-Monsef, S. N. El-Deep and R. A. Mahmoud [1]studied β-open sets and β-closed sets in 1983.D. Andrijevic [2]introduced Semi-preopen sets in 1986 which is equivalent to β open sets introduced byM. E. Abd.El-Monsef, S. N. El-Deep and R. A. Mahmoud [1]. In this paper, we define and study the properties of pgrβ -closed sets. Throughout this paper, space (X, τ) (or simply X) always means a topological space on which no separation axioms are assumed unless explicitly stated. For a subset A of a space X, cl(A), int(A)and A^C denote the closure of A , the interior of A and compliment of A in X respectively. Moreover in this paper we definepgrβ open sets, pgrβ- continuity,pgrβ-irresoluteness and pgrβ- $T_{1/2}$ space and few of their properties are studied.

II. PRELIMINARIES

Definition: 2.1.

A subsetAof a topological space (X, τ) is called

i) a preopen set[13]if$A \subseteq int(cl(A))$ and a preclosed set if $cl(int(A)) \subseteq A$,

ii) a semi open set [9] if $A \subseteq cl(int(A))$ and a semiclosed set if $int(cl(A)) \subseteq A$

iii)a semi pre open (orβ-open set[1]) set[2]if$A \subseteq cl(int(cl(A)))$ and a α-closed set if $int(cl(int(A))) \subseteq A$,.

iv) aregular open set[16]if $A = int(cl(A))$ and a regular closed set[21] if $A = cl(int(A))$.

v)a regular semi-open[6] if there is a regular open set U such that $U \subseteq A \subseteq cl(U)$.

Thepre-closure ((resp.sp (orβ)closure,rclosure) of a subset A of X denoted By pcl(A) (resp.spcl(A) (or βcl(A)) and rcl(A)) is defined to be the intersection of allpre-closed sets (resp. sp (orβ)closed sets and r-closed sets) containing A.

Definition: 2.2.

A subsetAof a topological space (X, τ) is called

i) a generalized closed set (briefly g-closed)[10]in X if $cl(A) \subseteq U$ whenever $A \subseteq U$ and U is openin X ,

DOI:10.15680/IJIRSET.2020.0902074

BINARY REGULAR BETA CLOSED SETS AND BINARY REGULAR BETA OPEN SETS IN BINARY TOPOLOGICAL SPACES

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ABSTRACT : **In this paper we introduce binary regular beta closed sets (briefly $^{b}r\beta$-closed sets) and binary regular beta open sets (briefly $^{b}r\beta$-open sets) in binary topological spaces and study some of their properties.**

Keywords **: Binary topological spaces, $r\beta$ -closed sets, $r\beta$ -open sets, $^{b}r\beta$ -closed sets, $^{b}r\beta$ -open sets.**

1. INTRODUCTION

In 2011, S. Nithyanantha Jothi and P.Thangavelu [7, 8, 4] introduced the concept of a binary Topology between two non-empty sets which satisfies certain axioms that are analogous to the axioms of Topology and studied about binary topological spaces in the year 2011 and introduced the concept of generalized binary regular closed sets in binary topological spaces in the year 2016.Also S.Nithyanantha Jothi[9] have defined Semi open sets in Binary Topological spaces and studied some of their properties in 2016. A.Manonmani and S.Jayalakshmi [5] introduced $r\beta$ closed sets and $r\beta$ open sets in topological spaces. In this paper, $^{b}r\beta$ closed sets and $^{b}r\beta$ open sets in binary topological spaces are introduced and their basic properties are studied. Throughout this paper, $\wp(X)$ and $\wp(Y)$ denotes the power set of X and Y respectively. Also binary closure of (A,B) and binary interior of (A,B) are denoted by b-cl(A,B) and b-int(A,B) respectively. For basic definitions and results of a topological space, the reader may refer Engelking [3].

2. PRELIMINARIES

Let X and Y be any two nonempty sets. A binary topology[7] from X to Y is a binary structure $\mathcal{M} \subseteq \wp(X)\times\wp(Y)$ that satisfies the axioms namely (i) $(\emptyset,\emptyset) \in \mathcal{M}$ and $(X,Y)\in \mathcal{M}$, (ii) $(A_1 \cap A_2 , B_1 \cap B_2)\in \mathcal{M}$ whenever $(A_1, B_1) \in \mathcal{M}$ and $(A_2, B_2) \in \mathcal{M}$, and (iii) If $\{(A_\alpha, B_\alpha): \alpha\in\Delta\}$ is a family of members of $\mathcal{M}$, then $(\cup_{\alpha\in\Delta} A_\alpha , \cup_{\alpha\in\Delta} B_\alpha) \in \mathcal{M}$. If $\mathcal{M}$ is a binary topology from X to Y then the triplet (X, Y, $\mathcal{M}$) is called a binary topological space and the members of $\mathcal{M}$ are called the binary open subsets of the binary topological space (X,Y, $\mathcal{M}$). The elements of X×Y are called the binary points of the binary topological space (X, Y, $\mathcal{M}$). If Y=X then $\mathcal{M}$ is called a binary topology on X in which case we write (X, $\mathcal{M}$) as a binary topological space.

Definition 2.1[7]:

Let X and Y be any two non empty sets and let (A, B) and (C, D) $\in \wp(X) \times \wp(Y)$. We say that (A, B) $\subseteq$ (C, D) if A $\subseteq$ C and B $\subseteq$ D.

Definition 2.2 [7]:

Let X and Y be any two nonempty sets and let (A, B) and (C, D) $\in \wp(X) \times\wp(Y)$. We say that: (A, B) $\not\subset$ (C, D) if one of the following holds:

(i) A$\subseteq$C and B $\not\subset$ D (ii) A $\not\subset$ C and B $\subseteq$D (iii) A $\not\subset$ C and B$\not\subset$ D.

Definition 2.3[7]:

Let (X, Y, $\mathcal{M}$) be a binary topological space and A $\subseteq$ X, B $\subseteq$Y. Then (A, B) is called binary closed in (X, Y, $\mathcal{M}$) if (X- A, Y- B) $\in \mathcal{M}$.

Definition 2.3 [7]:

Let (X, Y, $\mathcal{M}$) be a binary topological space and (A,B) $\subseteq$ (X,Y). Let $(A, B)^{1\bullet} = \cap\{ A_\alpha : (A_\alpha ,B_\alpha)$ is binary closed and (A, B) $\subseteq(A_\alpha, B_\alpha)\}$ and $(A, B)^{2\bullet} = \cap\{ B_\alpha: (A_\alpha, B_\alpha)$ is binary closed and (A,B) $\subseteq (A_\alpha,B_\alpha)\}$. Then the ordered pair $((A, B)^{1\bullet} , (A, B)^{2\bullet})$ is called the binary closure of (A, B), denoted by b-*cl*(A, B) in the binary space (X, Y, $\mathcal{M}$) where (A, B) $\subseteq$ (X, Y). Here it is to be noted that $((A, B)^{1\bullet}, (A, B)^{2\bullet})$ is binary closed and (A, B) $\subseteq ((A, B)^{1\bullet}, (A, B)^{2\bullet})$.

Definition 2.4 [7]:

Let (X, Y, $\mathcal{M}$) be a binary topological space and (A,B) $\subseteq$ (X,Y). Let $(A, B)^{1^\circ}= \cup\{A_\alpha:$ (A_α,B_α) is binary open and $(A_\alpha, B_\alpha) \subseteq (A, B)\}$and $(A, B)^{2^\circ} = \cup\{B_\alpha : (A_\alpha, B_\alpha)$ is binary open and $(A_\alpha, B_\alpha) \subseteq (A, B)\}$. Then the ordered pair $((A, B)^{1^\circ}, (A, B)^{2^\circ})$ is called the binary interior of (A, B), denoted by b-*int* (A, B). Here $((A, B)^{1^\circ}, (A, B)^{2^\circ})$ is binary open and (A, B) $\subseteq$ $((A, B)^{1^\circ}, (A, B)^{2^\circ}) \subseteq (A, B)$.

On πg(αg)* – continuous maps and πg(αg)* - irresolute maps in Topological Spaces

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DOI: 10.29322/IJSRP.10.04.2020.p10094
http://dx.doi.org/10.29322/IJSRP.10.04.2020.p10094

Abstract : In this paper, we have introduced the concept of continuous, irresolute and homeomorphism maps of πg(αg)* closed set. Some of the fundamental properties of this set are studied. And their application also given namely, πg(αg)* $-T_{1/2}-$ space.

Keywords : πg(αg)*- closed set, πg(αg)*- continuous map, πg(αg)*-irresolute map, πg(αg)* $-T_{1/2}-$ space

1.Introduction

Levine[**5**] introduced the class of g-closed sets, a super class of closed sets in 1970. Dontchev and Noiri [19] have introduced the concept of πg-closed sets and studied their most fundamental properties in topological spaces. Also, Ekici and Noiri [21] have introduced a generalization of πg-closed sets and πg-open sets. Recently , a new class of πg(αg)*-closed sets in topological spaces introduced and studied by R.Savithiri , A.Manonmani and M.Anandhi [29]. In this paper , we have made a study on πg(αg)*- continuous map, πg(αg)*-irresolute map and πg(αg)*-homeomorphism. Also, Applications of πg(αg)*-closed sets are analyzed.

2.Preliminaries

For a subset H of a space (X,τ), cl(H) and int(H) denote the closure and the interior of H respectively. The class of all closed subsets of a space (X,τ) is denoted by C(X,τ). The smallest closed (resp. α-closed) set containing a subset H of (X,τ) is called the closure (resp. α-closure) of H and is denoted by cl(H) (resp. αcl(H)).

Definition 2.1 : 1) A π open set [21] of X is a finite union of all r-open sets in (X,τ).

2) A subset H of a space X is called α-generalized closed (briefly αg-closed) [13] if αcl(H)⊆U whenever H⊆U and U is open in X.

3) A subset H of a space X is called π- generalized closed set [21] (briefly πg-closed) if cl(H)⊆U whenever H⊆U and U is π-open in (X,τ).

4) A subset H of a space X is called **π-generalized-(αg)* closed set [29] (briefly πg(αg)*- closed set)** if αgcl(H)⊆U, whenever H⊆U and U is π open in X.

Diagram-I

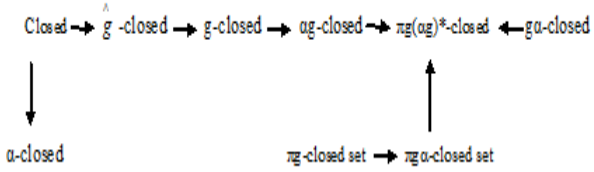

Diagram-I is obvious (see related papers).

IJIRSET

ISSN(Online): 2319-8753
ISSN (Print): 2347-6710

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 9, Issue 2, February 2020

On Pre Generalized Regular Beta (PGRB) Closed Sets in Topological Spaces

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ABSTRACT: The scope of this paper is to introducea new type of closed sets called pre generalized regular beta (brieflypgrβ-closed sets) closed setsin a Topological spaces.Some propertiesof pgrβclosed set in topological spaces are investigated in this connection and they are compared with the existing closed sets. Some properties of pgrβ- open set are also discussed. Further pgrβ-continuity, pgrβ- irresoluteness and pgrβ- $T_{1/2}$ space are introduced.

KEYWORDS: rβ open, pre-closure, pgrβ-closed sets, pgrβ- continuous function, pgrβ- irresolute,pgrβ- $T_{1/2}$ space

I. INTRODUCTION

N. Levine [10] introduced the concept of generalized closed sets in general topology as a generalization of closed sets in a Topological space in the year 1970. M.H. Stone [16] introduced regular open sets in a Topological space. A.S .Mashour ,M. E. Abd El-Monsef, S. N. El-Deep and R. A. Mahmoud [13] introducedpre continuityin Topological spaces in the year 1982 and also M. E. Abd El-Monsef, S. N. El-Deep and R. A. Mahmoud [1]studied β-open sets and β-closed sets in 1983.D. Andrijevic [2]introduced Semi-preopen sets in 1986 which is equivalent to β open sets introduced byM. E. Abd.El-Monsef, S. N. El-Deep and R. A. Mahmoud [1]. In this paper, we define and study the properties of pgrβ -closed sets. Throughout this paper, space (X, τ) (or simply X) always means a topological space on which no separation axioms are assumed unless explicitly stated. For a subset A of a space X, cl(A), int(A)and A^C denote the closure of A , the interior of A and compliment of A in X respectively. Moreover in this paper we definepgrβ open sets, pgrβ- continuity,pgrβ-irresoluteness and pgrβ- $T_{1/2}$ space and few of their properties are studied.

II. PRELIMINARIES

Definition: 2.1.

A subsetAof a topological space (X, τ) is called

i) a preopen set[13]if$A \subseteq int(cl(A))$ and a preclosed set if $cl(int(A)) \subseteq A$,

ii) a semi open set [9] if $A \subseteq cl(int(A))$ and a semiclosed set if $int(cl(A)) \subseteq A$

iii)a semi pre open (orβ-open set[1]) set[2]if$A \subseteq cl(int(cl(A)))$ and a α-closed set if $int(cl(int(A))) \subseteq A$,

iv) aregular open set[16]if $A = int(cl(A))$ and a regular closed set[21] if $A = cl(int(A))$.

v)a regular semi-open[6] if there is a regular open set U such that $U \subseteq A \subseteq cl(U)$.

Thepre-closure ((resp.sp (orβ)closure,rclosure) of a subset A of X denoted By pcl(A) (resp.spcl(A) (or βcl(A)) and rcl(A)) is defined to be the intersection of allpre-closed sets (resp. sp (orβ)closed sets and r-closed sets) containing A.

Definition: 2.2.

A subsetAof a topological space (X, τ) is called

i) a generalized closed set (briefly g-closed)[10]in X if $cl(A) \subseteq U$ whenever $A \subseteq U$ and U is openin X ,

DOI:10.15680/IJIRSET.2020.0902074

International Journal of Advanced Science and Technology
Vol. 29, No 02, (2020), pp. 2618 - 2625

On πg*b Closed Sets in Topological Spaces

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Abstract

*In this paper, a new class of sets called πg*b closed sets is introduced and its properties are studied. Further, the notions of πg*b open sets, πg*b continuous and irresolute functions are introduced.*

Keywords : *πg*b closed sets, πg*b open sets, πg*b continuous functions, πg*b irresolute functions.*

1. Introduction

Andrijevic [3] introduced a new class of generalized open sets in a topological space, called b-open sets (γ-open sets in the sense of Ekici et.al). D.Veerakumar[19] introduced the notion of g*-closed sets. Sreeja and C. Janaki[18] introduced πgb- closed sets in topological spaces. Dontchev and Noiri [8] introduced the notion of πg- closed sets. In this paper, we study the notion of πg*b closed sets and obtain its characterisations .We also characterize πg*b open sets. Finally the notion of πg*b continuous and πg*b irresolute functions are discussed.

2. Preliminaries

Throughout this paper (X, τ), (Y, σ) and (Z, η) represent non-empty topological spaces on which no separation axioms are assumed unless otherwise mentioned. For a subset A of a space (X, τ), cl(A) and int(A) denote the closure of A and interior of A respectively. (X, τ) will be replaced by X if there is no chance of confusion.

Let us recall the following definitions which we shall require later.

Definition 2.1 : A subset A of a space (X, τ) is called

1) a pre- open set[13] if $A \subset int(cl(A))$ and a α- closed if $cl(int(A)) \subset A$
2) a semi-open[11] set if $A \subset cl(int(A))$ and a semi-closed set if $int(cl(A)) \subset A$
3) a α- open set[14] if $A \subset int(cl(int(A)))$ and a α- closed if $cl(int(cl(A))) \subset A$
4) semi-preopen set[2] if $A \subset cl(int(cl(A)))$ and a semi-closed set if $int(cl(int(A))) \subset A$
5) a regular open set if $A = int(cl(A))$ and a regular closed if $A = cl(int(A))$
6) b- open set[3] if $A \subset cl(int(A)) \cup int(cl(A))$ and b-closed if $int(cl(A)) \cap cl(int(A)) \subset A$
7) π-open[8] set if A is a finite union of regular open sets.

The complement of a π-open set is called a π-closed set. The intersection of all b-closed sets of X containing A is called the b-closure of A and is denoted by bcl (A). The union of all b-open sets of X contained in A is called b-interior of A and is denoted by bint(A). The family of all b-open (resp. α-open, semi-open, preopen, semi-preopen, b-closed) subsets of a space X is denoted by bO(X) (resp. αO(X), SO(X), PO(X), βO(X), bC(X)).

ISSN: 2005-4238 IJAS

International Journal of Mathematics Trends and Technology (IJMTT) – Volume 66 Issue 5 – May 2020

On πg*b – Continuous Functions

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Abstract : *The aim of this paper is to characterize πg*b-closure and πg*b-interior, πg*b-continuous functions. Further the concept of almost πg*b-continuous and their properties are discussed.*

Key words: *πg*b-cl(A), πg*b-int(A), πg*b-continuous and almost πg*b-continuous.*

I. Introduction

Levine [8] introduced the concept of generalized closed sets in topological spaces. Andrijevic[1] introduced the concept of generalized open sets called b-open sets. Since then many authors have contributed to the study of generalized b-closed sets. In 1968 Zaitsev [19] defined π-closed sets. Dontchev and Noiri [4] introduced the notion of πg-closed sets. Veerakumar[17] introduced the notion of g*-closed sets. Sreeja and C.Janaki[13] introduced the concept of πgb-closed sets and πgb-continuity in topological spaces.

Hussain(1966) [6], M.K.Singal and A.R. Singal(1968) introduced the concept of almost continuity in topological spaces. Recently K.Geethapadmini and C.Janaki [5] introduced and studied the properties of πg*b-closed sets in topological spaces. The purpose of this paper is to study πg*b-closure, πg*b-interior, πg*b-continuous functions and almost πg*b-continuous functions and some of its basic properties.

II. Preliminaries

Throughout this paper (X,τ) and (Y,σ) represents topological spaces on which no separation axioms are discussed. (X,τ) will be replaced by X if there is no chance of confusion.

Definition 2.1 : A subset A of a topological space X is said to be

1) a α- closed set [10]if $cl(int(cl(A))) \subset A$
2) a pre-closed set [9] if $cl(int(A)) \subset A$
3) a regular closed set[11] if $A = cl(int(A))$
4) b-closed set[1] if $int(cl(A)) \cap cl(int(A)) \subset A$
5) π-open [19] set if A is a finite union of regular open sets.

Definition 2.2 : A subset A of a space (X, τ) is called

1) a generalized closed (briefly g-closed) [8] if $cl(A) \subset U$ whenever $A \subset U$ and U is open.
2) a generalized * closed (briefly g*-closed)[17] if $cl(A) \subset U$ whenever $A \subset U$ and U is g- open.
3) a generalized *b-closed (briefly g*b-closed)[18] if $bcl(A) \subset U$ whenever $A \subset U$ and U is g-open.
4) πg- closed[4] if $cl(A) \subset U$ whenever $A \subset U$ and U π- open.
5) πgp- closed[12] if $pcl(A) \subset U$ whenever $A \subset U$ and U π- open.
6) πgα- closed[14] if $\alpha cl(A) \subset U$ whenever $A \subset U$ and U π- open.
7) πgs -closed[2] if $scl(A) \subset U$ whenever $A \subset U$ and U π- open.
8) πgb- closed[13] if $bcl(A) \subset U$ whenever $A \subset U$ and U π- open.
9) πg*p- closed[15] if $pcl(A) \subset U$ whenever $A \subset U$ and U πg- open.
10) πg*s- closed[16] if $scl(A) \subset U$ whenever $A \subset U$ and U πg- open.
11) πg*b- closed[5] if $bcl(A) \subset U$ whenever $A \subset U$ and U πg- open.

Definition 2.3 : A function $f : (X, \tau) \to (Y, \sigma)$ is called continuous (resp. α- continuous, pre- continuous, b-continuous, g*b- continuous, πgb- continuous, πg*p- continuous, πg*s- continuous, πg*b- continuous) if $f^{-1}(V)$ is closed (resp. α-closed, pre-closed, b-closed, g*b-closed, πgb-closed, πg*p-closed, πg*s- closed, πg*b-closed) in (X, τ) for every closed set V in (Y, σ).

JES
Journal of Engineering Sciences

Vol 11, Issue 1, JAN/2020
ISSN NO:0377-9254

STRUCTURAL AND ELECTROCHEMICAL PERFORMANCE OF CITRIC ACID CARBON COATED ASSISTED LITHIUM IRON PHOSPHATE/GRAPHENE OXIDE CELL FOR LITHIUM ION BATTERY APPLICATIONS

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Abstract- **To investigate and enhance the efficiency of the $LiFePO_4$/C samplewith graphene oxide anode in the form of pouch type cell. XRD measurement has been performed for $LiFePO_4$/C sample to analyse the structure of the sample. Surface of the $LiFePO_4$/C sample shows with mono-dispersed particles which helps to progress the performance of the $LiFePO_4$/C sample. The average particles size of the sample is 3.5 µm, which has been confirmed by particle size analyser. Impedance and charge/discharge analysis were performed for$LiFePO_4$/C/graphene oxide full cell. $LiFePO_4$/C/graphene oxide sample exhibits the high initial discharge capacity of 121 mAh/g with capacity retention of 84 % after 100charge/discharge cycles. Lithium iron phosphate cathode and graphene oxide anode serves as a good cathode and anode material for Lithium ion battery applications.**

Keywords- **$LiFePO_4$/C, Graphene oxide, Full cell, Lithium ion batteries.**

1. INTRODUCTION

Lithium ion batteries are the most promising candidates in the applications of electric and hybrid vehicles and also it possesses major part in the reduction of greenhouse gas emissions [1]. $LiFePO_4$ is an olivine-type phosphate material which is acting as a good cathode material in rechargeable lithium ion batteries. $LiFePO_4$ has many advantages such as low cost, environmental friendliness and high thermal stability. Moreover, $LiFePO_4$ cathode material exhibit a high theoretical capacity (170 mAh/g) and having the flat discharge voltage at 3.4 V against lithium [2-4]. Eventhough, if the current density increased, then the $LiFePO_4$ may be concerned with capacity loss owing to diffusion-controlled kinetics of the electrochemical mechanism. Two methods are playing an important role to reduce the poor conductivity problem; one is that to moderate the grain size in which reduce the diffusion path distance for electrons and Li^+ ions. In the second case, the coating of carbon with $LiFePO_4$ cathode particles [5-7] or some other dopants [8]. Coating with carbon particles can work as interaction bridges and nucleation sites for the production of $LiFePO_4$ [9]. By covering the surface of $LiFePO_4$ particles with carbon has been used to refine the electrochemical efficiency of $LiFePO_4$ [10]. High temperature sintering for a protracted period is vital strategy to achieve the high conductive carbon. At high temperature, no surviving hydroxyl or carbonyl is present on the surface of the carbon and also there is no chemical bonds on surface like oxygen bridge bonds between carbon and $LiFePO_4$ [11]. Controlling the size of the carbon treated $LiFePO_4$ is beneficial factor in the electrochemical performance. Consequently, when including the high surface area carbon reduces the tap density and the energy density [12-14]. There are several carbon additives are used such as glucose [15], ethylene glycol [16], ascorbic acid [17,18] etc., to improve the $LiFePO_4$ cathode material behaviour. Among them, citric acid was employed for producing high efficiency cathode material because of low cost. Different synthesis techniques are available for preparing $LiFePO_4$ including solid-state reactions and solution methods [19-23]. Solid state method is an easy preparation method with low cost and high yield. Zhouguang Lu et al [24] have developed citric acid and ammonium assisted olivine $LiFePO_4$ particles and they accomplished a proficient surface morphology. Moreover, commercially used anode material for lithium ion batteries is graphite owing to its structural stability when cycling and flat potential profile. Inspiteof good electrochemical performance of graphite it exhibits a small capacity of 372 mAh/g [25]. However, graphene exhibits the high capacity which is

Insitu carbon coated $NaFeO_2$ as a positive electrode for Sodium Ion batteries.

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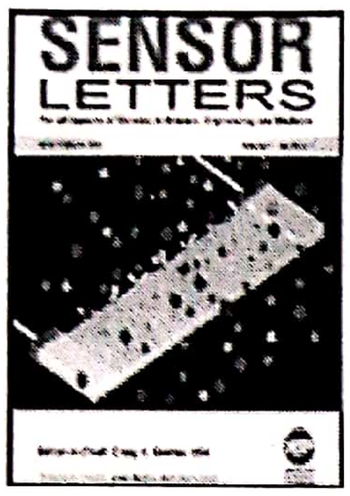
Abstract : Due to unique behavior, the Na ion batteries have become a promising candidate for energy storage applications and also the abundant of Sodium Sources on the earth crust. With this point of view, in the present work we report , Insitu carbon coated $NaFeO_2$ gel assisted combustion method. The XRD and Rietveld refinement confirms the phase purity of the prepared material. The SEM images show that the carbon was coated on the outer surface of the cathode material. The carbon enhances the performances of the electrode material and greatly reduces the side reactions occur at the electrode surface. The electrochemical performance was analyzed, the electrode delivers the capacity of about 125 mA h/g and 72 mA h/g at 50 and 3200 A/g current densities and the capacity retention is about 80-90% after 250 Cycles. The results show that cost effective and highly performed electrode for sodium ion Batteries.

IndexTerms - : **Na ion batteries, Insitu, carbon coated, Rietveld, gel assisted.**

I. INTRODUCTION

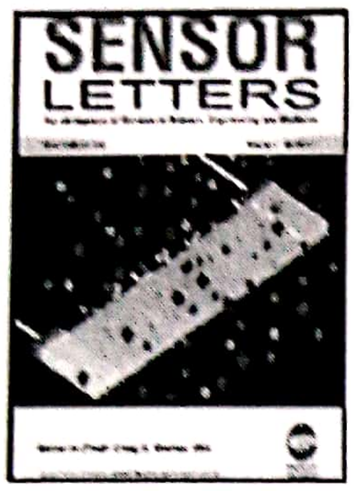
With the increasing interest on energy storage applications and the demand on Li source, the great focus was given towards Na ion batteries. Compare to Lithium ion batteries, the cost of Na ion batteries are low because of abundant of Na source on the earth's crust [1-5]. Recently the introduction of hybrid vehicles and large scale electric power storage systems, the great interest was focused on Na ion for large scale energy storage applications [6-8]. As earlier in demonstrating the performance of the full cell which includes sodium intercalation guests in a layered sodium transition metal oxide as the positive electrode and carbon as the negative electrode without using Na metal [8-11]. The main issues of Na ion batteries are the volumetric density and reversible capacity is to be rectified and Na ion batteries have low operating voltages [12]. For improving the performance of the electrode materials, the carbon was coated on the electrode surface , the carbon coated greatly increases the performance of the electrode by increasing the stability by reducing the side reactions occurs on the surface of the electrode [13-14]. Various elements was used as carbon like glucose, citric acid , Multi-walled carbon nanotubes , glycine and oxides like Al_2O_3 , ZnO , SnO etc are effectively increases the stability of the electrode material.

Layered transition metal oxides, such as lithium cobalt oxide and Lithium magnesium cobalt oxide are generally used as positive electrode for LIBs. Delmas [15] notation says that the structure Li



Acoustical Studies on Beryllium Oxide/Silicone Oil Nanofluids

Authors: Britto, T. Merita Anto; Jeevaraj, A. Kingson Solomon
Source: Sensor Letters, Volume 18, Number 1, January 2020, pp. 69-73(5)
Publisher: American Scientific Publishers
DOI: https://doi.org/10.1166/sl.2020.4191



Enhanced Thermal Conductivity of Carboxyl (–COOH) Functionalized Multi-Walled Carbon Nanotube (MWCNT)-Silicone Oil Based Nanofluids

Authors: Premalatha, M.; Preetha, N.; Padmavathi, S.; Jeevaraj, A. Kingson Solomon
Source: Sensor Letters, Volume 18, Number 1, January 2020, pp. 52-54(3)
Publisher: American Scientific Publishers
DOI: https://doi.org/10.1166/sl.2020.4188

International Journal of Science and Research (IJSR)
ISSN: 2319-7064
ResearchGate Impact Factor (2018): 0.28 | SJIF (2019): 7.583

Continuous Fixed-Bed Column Study and Adsorption Modeling for Cadmium Removal

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Abstract: ***Adsorption of cadmium ions from aqueous solutions using granular activated carbon prepared from Phosphoric acid treated tamarind nuts (seeds) in fixed bed column was investigated. Activated carbon granules of 300 to 800µm particle size were chosen for all studies. The effect of metal ion concentration (50-200 mg/L), feed flow rate (5-15 mL/min) and activated carbon bed height (10-20 cm) on the breakthrough characteristics of the adsorption process were determined. The results showed that the adsorption efficiency increased with increase in influent concentration, bed depth and decreased with increase in flow rate. Column adsorption data were fitted to three well established fixed bed adsorption models namely Adam's-Bohart, Thomas and Yoon-Nelson models. The results fitted well to Thomas and Yoon-Nelson models with coefficients of correlation $R^2 \geq 0.9$ at different working conditions. Phosphorylated tamarind nut carbon (PTNC) was proved to be suitable for adsorption of cadmium from aqueous solutions using fixed-bed adsorption column.***

Keywords: Phosphorylated Tamarind seed Carbon, Cadmium adsorption, fixed bed modeling

1. Introduction

Industrial growth and technological advancements have introduced diverse pollutants in surface and ground water, making it unfit for consumption by human and other living organisms. Pollutants such as heavy metals, organic chemicals and synthetic dyes are of serious concern due to their potential carcinogenic and mutagenic hazards and several ailments. These chemicals in the terrestrial environment clearly pose a significant risk to the quality of soils, plants, natural waters and human health [1,2,3,4].

Heavy metals are detrimental to the environment due to its toxic effect and accumulation throughout the food chain. Cadmium is one of the toxic heavy metals with the greatest potential hazard to humans and the environment. Chronic exposure to elevated levels of cadmium is known to cause renal dysfunction, bone degeneration and liver damage [5]. Because of the toxicity and bioaccumulation, Cd(II) is considered as a priority pollutant by the US Environmental Protection Agency. The permissible limit for Cd(II) as described by WHO is 0.01 mg/dm^3. The major source of Cd(II) release into the environment is through wastewater from electroplating, smelting, paint pigments, batteries, fertilizers, mining and alloy industries [6].

The removal of heavy metal contaminants is one of the most important environmental issues to be solved today. In some circumstances, conventional treatment methods such as ion- exchange, precipitation, filtration, oxidation, reduction, electrochemical recovery, membrane separation and other techniques are either ineffective or uneconomical for the removal of trace amounts of heavy metal ions [7]. However, activated carbon adsorption has been proved to be a competitive and efficient method for the removal of trace amounts of heavy metal ions from aqueous solutions [8].

Batch adsorption experiments provide certain preliminary information such as pH, optimum time, particle size and initial metal concentration for maximum adsorption which could be adopted for fixed bed column studies. In fixed-bed column, the adsorbate is continuously in contact with a given quantity of fresh adsorbent thus providing the required concentration gradients between adsorbent and adsorbate for adsorption. Fixed-bed operations are widely used in pollution control processes such as for the removal of toxic organic compounds by carbon adsorption [9]. The design and theory of fixed-bed adsorption systems focuses on establishing the shape of the breakthrough curve and its velocity through the bed. Breakthrough and bed volumes are usually employed in the evaluation of the performance of a fixed-bed column [10].

Column operations can be designed on the basis of the experimental data collected. Many mathematical models have been developed for the evaluation of efficiency and applicability of the column models for large-scale operations. In designing a column absorption process, it becomes necessary to predict the break-through curve or concentration-time profile and adsorption capacity of the adsorbent for the selected adsorbate under the given set of operating conditions. The objective of this work is to investigate the Phosphorylated tamarind nut carbon (PTNC) a novel material in fixed-bed for the removal of Cd(II) from aqueous solution. In this study the Adam's-Bohart model, Thomas model and Yoon-Nelson model were used to analyse the behavior of PTNC in fixed-bed adsorption of cadmium.

2. Materials and Methods

2.1 Preparation of Activated Carbon

Tamarind nuts (seeds) were collected from agricultural fields of Coimbatore, Tamilnadu, India. The soil and other impurities were removed by washing with distilled water.

Veterinary World, EISSN: 2231-0916
Available at www.veterinaryworld.org/Vol.13/July-2020/19.pdf

RESEARCH ARTICLE
Open Access

Harnessing the antibacterial activity of *Quercus infectoria* and *Phyllanthus emblica* against antibiotic-resistant *Salmonella* Typhi and *Salmonella* Enteritidis of poultry origin

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Received: 21-02-2020, **Accepted:** 18-05-2020, **Published online:** 21-07-2020

doi: www.doi.org/10.14202/vetworld.2020.1388-1396 **How to cite this article:** Nair A, Balasaravanan T, Jadhav S, Mohan V, Kumar C (2020) Harnessing the antibacterial activity of *Quercus infectoria* and *Phyllanthus emblica* against antibiotic-resistant *Salmonella* Typhi and *Salmonella* Enteritidis of poultry origin, *Veterinary World*, 13(7): 1388-1396.

Abstract

Background and Aim: In a scenario of the ineffectiveness of the current drugs against antibiotic-resistant pathogens, the herbal extracts can serve as an alternative remedy. This study appraises the antibacterial potency of *Quercus infectoria* (gall), *Phyllanthus emblica* (fruit) individually and synergistically against antimicrobial-resistant (AMR) *Salmonella* Typhi and *Salmonella* Enteritidis in a time and dose-dependent manner. Further, the antibacterial phytocompounds were identified employing gas chromatography-mass spectrometry (GC-MS).

Materials and Methods: Preliminary antibacterial activity of the plant extracts was assessed using the agar disk diffusion method. *In vitro* evaluations of *Q. infectoria* methanolic extract (QIME) and *P. emblica* methanolic extract (PEME) against *S.* Typhi and *S.* Enteritidis were carried out using plate count method.

Results: QIME and PEME at a dose rate of 50 mg/ml and 25 mg/ml, respectively, had a complete bactericidal effect on AMR *S.* Typhi and *S.* Enteritidis whereas 10 $\log_{10}$ CFU/ml of exponential growth was seen in untreated control groups. At the lower concentrations, QIME and PEME had a significant bacteriostatic effect (3-6 $\log_{10}$ reduction of the test isolates). The synergistic antibacterial effect obtained from the combination of these two plant extracts at 12.5 mg/ml was superior ($p<0.001$) than the individual treatments. Phytochemical profiling indicated the presence of tannins, flavonoids, saponins, and terpenoids in both the plant extracts. GC-MS analysis of QIME and PEME revealed the presence of 16 and 15 antibacterial phytocompounds, respectively. Further 1, 2, 3 Benzenetriol was found as the prominent active principle.

Conclusion: The findings validate that QIME and PEME are potential antibacterial agents against AMR *S.* Typhi, *S.* Enteritidis and can play a promising role in antimicrobial packaging, poultry feed additives and can also serve as a platform for formulating effective phytotherapeutics.

Keywords: antimicrobial-resistant, *Phyllanthus emblica*, phytochemicals, gas chromatography-mass spectrometry, *Quercus infectoria*, *Salmonella*.

Introduction

Salmonella has coevolved and ensured continuous survival within humans by means of challenging the antibiotic regime and replicating tactfully in new hosts. *Salmonella* is one of the major contributors to the global public health burden with the highest incidence of 40% infection in infants and children under 5 years of age [1]. In India, the typhoidal and non-typhoidal form of salmonellosis is endemic and causes substantial morbidity and mortality in both pediatric and adult populations [2]. It is estimated that the incidence of culture-confirmed typhoid fever in India is 377/100,000 population per year [3] whereas, such estimates are lacking for non-typhoidal *Salmonella* [4]. The antimicrobial resistance (AMR) has been acknowledged as one of the primary threats to global health, food security, and socio-economic development worldwide. Earlier investigations have reported an increase in multidrug resistance among *Salmonella* Typhi strains in India [3]. Treatment success rates using antibiotics against *Salmonella* infections remain alarmingly poor with relapses, reinfections, and chronic carriages worsening the situation [5]. The indiscriminate use of antibiotics in clinical practices and food industry as growth promoters in livestock feed is the prime stimulus to elicit a bacterial adaptation response causing AMR. Recently, retail chicken meat has emerged, as a potential source of antibiotic-resistant *Salmonella* in the food chain [6]. Hence, any prophylactic measure to curb salmonellosis in humans must take into account the role of poultry in the dissemination of AMR *Salmonella*.

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.177
Volume 8 Issue II Feb 2020- Available at www.ijraset.com

A Study on Brand Preference and Factors Considered in Selection of Branded Beverages in Tirupur

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Abstract: ***Beverage is a drink artificially prepared for an agreeable flavor. The word "Beverage" was derived from the Latin word "bever" meaning rest from work. It fulfills basic need of man. The beverage industry in India constitutes of around USD 230 million among the USD 65 billion food processing industry. The major sector in beverage industry in India are tea and coffee which are not only sold heavily in the domestic market but also exported to a range of leading overseas market. A drink or beverage is a liquid specially prepared for human consumption. Apart from being a basic need, beverages form part of the culture of human society. The main aim of the study is to know brand preferences among the respondents for beverages and also find out the level of importance of the factors considered in selection of particular brand of beverages. Descriptive statistics research is used for the study. The sample size of 300 respondents was selected based on convenience sampling. The statistical tools used in this study are Simple percentage analysis, Rank analysis, ANOVA and T – Test. The major findings of the study is the most preferred brand of Tea is 3 Roses and Coffee is Bru and Quality and taste of the beverages are considered most important factors while purchasing a brand.***

Keywords: Beverages, Brand Preference, Purchase Decision Factors, Tea, Coffee.

I. INTRODUCTION

India's FMCG sector is the fourth largest sector in the economy and creates employment for more than three million people in downstream activities. Fast Moving Consumer Goods (FMCG) - alternatively known as consumer packaged goods (CPG). Its principal constituents are Household Care, Personal Care and Food & Beverages. The total FMCG market is in excess of Rs. 85,000 Crores. It is currently growing at double digit growth rate and is expected to maintain a high growth rate. The beverage market is worth $55 billion worldwide. In order to be successful in the market place, one has to think in terms of health innovation, flavor innovation, ingredient innovation and suitability to specific age groups. A drink or beverage is a liquid specially prepared for human consumption. Apart from being a basic need, beverages form part of the culture of human society. We can categorize beverages mainly into two types such as alcoholic beverages and nonalcoholic beverages. Consumer behavior plays an important part for the success of any organization. Consumer behavior has been very important to all branded companies in all over the world. The research about the consumer behavior shows that what are the needs and wants of consumer, how consumer think, how consumer feel and select the branded products. The behavior of the consumers remains not same in all the time. The consumers behavior change with the passage of time in future. The behavior of consumer is temporary for short time not permanently. The factors influences the consumer behavior are culture, family, social, society, age groups, friends, environment and psychological factors. Brand preferences represent a fundamental step in understanding consumer choices. Despite the existence of some studies investigating how brand preference is built and changed, most of them focus on examining factors from consumer behavior perspective or advertising perspective. Now this study is fully related with non- alcoholic beverages such as Tea and Coffee.

Tea is one of the most popular and widely consumed hot beverages worldwide. More than 30 countries grow tea. Tea is the most widely consumed beverage in the country. India and China are the largest producer and consumers of tea. These two countries together account for half of world's tea production. However they export less than a quarter of their production. due to largest domestic demand. Tea is a part and parcel of Indian social, economic and cultural life. Indians cannot think of a day without their favorite cup of tea. It is the most popular non-intoxicating beverage in the world enjoyed by the rich and poor alike. Being most popular consumed beverage, in many cultures tea is consumed at elevated social events.Coffee is the most popular beverage in the world. However, Coffee is a second option for beverage choice after tea, which is the traditional beverage of this nation. Coffee plants are cultivated in more than 70 countries. Coffee berries are picked, processed and dried to yield the seeds inside. The seeds are roasted to varying degrees, depending on the desired flavor, before being ground and brewed to create coffee. This study will focus on the brand of coffee and tea preferred by the respondents and the level of importance given for the factors considered in selection of a particular brand of beverages.

ORIGINAL RESEARCH PAPER

Commerce

KEY WORDS:

A STUDY ON CUSTOMER SATISFACTION TOWARDS SMARTPHONE USERS

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ABSTRACT

Smart phones are getting smarter each day. In view of the rapid development, multi-functionality, ubiquity and connectivity of mobile devices, it offers a new and potentially powerful market for the Smartphone users. The objective of the study is to identify the brand of Smartphone preferred by the respondents, to analyse the satisfaction of the consumers towards Smartphone usage and to compare the satisfaction score among selected demographic variables. The sample size is 200 respondents. The statistical tools used in this study are Simple percentage, Descriptive analysis, Rank analysis, ANOVA, T test and Regression analysis. The concept of customer satisfaction has attached much attention in recent years. Organizations that try to analyze this concept should begin with an understanding of various customer satisfaction models. They are living in world which is totally networked with the communication. With the advent of fast technology, the world has become a global village. With the click of small buttons on a computer one can easily get any information according to user needs and choice. Recent developments in mobile technologies have produced a new kind of device, a programmable mobile phone, the smart phone. Generally, smart phone users can program any application which is customized for needs. Furthermore, they can share those applications in online market. Therefore, smart phone and its application are now most popular keywords in mobile technology. Hence, it is vital to analyse the customer satisfaction among Smartphone users and make necessary changes in the technology in order to with stand in the competitive market. The findings state that the consumers are more satisfied with user friendliness, picture and sound quality of smartphones but not satisfied with after sales service price of current brand of Smartphone has an influence over satisfaction. Samsung brand is mostly preferred by the respondents.

INTRODUCTION

A few years ago, people only sent (received) calls and messages using cellular phones. However, with the application of new technology to cell-phones, people can see movies, listen to music and Watch TV programs anywhere anytime. In addition, as Wi Fi (Wireless Fidelity) functions embedded in smartphones are introduced, users can use the Internet on the move. Using such phones, people can connect to the Internet free at Wi-Fi zones, check their emails and manage social networking sites. As many functions and new features are embedded, users derive enjoyment from using them. However, these Smart phones also cause users stress because they are difficult to use and users do not know how to deal with phone-related problems. As a Smartphone's power and capability enhance, these problems are expected to increase. In addition, this stress decreases a Smartphone user's satisfaction. The consumer buying a variety of smartphones which satisfy his wants and they are always influenced by his purchasing activities by some considerations which lead him to select a particular brand or a particular operating systems in preferred to others. Consumers mostly preferred Smart phones.

OBJECTIVES OF THE STUDY

1. To identify the brand of Smartphone preferred by the respondents
2. To analyse the satisfaction of the consumers towards Smartphone usage
3. To compare the satisfaction score among selected demographic variables

RESEARCH METHODOLOGY

Sample size is 200 respondents drawn on random sampling basis. The data collected is tabulated, analyzed and interpreted by applying the following statistical tools; Simple percentage, Descriptive analysis, Rank analysis, ANOVA, T test and Regression analysis.

REVIEW OF LITERATURE

1. **Oliver (1987)** defined Customer satisfaction as an outcome of a purchase/usage experience would appear to be an important variable in the chain of purchase experience linking product selection with other post purchase phenomena including favorable word-of-mouth and customer loyalty.
2. **Terblanche And Boshoff(2001)** assessed the influence of certain factors on customer's level of satisfaction in their study. It has been found that service quality, product quality and product varieties are the three dimensions that influence customer satisfaction.
3. **Ching-chow Yang(2003)** stated that customer satisfaction measurement highlights the strength and the area of improvement in the quality of product. Continuous improvement is considered one of the important quality activities for a firm to pursue the best quality for its products. Through the continuous improvement actions, the enterprise can increase customer satisfaction and raise profits.
4. **Butt and Run (2008)** determined the factors that contributed towards consumer satisfaction in Pakistani mobile cellular services. Customer satisfaction of cellular phone users in Pakistan consisted of four factors including price, transmission quality, usage ease and service support.
5. **Shakir Hafeez and S.A.F. Hasnu (2010)** in their article titled, "Customer satisfaction for cellular Phones in Pakistan: A Case Study of Mobil ink" have studied that Customer satisfaction is a crucial element for the success of all businesses. One of the biggest challenges for a market is how to satisfy and retain the customers. Overall customer satisfaction and customer loyalty is comparatively low among the consumers. The customer loyalty in mobile sector is relatively low because it is an emerging industry. New players are entering in this market and customers are more fascinated to try the new service providers.
6. **S.Jamuna and Jegadesh Kannan (2010)** "Conducted a Study on Customer Satisfaction towards BSNL in Madurai City". The study mainly concentrates on general Price level, quality and Overall satisfaction about BSNL

Submitted : 15th August, 2019 | Revised : 19th September, 2019 | Accepted : 29th December, 2019 | Publication : 15th February, 2020

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SATISFACTION LEVEL AND PROBLEMS FACED BY MEDICLAIM POLICYHOLDERS AGAINST SELECTED PRIVATE HEALTH INSURERS

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Abstract

The development of human resource depends on health of the citizen. It is a universally accepted phenomenon. Good health, when protected, not only adds benefit to an individual but also aids the well-being of the family, the community, the society and the country as a whole. People prefer not only the basic amenities, but also social goals, education and health care. Today, expenditure on healthcare is highly increasing in price all around the world. Therefore, it is absolutely necessary to ensure that one should be adequately equipped to meet the medical expenses. The objectives of the study is to determine the variables which influence the policyholder's satisfaction on service quality of selected private health insurance providers and to analyze the major problems faced by the policyholders with respect to selected private health insurance providers. The statistical tools used such as (i) Garrett Ranking (ii) Friedman's Two-way ANOVA (iii) Correlation-Spearman Rank Correlation. It is concluded that information about new policies and location of the company are the main criterion for satisfaction level of policyholders relating to the insurers.

Keywords: *Health Insurance, Health Insurance Policies, Service Quality, Motivating factors, Problems.*

Introduction

Health insurance policy gives access to the best medical care and treatment while being monetarily sheltered. In case of a health crisis, mediclaim policy guarantees amity of mind and ensures that are confined from medical expenses while receiving the best treatment in a hospital at the policyholders option. Improvement in health status is essential for the enhancement of human capabilities. Illness is a significant basis of worsening to human health out of all the risk faced by poor households; health risks cause the greatest risk to their lives and livelihoods. Policyholders can avail numerous benefits like pre and post hospitalization expenses, cashless treatment, room rent, ambulance charges, and much more.

ISSN: 2319-7064
ResearchGate Impact Factor (2018): 0.28 | SJIF (2019): 7.583

A Study on Brand Loyalty for Coffee and Tea Beverages in Tirupur City

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Abstract: *Food and beverage industry are one of the major revenues producing departments in hospitality industry. The beverages industry customer base is probably widestand deepest base in the world.The beverages sector in India has undergone significant transformation in the past 15 years. The central thrust of the marketing activities of a firm is often viewed in terms of development, maintenance, or enhancement of customers' loyalty toward its products or services. Brand loyalty, is a measure of the attachment that a customer has to a brand. Essentially, brand loyalty refers to a consumer's constant repurchase of a favored brand. The main aim of the study is to know the brand loyalty among the respondents for beverages. Descriptive statistics research is used for the study. The sample size of 300 respondents was selected based on convenience sampling method. The statistical tools used in this study are Simple percentage analysis, Rank analysis, ANOVA and T – Test. The major findings of the study is the most preferred brand of Tea is 3 Roses and Coffee is Bru and Reasonably priced and quality of the beverages are considered most important factors while purchasing the same brand of beverages.*

Keywords: Beverages, Brand Loyalty, Brand Loyalty Factors, Tea, Coffee

1. Introduction

Fast Moving Consumer Goods (FMCG) or Consumer Packaged Goods (CPG) is products that are sold quickly and at relatively low price. Though the absolute profit made on FMCG products is relatively small, they generally sell in large quantities; the cumulative profit on such product can be substantial. FMCG have a short shelf life, either as a result of high consumer demand or because of the product deteriorate rapidly. Consumer keep limited inventory of these products and prefer to purchase them frequently, as and when required. Consumers spend little time on the purchase decision. FMCG companies in India have always enjoyed a vast potential market because of the large population of the country. The improved economic situation of both the rural and urban consumers has helped FMCG companies to further expand their market to the hinterlands of the country. The Indian FMCG companies enjoy a diverse industrial base and offer a variety of products to consumers, namely toiletries, personal care products, soaps, detergents, oral hygiene, packaged foods, beverages, grooming products, healthcare products, plastic products, bulbs, batteries, glassware etc.

Beverage industry is perhaps broader and deeper base in the world in particular among the younger generation. The beverage industry in India constitutes of around USD 230 million among the USD 65 billion food processing industry. The major sectors in beverage industry in India are tea and coffee which are not only sold heavily in the domestic market but are also exported to a range of leading overseas markets. Half of the tea and coffee products are available in unpacked or loose form. Among the hot beverages manufactured in India, tea is the most dominant beverage that is ruling both the domestic and international market even today. The supply of tea and coffee is insurmountable in the Indian beverage industry.Brand loyalty, is a measure of the attachment that a customer has to a brand. Essentially, brand loyalty refers to a consumer's consistent repurchase of a favored brand. Brand loyalty reflects how likely a customer will be to switch to another brand, especially when that brand makes a change, either in price or product features. Brand loyalty refers to a biased behavioral response to choose one brand out of a set of alternative brands. Now this study is fully related with non – alcoholic beverages such as Tea and Coffee.

In India, chai (Tea) is more than just a cup of tea to start the day. It is an integral part of the rhythm of life. In addition tea also includes herbs, flavors and types. There are numerous types of tea such as green tea, black tea, tapal tea, mint tea, white tea etc. Many health benefits are said to be gained due to tea. One such is tea with strong anti-oxidants properties. It also contains other health benefits such as weight loss, better digestion problem, concentration, relaxation and many more, depending upon the type the health benefits also varies. Coffee is the world's second most traded commodity, with about half a trillion cups drank per year. It has been used not only for brewing cups of coffee, but also it provides caffeine for beverages, pharmaceuticals, and cosmetics. There are two main commercially grown beans which are Arabica, accounting for 70% of coffee, and Robusta beans, being far cheaper and easier to grow. While Brazil is perceived as the World leading exporter of coffee, the country also recognized as the largest coffee producing Nation in the world. Furthermore, Brazil has been the highest global producer of coffee beans for over 150 years. This study will focus on the brand of coffee and tea preferred by the respondents and the level of importance given for the factors considered in selection of a particular brand of beverages.

2. Literature Review

1) (Mise et al., 2013)This study sought to establish and compare the loyalty characteristics among the soft drink's consumers in Kenya and India.1312 respondents

ISSN NO: 0022-1945

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A STUDY ON HDFC BANK ON NON-PERFORMING ASSETS MANAGEMENT IN INDIA

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ABSTRACT

Banking in India in the modern sense originated in the last decades of the 18th century. The first banks were Bank of Hindustan (1770-1829) and The General Bank of India, established 1786 and since defunct. The banking sector plays the important role in the development of many industries and also for the entire nation. It is very much important to always analyse the financial performance of the banks in any nation. The banks in India is classified into two major categories, non-scheduled and scheduled banks. Indian banking sector is an important component of Indian financial system. Private sector banks have a very wide network of branches in rural and urban areas. But now a day they have diversified their activities to the emerged fields of operations like merchant banking, leasing and venture capital etc. Due to increased level of competition private banks have been lending aggressively to the customers which in turn increasing the proportion of Non-Performing Assets (Henceforth, NPAs). Non-performing Asset has been an important parameter to analyse of financial performance of banks as it results in decreasing margin and higher provisioning requirements for doubtful debts. In this research paper, secondary data has been fetched out from database of Reserve Bank of India regarding Net NPA ratios of HDFC Bank in order to have a clear picture about financial performance of the bank.

KEY WORDS: NPA, HDFC, MANAGEMNET, ECONOMY, PROFITABILITY

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A STUDY ON CONSUMER PERCEPTION AND IMPORTANCE TO SELECTING ECO-FRIENDLY PACKAGES

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ABSTRACT:

Consumers are changing their perceptions towards the products preferring environment friendly products because there is a growing awareness to protect the environment. Today, consumers are more concerned about environmental changes and their purchasing behavior has changed in this regard. Concern for the environment in buying patterns of consumers who prefer products that support the environment with a growing trend are visible. The aim of the current study is to identify the consumer perception and importance to selecting an eco-friendly package. The present research is applied regarding the aim, and in terms method of data collection is an empirical survey. Using a sample of 60 consumers of selected and studied. Then the required information was gathered using a questionnaire. The results show that the consumer's environment-friendly perception has a positive and significant effect on his sensitivity to

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

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(36)

A PERCEPTION ON USAGE OF DIGITAL PAYMENTS (WITH SPECIAL REFERENCE TO COIMBATORE CITY)

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ABSTRACT

A digital Payment System or Digital payment Processing System is a boon to today's world, thanks to the advancement of Information technology. Digital payments henceforth will be called OPPS made a huge impact by cutting across all the barriers like space, time, language, currencies, etc. OPPS is the heart of any E-commerce system. With the present setting the present study is intended to find the solution for the following objective To analyze the perception of rural population on the digital payments. The research is investigative and qualitative in nature and the primary data has been used in this study. Primary data will be collected using questionnaire technique from the selected companies. The population targeted for this study consisted of respondents who are the rural population using digital payments from the Coimbatore city of Tamilnadu. The city is being divided into five zones as per the administration of the government; east, west, central, north and south zones. The extensive use of plastic cards, online shopping and electronic payments are gathering momentum surpassing the tradition payment system. The initiative of government in providing the high-tech services in coordination with other institutions are motivating consumer to move from cash-based to a cashless system and thus increasing efficiency and decreasing the process costs.

1.1 Introduction

The prehistoric man had produced things like food, clothes and habitat themselves. With the growth of Civilization, commodities were initially bartered / purchased (exchanged) with other commodities and later gold was used for purchasing in olden days. With the introduction of currency trading was enabled to happen across the globe, though each transaction involved many people, process and was time consuming. With the advent of computers and information technology, trading process reached its zenith of development. Within few seconds, products or commodities are purchased from any part of the globe and also shipped anywhere.

A digital Payment System or Digital payment Processing System is a boon to today's world, thanks to the advancement of Information technology. Digital payments henceforth will be called OPPS made a huge impact by cutting across all the barriers like space, time, language, currencies, etc. OPPS is the heart of any E-commerce system. E-commerce Systems made it possible to purchase products or services from any part of the world in a few minutes with various currencies. Any enhancement to digital payments will encourage users by giving more confidence and comfort on one hand and increase the volume of business for merchants on the other. Above all, the payment systems play a major role in a country's monetary policy; financial sector and economic development as they improve macroeconomic management, release funds from the clearing and settlement functions for more productive use; reduce float levels and improve the control of monetary aggregates. Firms in different economic sectors use payment system to transfer funds and to provide competitive financial services.

The cashless transaction and cashless economy has witnessed a phenomenal growth over the last decade. This sharp rise of digital payments has not grown only in the developed countries but also in many of the developing countries. Today most of the market is passing through a transition phase. The presence of cashless transaction can be experienced from each segment of the market like grocery stores, hypermarkets to electronic markets and other advanced market serving products and services. The extensive use of plastic cards, online shopping and electronic payments are gathering momentum surpassing the tradition payment system. The initiative of government in providing the high-tech services in coordination with other institutions are motivating consumer to move from cash-based to a cashless system and thus increasing efficiency and decreasing the process costs. This has led to the idea of a futuristic, cashless society. The consumer motivation is the key driver to develop the cashless society. Presently this is progressing because of the worldwide internet availability with user friendly software and hardware.

A STUDY TO EXLPORE THE NON-PERFORMING ASSETS MANAGEMENT IN SBI BANK, INDIA.

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ABSTRACT

A strong banking sector has been backbone of economy. Banking in India originated in the last decade of the 18th century. Private sector banks occupy a major part of banking in India. Private sector banks have a very wide network of branches in rural and urban areas. But now a day they have diversified their activities to the emerged fields of operations like merchant banking, leasing and venture capital etc. Due to increased level of competition private banks have been lending aggressively to the customers which in turn increasing the proportion of Non-Performing Assets. Banking in India originated in the last decade of the 18th centuryNon-performing Asset has been an important parameter to analyse of financial performance of banks as it results in decreasing margin and higher provisioning requirements for doubtful debts. In this research paper, secondary data has been fetched out from database of Reserve Bank of India regarding Net NPA ratios of SBI Bank in order to have a clear picture about financial performance of the bank.

KEY WORDS: NPA, SBI, MANAGEMNET, ECONOMY, PROFITABILITY

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A SURVEY ON SOLID WASTE SORTING AND CLASSIFICATION TECHNIQUES

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Abstract-Around the world millions of tons of garbage are generated daily. In many countries such amounts of garbage generation pose great threat to environmental health and increase the risk of contaminating the living condition for humans and animals. Presently nations around the world conduct research and explore the possibility of management of garbage collected. Management of waste is a complex work which requires more number of human resources and the cost of managing few tons of garbage become high due to lack of right technology to support. Sorting and processing of waste is complex due to the diversity of materials dumped is large and require many specialized techniques. This paper surveys on waste classification methods and techniques using image processing.

Keywords: image processing, waste classification, data mining, image classification, waste recycling, machine learning

I. INTRODUCTION

The global environment is polluted and affected by large amount of garbage accumulated. The garbage wastes are thrown away in lands and water bodies which contaminates the environment and ground water. Approximately in India, 63 tonnes of municipal waste is generated annually and expected to affect the environment in a large scale if not managed properly. Waste management is a process of identifying, treating and disposal of waste. Technology growth and advancement gives immense opportunity to convert waste into wealth. Waste management targets for managing waste through reuse, recycle, and reduction of waste. The difficulty in solid waste management continues to grow with increasing population and more number of lands are urbanized.

The process of solid waste management starts with sorting of wastes into degradable and non degradable. This sorting of waste require large number of human labors to manually segregate into plastic, glass, paper, food etc. When plastics are separated and the plastics can be recycled to save energy, cost and environment. The cost of waste management is high and requires capital to automate the process where human labors could be reduced. However there are more opportunities to improve waste recycling through creating regulations, allocating funds, improving awareness on waste segregation, improving recycling technology, and reducing the cost of management of waste collection and processing.

Presently the waste sorting is carried out using machines still require high precision is discriminating objects into appropriate categories. The waste objects are fed in a conveyor where the objects are separated manually and by tools. The cost of separating manually becomes high and time consuming with humans and the performance of separating tools depends on the precision of classifying the objects automatically. The classification of each object is presently aided through computer vision and machine learning technology. Data mining is a process of extracting useful information and patterns hidden inside large volume of data. Machine learning is a division of data mining through which algorithms gain the ability to improve their performance through self-learning. Data mining and machine learning algorithms are used in variety of data formats which includes numerical data, signals, multimedia formats, spatial data, sensor data etc.

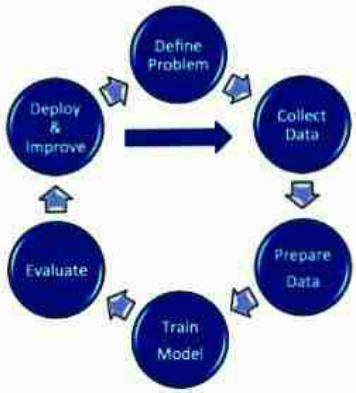

Fig 1 Machine Learning Process

Machine learning algorithms and computer vision technology together forms the image processing unit where digital images are acquired,

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

CROP YIELD PREDICTION IN MACHINE LEARNING MODELS

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Abstract:
The fast pace of urban development minimize the agricultural lands. Owing to poor rainfall and drastic climatic changes farmers often face challenges to sustain cultivation of crops with respect to crop cycle. With growing economic competition and rising population, governmental agencies design long term plans which rarely address the farmer's needs. To meet the global demands agriculturist needs to investigate every opportunity that could improve agricultural production and growth. Whether to expand agricultural lands or to improve the production farmers needs to assess the suitability between land and crops. The investigation of land suitability and crop suitability has attracted many researchers to utilize latest technology such as remote sensing, geographical information systems etc. This paper aims to survey on recent researches on crop and land suitability using data mining techniques.

Keywords: crop suitability, land suitability, data mining, classification, agricultural data mining

I. INTRODUCTION

The growing agricultural demand for rising population and depletion of natural resources urge agriculturist and researchers to develop efficient production methods. In India agriculture contributes to about 60% of livelihood with production of 285 million tons of grains. India is the world's largest producer of rice, wheat, spices and cultivates rice, wheat, tea, sugarcane, cotton, tobacco, pulses and vegetables as a staple food. To meet the growing demands the agriculture industry need to address the problem of sustainable production system. The production and yield percentage largely varies due to various reasons such as changing physical, biological and natural conditions. Also the type of agricultural practices affects the growth and yield of crops. And apart from these, other elements such as water, climate, rainfall, soil type etc affect the growth and yield.

Generally suitability analysis plays a major role in understanding the agricultural needs and addressing the problems associated with production. The suitability analysis can be grouped into land suitability and crop suitability or crop-land suitability. Land suitability is the measure of land fitness to specific crops or methods while crop suitability is the measure of crop fitness suitable to grow in a particular land or region specific to temperature, soil type and moisture. Agriculture was influenced either negatively or positively by change in environmental, geographical, climate and political and the changes directly affects the agricultural production. Weather and climatic variations also affect the agriculture production. Prediction of rainfall and changing soil conditions are required to make decisions on selecting the right crop.

Using data mining and machine learning techniques large volume of data from different sources can be effectively used to make accurate decisions on crop, crop management and prediction services to plan or schedule agriculture practices. Also data mining techniques are the best choice to mine information from the weather data, soil data, temperature, climate data etc. Presently data mining are used for Crop Yield prediction, Disease detection, weed

Survey On Semantic Information Retrieval Techniques In Bigdata

M.Geetha, N.Vimala

Abstract: Big data reflects the exponential increase of everyday data generated by devices connected to a network. Big data is not only enormous amount of data, but also the ways with which it could be stored, processed and analyzed. It is called the 3 Vs of big data, Volume, Variety and Velocity of data that is beyond the compute capacity of conventional data processing facilities. It requires schema-less data processing facilities, which is one way of providing solution to manage such data. This solution also is not complete without imbibing the semantic information inherent in natural language data. Hence, there is a need for extracting information, which is concerned with semantic information instead of considering only the structural information. This brings an interesting concept called semantic relevancy. The semantic information retrieval systems have to adopt according the domain knowledge involved. When dealing with semantic information, it is highly important to construct queries that could fetch semantically relevant documents than a syntactic retrieval. This would help to build systems that are not affected by polysemy and granularity mismatch. Semantic matching achieves exact interlinking of concepts among documents thereby providing a holistic view of the domain. The linking problem can be solved with the help of knowledge graph obtained from semantic interlinking. Therefore, this work reviews the various semantic information retrieval techniques with respect to big data. The pros and cons of various techniques are analysed the suggestions are made to future researchers.

Index Terms: big data, Information Retrieval, Knowledge graph, Semantic Matching, Schema-less processes

1. INTRODUCTION

Big data is defined as the data that has enormous volume, with/without a concrete structure or in some cases semi-structured. Big data is characterized as 3Vs such as, enormous volume of data, multiple varieties of data and the lightning velocity of data being processed. The conventional data analysis frameworks cannot manage all these terabytes and petabytes data, easily. It takes polynomial time to process such data and setting up infrastructures to handle them is costly. The alternate approach to tackle big data depends on schema-less architectures and uncompromising data quality. Normally raw data is tagged with extended metadata and can be used in machine learning models. Artificial Intelligence applications look for patterns among data elements that are frequent to some level. [1] Automation of all the above process requires huge change to the existing architectures and human effort to tackle the large volume of data. Information Retrieval (IR) systems focus on knowledge filtering. It works on the principle of retrieving what the user exactly needs. It completely represents the domain knowledge to satisfy those needs. The efficiency of any IR system is its ability to translate queries into meaningful search operations. The document retrieved should save both the time and energy of the end user. The amount of time taken to fulfil the query shows the performance of the system. In addition, it is the next major issue in IR systems followed by relevancy of retrieved documents. Therefore, in any IR system the user becomes the prime element [2].

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With the advent of social media, IR systems have become more advanced. The amount of natural language data in the World Wide Web is increasing exponentially. To represent the domain knowledge we need semantic Information systems. It helps to connect similar data points and form a network of sensible data. This becomes the knowledge graph. It presents the big picture of state of affairs of the domain of consideration. In order to filter the information overload resulting from explicitly portraying a domain, semantic IR systems are required. Semantic IR systems take the query entered and approach them along with the context. The machine understands the needs of the user from the users' point of view. The end user will prefer this kind of system as it not only reduces the information overload but also provides relevant guidelines for achieving the desired information. This survey reviews the various IR approaches with respect to semantic information systems. The reminder of the paper is organized as Section 2 deals with various existing research works related to IR systems and common approaches to information filtering. Section 3 deals with core survey of semantic IR approaches and their various advancements. Section 4 discusses the pros and cons of techniques reviewed in the previous section. And Section 5 concludes the review with findings of the survey.

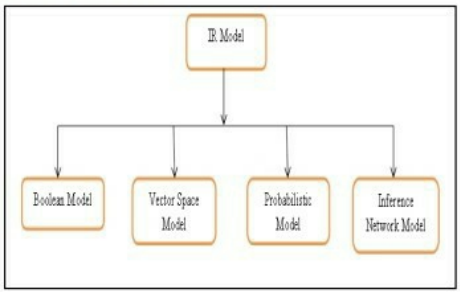

Fig 1: *IR Models*

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A Framework on Classification of Mammogram Images for Breast Cancer Detection using Image Processing with Data Mining Techniques

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Abstract – Breast cancer is genetically and clinically heterogeneous disease. An area of interest for data mining applications is the study of biomedical data which is the combination of image processing with the data mining techniques or algorithm to analyze the hidden data by creating the patterns. This paper deals with the classification of breast cancer within digital mammography images. Digital Image processing facilitates in medical area widely in case of detecting and classifying the mammogram images. Classification of breast cancer in mammogram image is an important step to classify whether the patient is affected by cancerous (malignant) or non-cancerous (benign) tumors. Researchers have been used various algorithms and investigation methods to investigate mammogram images depending on the ultimatum of the disease, status of the disease and the quality of image. The main aim of classification of mammogram images is to select the best treatment. Doctors suggest best treatment for the patient if the result is positive and can avoid from death. Researchers uses so many data mining algorithms used for classification of mammogram images are k-Nearest Neighbor, Nave Bayes, Artificial Neural Network and Support Vector Machine algorithm.

***Keywords*—Benign, Classification, Data Mining Algorithms, Malignant , Mammogram Images.**

1. INTRODUCTION

Mammogram, breast x-ray imaging is an effective, low cost, reliable method in early breast cancer detection. Mammogram images are classified as normal, benign and malignant [3]. Breast cancer is a malignant (cancer) tumor starting with breast cells. A screening mammogram aims to find breast cancer when it's too small to be felt by a woman or her doctor. Cost effectiveness is one of the major requirements for a mass screening program to be successful. The ultimate diagnosis of all types of breast disease depends on a biopsy. In most cases the decision for a biopsy is based on mammography findings. Biopsy results indicate that 65-90% of suspected cancer detected by mammography turned out to be benign [8]. Hence, it would be valuable to expand a computer aided technique for mass classification based on extracted features from the region of interests (ROI) in mammograms. This can reduce the number of unnecessary biopsies in patients with benign disease and thus avoid patients physical and mental suffering, with an added bonus of reducing healthcare costs. Finding breast cancers before they grow and spread greatly improves a woman's chance for successful treatment [3].

A diagnostic mammogram is a breast X-ray examination when a patient shows signs and symptoms of breast disease, or who with earlier mammography findings needs an imaging follow-up [5]. Feature selection and feature extraction [6] are dimension reduction techniques. Feature selection is generally used in breast cancer classification. Feature selection filters redundant and irrelevant features from original data. Feature selection, a data mining pre-pre-processing step selects and extracts valuable information in massive related materials. "It is investigated that

Studies in Indian Place Names
(UGC Care Journal)

ISSN: 2394-3114
Vol-40-Issue-70-March -2020

Detection of Breast Lesion Using Improved GLCM Feature Based Extraction in Mammogram Images

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ABSTRACT

A classic mammogram image processing method commonly illustrates of mammogram image pre-processing, segmentation, feature extraction and classification techniques. Feature extraction is a significant measure in Computer Assisted Diagnosis (CAD) of Breast cancer abnormalities. Feature Extraction is the method of shrinking the dimension of image data by finding an essential detail as of the segmented image. The visual substance of a segmented image portions can be confined using this procedure. Feature extraction is one of the Image retrieval methods for achieving higher accuracy. In this paper an Improved Gray Level Co-occurrence Matrix (GLCM) Feature based Extraction with shape and Tamura features are discussed. Tamura features are extracted from Optimized Kernel Fuzzy Clustering Algorithm (OKFCA) which is one of the segmentation methods. This paper proposed Improved GLCM Feature Based Extraction algorithm to obtain the trained features which will be used for further processing in future. Experimental results of 322 images were evaluated from Mammographic Image Analysis Society (MIAS) database and used to evaluate the feature extraction process.

Keywords— Computer Aided Diagnosis (CAD), MIAS, OKFCA Segmentation, Feature Extraction, Gray Level Co-occurrence Matrix (GLCM)

I. INTRODUCTION

Breast cancer has become a foremost threat, primary to woman death. Early exposure is the finest solution to reduce this mortality. Digital mammography is the mainly reliable method for diagnosis of breast cancer suitable to its simplicity, portability and cost efficiency. To attain, high accuracy rates in the identification of breast cancer, special clinical decision support systems have been considered in the recent years.

Breast cancer is one of the crucial diseases among women [1]. This hazardous sickness is rooted by lesion that preserve categorized into 2 forms, which are malignant and benign. Benign is non-cancerous lesion which be able to uninvolved and improbable near reappear, whereas malignant is affected cell which is extremely probable to mature up and extend to other elements of the human body [2]. The majority of breast cancer patients does not observe about its attendance and die prior to the getting appropriate prescription. Thus, breast cancer recognition on the premature phase is an essential in order to decrease the amount of death [1].

Mammography is presently the best technique for detecting breast cancer at its premature phase. The issues with mammography images are complex. Therefore, image processing, feature extraction and classification techniques are used to support radiologist for detecting tumor. Features or attributes extracted from doubtful regions in mammography images can assist doctors to determine the subsistence of the tumor at real time thus speeding up treatment procedure. Detecting breast cancer can be moderately a demanding job. Particularly, as cancer is not a single disease but it is a group of manifold diseases. Consequently, every cancer is dissimilar from every other cancer that exists. Also, the similar drug might have dissimilar reaction on parallel type of cancer. Hence, cancer differs from individual to individual person. Depending on only one method or single algorithm to detect breast cancer may not afford us with the finest possible consequence. As one cancer diverges from another, likewise every breast shows differently from another. In general feature extraction plays a vital task in image classification method and superior selection of feature for obtaining high accuracy. Texture is an extremely significant uniqueness for the examination of several kinds of images that shows everywhere in an environment like remote sensing images, natural images, and medical images [14].

Review on Supervised Feature Selection Methods for High Dimensional data

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ABSTRACT

Nowadays, being in computerized period the data generated by different applications are increasing drastically both row-wise and column wise; this creates a bottleneck for analytics and also builds the burden of machine learning algorithms that work for pattern recognition. This reason for dimensionality can be taken care of through reduction techniques. The Dimensionality Reduction (DR) can be handled in two different ways namely Feature Selection (FS) and Feature Extraction (FE). This paper focuses around an overview of feature selection methods, from this broad study we can presume that a large portion of the FS methods use static data. Feature selection can be classified into two categories one is supervised learning algorithm and another one is unsupervised learning algorithm. The supervised learning algorithms learn the labeled data and construct learning models that are known as classifiers. The classifiers are employed for classification or prediction to identify or predict the class-label of the unlabeled data. The unsupervised learning algorithms lean the unlabeled data and construct the learning models that known as clustering models. Mostly, the feature selections are employed for the supervised learning algorithms since they suffered by the high-dimensional space. Therefore, this paper analyses a different literature review on the various feature selection methods for high-dimensional data.

Keywords: Feature selection, filter method, wrapper method, embedded method, hybrid method.

PERFORMANCE EVALUATION OF FEATURE SELECTION METHOD FOR MACHINE LEARNING ALGORITHMS TO DETECT WORMHOLE ATTACK IN MANETS

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Abstract: *A Mobile Ad Hoc Network (MANET) consists of a collection of wireless mobile nodes that forms a temporary network without having any fixed infrastructure or centralized administration. MANET is infrastructure-less, lack of centralized monitoring and dynamic changing network topology. It is highly vulnerable to different attack due to open error prone shared wireless medium, which may lead to severe damages on infrastructures. Hence the intelligent attack detection system needs to be obtaining the lime light of research based on recent machine learning algorithms. This paper introduced the Whale optimized features for machine algorithms to detect the wormhole attacks among the MANET systems. Since wormhole attacks can happen mostly at network layer of OSI Model. The algorithm has been tested on the OMNET++ environment integrated with python tool. Meanwhile the proposed algorithm has been compared with the other existing algorithm such as Particle Swarm Optimization (PSO), Logistic Regression (LR), Random Forest (RF) Classifier, Navie Bayes (NB) and K Nearest Neighbors (KNN), in which the proposed idea has outperformed the other intelligent algorithms in terms of accuracy, precision, recall and f1-score.*

Keywords: MANET, Wormhole, OMNET, Feature selection, Machine Learning

1. Introduction

A mobile Ad hoc network (MANET) is a collection of two or more devices or nodes equipped with wireless communication and networking capabilities. These node includes laptop, computers, wireless phones and so on, have a limited transmission range. Such a wireless ad-hoc network is infrastructure less, self-organizing, adaptive and does not require any centralized administration. If two such devices are located within transmission range of each other, they can communicate directly. Each node can communicate directly with only few nodes within the communication range and has to forward messages using the neighbor nodes until the messages arrive at the destination nodes. Meanwhile the transmission among sender and receiver can utilize numerous nodes as intermediate nodes, many routing protocols have been proposed for the MANETS. Most of the protocol assumes that other nodes are trustable so they do not consider the security and attack issues. The lack of infrastructure, rapid deployment practices, and the hostile environments in which MANETS are deployed make them vulnerable to a wide range of security attacks. However most of these attacks are performed by a single malicious node. Many solutions exist to solve single node attacks but they cannot prevent from the attacks that are executed by colluding malicious node such as wormhole attack [1].

Wormhole attack is more dangerous than single node attacks. In a wormhole attack, an attacker connects two distant points in the network, and then replays them into the network from that point. An example is shown in Fig. 1. Here S and D are the two end-points of the wormhole

MINING AND PREPROCESSING TWITTER DATA FOR DETECTING POTENTIAL EFFECTS OF REMDESIVIR

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Abstract: *This paper discusses a new model towards opinion mining and sentiment analysis of the text reviews posted in twitter website which are mostly in unstructured format. In recent years, web forums and social media has become an excellent platform to share opinions in the form of text about any topic especially in medical terms. These opinions are used for making decisions to choose any manufactured goods. Usually, opining mining deals with analyzing and summarizing opinions about specified items however sentiment analysis classifies prejudiced text into positive/negative. The outbreak of Coronavirus, namely COVID-19, has created a calamitous situation throughout the world. The cumulative incidence of COVID-19 is rapidly increasing day by day. In the absence of any curative drug, the United States gave Emergency use authorization to the antiviral* ***'Remdesivir'*** *for people hospitalized with severe COVID-19. This research will try to analyze and find the most relevant drugs names mentioned in CORD-19 data corpus related to the treatment of COVID-19. In this research work, a proficient pre-processing technique for opinion mining is implemented and will be utilized for investigating patients or users' comments on 'Twitter' social network about 'remdesivir'. Therefore, various text pre-processing methods have been utilized on the dataset to attain an adequate standard text.*

Keywords: COVID-19, Remdesivir, Twitter data, Sentiment Analysis, Preprocessing.

1. Introduction

Beside with the vital development of social media, individuals as well as companies are progressively getting public opinions which support their decisions. Opinion mining is scrutinized as a sub-field of Natural Language Processing (NLP), information retrieval, and text mining. It is the route of understanding the users' opinions from their statement that have been signified as unstructured texts. Appearance of 'online social media' has led to the invention of a vast amount of user statements on websites and thus, has raised opinion mining as a valuable also interesting problem. Twitter is a micro blogging service in which people share and discuss their thoughts and views in 140 characters without being constrained by space and time. Millions of tweets are generated each day on different issues. People usually express their sentiments towards various issues [1].

The novel Coronavirus disease (COVID-19) was first reported on 31 December 2019 in the Wuhan, Hubei Province, China. It started spreading rapidly across the world [2]. The cumulative incidence of the COVID-19 is rapidly increasing and has affected 196 countries and territories with USA, Spain, Italy, U.K. and France being the most affected. World Health Organization (WHO) has declared the coronavirus outbreak a pandemic, while the virus continues to spread. As on 4 May 2020, a total of 3,581,884 confirmed positive cases have been reported leading to 248,558 deaths. The major difference between the pandemic caused by COVID-19 and related viruses, like Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS), is the ability of COVID-19 to spread rapidly through human contact and leave nearly 20% infected subjects as symptom-less carriers [2]. Moreover,

Materials Today: Proceedings xxx (xxxx) xxx

Contents lists available at ScienceDirect

Materials Today: Proceedings

journal homepage: www.elsevier.com/locate/matpr

A new proposal for the segmentation of breast lesion in mammogram images using optimized kernel fuzzy clustering algorithm

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ARTICLE INFO

Article history:
Received 13 November 2020
Received in revised form 13 November 2020
Accepted 25 November 2020
Available online xxxx

Keywords:
Breast cancer
HDF
K-means clustering
MIAS
OKFCA
Otsu segmentation

ABSTRACT

Breast Cancer is one of the fatal diseases which is caused due to the un natural development of the tissues in the breasts which are abnormal. The level of sarcoma or the stage of the cancer is mostly relied upon the doctor's analysis. In order to provide a technical contribution which supports the doctor to take decision, this paper is intended to develop a framework which can help in determining the stage in which the cancer is at present. The major issues in the prediction of breast cancer through mammograms are the diverged artifacts, similar breast tissues and lower contrast on the boundary between skin and air. To overcome these issues, Optimized Kernel Fuzzy Clustering Algorithm is developed (OKFCA) and to determine the cancer portions in mammogram images. The OKFCA algorithm has described to identify the segmented regions in Mammogram Image Analysis Society (MIAS) database. The proposed segmentation algorithm is carried out with pre-processed mammogram images, noise free image that was obtained by using Hybrid Denoising Filter (HDF) algorithm and the proposed OKFCA is a significant approach to find out the cancer segment of mammogram image. Data clustering facilitates to place data of similar types in one group and of dissimilar types in different group. The results from the experiments which were carried on the MIAS data confirms the efficiency of the proposed system in terms of accuracy when compared to that of the famous K-Means, OKFCA and Otsu methods.

Selection and peer-review under responsibility of the scientific committee of the Emerging Trends in Materials Science, Technology and Engineering.

1. Introduction

The process of image segmentation deals in splitting up of images into various regions that has similar pixels in each regions with same kind of attributes. The segmentation relies on its consistency and more often, accurate segmentation is a key issue to be addressed. Segmentation deals in changing as how an image can be represented so that it becomes easy to analyze and to find objects and various boundaries of the images. In this process, the mammogram images are segmented for bringing in easy way of analysis and to identify objects as well as boundaries in an image.

Breast cancer are more common in women and it takes a major portion of that of all other types of cancer [1]. Early detection of the same has been possible with the morbidity and morality of the cancer [2]. Hospitals and clinics uses many image based techniques such as CT Scan [3] Ultra Sound Scan [4], Mammography [5] and MRI scans [6] for imaging the breasts through which high-resolution images are obtained which are used for the detection for the abnormal tissue growth along the breasts [7,8]. The tissues of the blood normally identified as group of pixels or as a cluster of intensities in a mammogram image which obviously include fatty and dense glandular tissue. The abnormal growth of tissues with uncertain masses or tissues classified as abnormal growth are the best indicators of the presence of the disease and are seen through the mammography. The precision of a mammogram is about 85–90% for the detection of breast cancer [9]. Owing to the high precision of the mammograms, these are used majorly for the detection of breast cancer [10].

There is a high awareness among the modern ages in the country and there are numerous images available captured through the mammogram. There is a significant deficiency a quality screening of these mammograms which created a demand for a Computer Aided mechanism for detection of breast cancers efficiently. This manuscript aims to address the frequent detection of anomalies in a mammogram called the mass. A mass can be defined as the space which is occupied by a lesion that is seen as a single blend

https://doi.org/10.1016/j.matpr.2020.11.931
2214-7853/
Selection and peer-review under responsibility of the scientific committee of the Emerging Trends in Materials Science, Technology and Engineering.

Please cite this article as: V. Punithavathi and D. Devakumari, A new proposal for the segmentation of breast lesion in mammogram images using optimized kernel fuzzy clustering algorithm, Materials Today: Proceedings, https://doi.org/10.1016/j.matpr.2020.11.931

Biosc.Biotech.Res.Comm. Special Issue Vol 13 No 13 (2020) Pp-150-158

BBRC
Bioscience Biotechnology Research Communications

Customized Data Extraction and Effective Text Data Preprocessing Technique for Hydroxychloroquin Related Twitter Data

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ABSTRACT

Coronavirus Disease 2019 (COVID-19) has become a significant worldwide issue with a rising the number of infected people and increases in mortality. Among every single helpful methodologies, contentions have raised about hydroxychloroquine (HCQ) viability in the treatment of COVID-19. The utilization of hydoxychloroquine is acknowledged as commonly accepted for patients with malaria and autoimmune diseases, however its utilization where not demonstrated and without clinical management can cause genuine results and ought to be maintained a strategic distance. This research carried out a sentiment analysis regarding the effectiveness of hydroxychloroquine in the treatment of COVID-19. Sentimental Analysis is the way toward recognizing concept from text written based on Natural Language Processing the element it is alluding to. Twitter is an informal community that allows clients to post their suppositions about current issues, share their get-togethers, and associate with others. Twitter has now gotten probably the biggest wellspring of information, with more than 200 million dynamic clients month to month. The technique concentrates and investigations sentimental data from microblogs to forecast the patient's assessment of hydroxychloroquine. In this work, a pre-handling strategy for assessment mining is executed and will be used for examining patients' remarks on Twitte' social media about hydroxychloroquine. The different content pre-handling strategies have been used on the dataset to accomplish a sufficient standard text.

KEY WORDS: COVID-19, HYDROXYCHLOROQUINE, TWITTER DATA, SENTIMENT ANALYSIS, PREPROCESSING.

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, Hubei, China, and has resulted in an ongoing pandemic. As of 9 September 2020, more than 27.5 million cases have been reported across 188 countries and territories with more than 897,000 deaths; more than 18.5 million people have recovered (Lai C.C et al., 2020).

This chart shows the number of daily confirmed COVID-19 cases from December 2019 to September 2020. As on 10 September 2020, the total confirmed positive cases have been reported as of 27.89 million in world and 4.47 million in India. There are no specific medicine or proven vaccines for treatment of COVID-19. The executives includes the indications treatment, strong consideration, detachment, and exploratory measures. The World Health Organization (WHO) and the FDA in a Drug Safety Communication declared that hydroxychloroquine has

ARTICLE INFORMATION

Received 12th Oct 2020 Accepted after revision 30th Dec 2020
Print ISSN: 0974-6455 Online ISSN: 2321-4007 CODEN: BBRCBA

Thomson Reuters ISI Web of Science Clarivate Analytics USA and Crossref Indexed Journal

Clarivate Analytics

Crossref

NAAS Journal Score 2020 (4.31)
A Society of Science and Nature Publication,
Bhopal India 2020.
Online Contents Available at: http//www.bbrc.in/
Doi: http://dx.doi.org/10.21786/bbrc/13.13/21

A Futuristic Inspection on Multipath Routing

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ABSTRACT- Vehicular Ad hoc Network (VANET) is raise division of Mobile Adhoc Network (MANET). MANET and VANET are wireless networks which are configured independently. VANET communicate the information between moving vehicles on the roadside. VANET rising very fast in research field. In VANET the major issues goes around the mobility of its node and when the network size increases it become challenge in routing. The main goal of VANET is to collect a data system between vehicles that are moving on the roads, which facilitate the vehicles to communicate with each other for the safety manner. As VANET is a dynamic topological based and the link may get change at any time so to link the nodes an optimal path is selected. To handle different topology many routing protocols are support to face the challenges. The VANET also hold challenges in unbalanced connectivity, securing the location, efficient routing, delay constraints, packet congestion and reliability and to resolve the difficulty and challenges, hence creating the efficient VANET routing. The paper review and compare study on routing protocols and also gives the advantage and disadvantages of routing protocols. The paper focus on multipath routing protocol DSR (Dynamic Source Routing), AODV (Adhoc On-Demand

A DETAILED ANALYSIS OF THE DATA COMPRESSION TECHNIQUES IN IMAGE PROCESSING

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Abstract

An overview of computer technology in various fields has shortened the job of human beings but has also resulted in huge volume of digital data. Data compression helps us to reduce the given data size without missing the important information. The two types of compression are lossy and lossless compression. In this paper some of the lossy and lossless image compression techniques are discussed in detail. The rudimentary idea of image compression is to diminish the average number of bits per pixel necessary for their depiction. With the help of image compression, the storage space of images can be decreased and also the storage and transmission process is improved in order to save the channel bandwidth. As lossy technique is not reversible, recovering the real image using the lossless compression will be much useful. But in lossless technique the compression ratio is low when compared to lossy image compression technique. In this paper, it is discussed that the lossy techniques are better to compress the images which are given as an input in different image file formats.

Keywords- Compression Techniques, Cosine Transformation, Lossless Compression, Lossy Compression.

1. Introduction

Perception is defined as the process to receive and analyse the visual information by the researchers. When the same process is completed with the help of digital computer, it is called as digital image processing. Fig 1. shows the different stages of image processing scheme. Digital image processing [5] and analysis techniques are used today in a variety of problems. The thrust areas are Office Automation, Industrial Automation, Bio-medical, Remote Sensing, Scientific application, Criminology, Meteorology and Information Technology. Basic components of a general-purpose image processing system are digital computer, digitizer, sensor, operator console, mass storage and display. Four operations performed by this system are: image sensing, digitizing, processing and displaying. In general view of human's ancient enchantment with visual sensing, digital image processing is a recent development in the scientific field. It has been applied to practically every type of imagery. Pictorial displays are easy to interpret and carry huge information. The spatial distribution of image data are used for various transformations of images. The images can be compressed, filtered or the pattern of an image can be recognized.

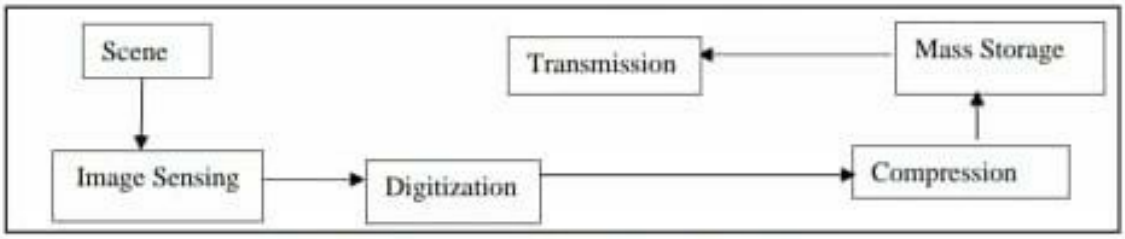

Fig 1. Different stages of image processing scheme.

Multi-class ECOCAMD Classifier in Classification of the types of White Blood Cells

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Abstract

The primary hematological malignancy leukemia spoils the immune system of the body by changing the basic characteristics of White Blood Cells (WBC); consequently, they grow up very rapidly in the count. Timely detection of leukemia and its types can be helpful to better diagnose the disease and treat accordingly. For the identification of types of leukemia, it is must to discriminate the types of WBC. This work is an effort to propose a method for automating the segmentation task of the nucleus region of WBC using YCbCr color space and local thresholding with 100% of segmentation accuracy. After this, the necessary set of statistical and texture features are extracted and given to the proposed machine learning multi-class Error Detection and Correction Code with Accurate Mean and Distance (ECOCAMD) classifier to classify the types of WBC. The results of this proposal demonstrate 98.81% of overall accuracy rate with 242 test images of blood smears obtained from the LISC dataset.

Keywords: *Classification, Distance, ECOC, Image Processing, Leukemia.*

1 Introduction

The disorder leukemia is a major type of cancer caused by the abnormality in producing WBC [1]. As per the researches on cancer, it is estimated that around 132,574 cases will be associated with the lymphoid system alone in the year of 2020. It was 104,239 and 117,649 in the years 2010 and 2015 respectively [2]. In the hematopoietic system, the bone marrow is producing the blood. The most specific blood components are plasma, sugar, white blood cells and red blood cells. The WBC are categorized into three types: Lymphocytes, monocytes, and granulocytes. Amongst them, the granulocytes are differentiated into three types as basophil, neutrophil, and eosinophil. The increase in the count of WBC causes diseases, tumors, and cancers like leukemia. Existence in the blood of some of these cells is expressed in terms of accurate count rather in percentage. Recognition and classification of the types of WBC help in discriminating the diverse types of leukemia. The most general types are Acute Lymphatic Leukemia (ALL), Acute Myelogenic Leukemia (AML), Chronic Lymphatic Leukemia (CLL), and Chronic Myelogenic (CML) [3][4]. Acute leukemia grows faster than chronic types. For this purpose, it is essential to characterize the WBC type. The progression in the population of a specific kind of WBC in peripheral blood and change in their texture, shape, and color define what sort of leukemia it is [5].

In this paper, a system is implemented for segmenting the nucleus region of five categories of WBC and classifying them to their concern types. In the classification part, a novel algorithm named ECOCAMD is proposed that does classification accurately than the algorithm ECOCECS proposed by Mengxin Sun *et*

Noise Removal in Breast Cancer Using Hybrid De-noising Filter for Mammogram Images

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Abstract. Breast Cancer is a one of the major disease for women in today's world. The aim of this paper is to develop a robust and image pre-processing methods to realize mammogram images features with different dimensions. To categorize an image is to be illustrated or signified by particular features. In this paper, proposed a mammogram image pre-processing extraction process for deriving the image classification. The proposed method present two phases namely, (1) Image Re-sizing: The original MIAS mammogram image database images are resized into predefined sizes; (2) Image pre-processing. The Hybrid De-noising Filter is obtained by Median Filter and Applied Median Filter Integration. It is established out using Hybrid Denoising Filter (HDF) to discard the noise; Different image de-noising algorithms are discussed in literature review. The proposed Hybrid Denoising Filter algorithm performs an important function in image feature selection, segmentation, classification, and investigation. According to the experimental results the Hybrid Denoising Filter algorithm mainly focuses on discarding irrelevant noise and focuses on the execution time using MATLAB R2013a Tool. The proposed Hybrid Denoising Filter has less Root Mean Square Error (RMSE) variation and High Peak Signal Noise Ratio (PSNR) when compared with other de-noising algorithms of Gaussian, Wiener, Median and Applied Median Filters.

Keywords: Breast Cancer · Image pre-processing · Hybrid De-noising Filter · MIAS

1 Introduction

Image processing is a technique to carry out several operations on an image, in order to obtain an enhanced image or to mine some precious information from it. It is a type of signal processing in which input (contribution) is an image and result could be image or characteristics or attributes linked with that image. Digital Image Processing (DIP) is an ever budding area with a variety of applications. It forms core research area within engineering and computer science regulations too. Digital image processing deals with developing a digital system that perform operations on digital image.

A cancer is a type of disease having source in the abnormal growth of the cells. Breast cancer known as breast disease having staring point is breast tissues and it can

S. Smys et al. (Eds.): ICCVBIC 2019, AISC 1108, pp. 109–119, 2020.
https://doi.org/10.1007/978-3-030-37218-7_13

Materials Research Innovations

ISSN: 1432-8917 (Print) 1433-075X (Online) Journal homepage: http://www.tandfonline.com/loi/ymri20

Performance of cross-linked polymers based gel electrolyte in the fabrication of quasi-solid state dye-sensitized solar cells

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To cite this article: M. Kesavan, A. Arulraj, V. Sannasi, K. Rajendran, P. Anbarasu, D. Jeyakumar & M. Ramesh (2018): Performance of cross-linked polymers based gel electrolyte in the fabrication of quasi-solid state dye-sensitized solar cells, Materials Research Innovations, DOI: 10.1080/14328917.2018.1537105

To link to this article: https://doi.org/10.1080/14328917.2018.1537105

CRITERIONS CONSIDERED BY PASSENGERS IN SELECTION OF AIRPORTS FUNCTIONING IN TAMIL NADU

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Abstract

Services offered to the air passengers at airports showcases standards of services offered to the Indian and internationals passengers and the competitive position of Indian airports in offering various services. This study aims to evaluate the prime criterions that are considered by passengers in selection of airports functioning in Tamil Nadu. As per this study, it has been inferred that standard and quality of the services varies from one airport to others, may be based on the domestic or international operations carried by the airports and its geographical locations, number of passengers and airlines handled. It has to be understood and bring into action that with the improved airport standards will support the nation in both earning more revenue from air traffic movement and in tourists travels. With the enhanced regional connective the revenue could be doubted in the near future.

Key Words: Air Ports, Air Traffic, South India.

1. INTRODUCTION

In the 21st century, Indian economy aligning with the world economy aims to offer better or say highly competitive air services. In this context it can be said that airports plays a prime role in accommodating and offering world class passengers who travel via-air. Airports are considered as an epicenter for transportation of both passengers and cargos. With the growth of passengers' air transportation services in India, need for enhancing the quality of the airports and passengers handling capacity have become need of the hour. As services offered to the air passengers at airports showcases standards of services offered to the Indian and internationals passengers and the competitive position of Indian airports in offering various services. Indian airports have not only proved it strength to handle large passenger and cargo movement, at the same time it has registered its efficiency in managing world wide spread issues of safety and security of both passengers and cargos, meeting climatic change issues, adoption to modern technological changes and quick demands of the air travellers.

ON ALPHA DOT - CLOSED SETS IN TOPOLOGICAL SPACES

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Abstract : In this paper, we have introduced a new class of set, namely $\dot{\alpha}$ - closed set. Some of the fundamental properties of this set and some concerned mappings of this set are also studied and analyzed.

Keywords : α-closed set, αgg-closed set, $\dot{\alpha}$ -closed set, $\dot{\alpha}$ -continuity, $\dot{\alpha}$ -irresolute, $\dot{\alpha}$ -$T_{1/2}$-space.

1.Introduction

Levine[**5**] introduced the class of g-closed sets, a super class of closed sets in 1970. H.Maki, R.Devi and K.Balachandran,[12,13] introduced the concept of α-generalized closed sets in topological spaces. Recently, different types of g-closed sets and αg –closed sets are introduced and investigated. We introduce the notions of $\dot{\alpha}$ -closed sets. Also, the relationships among related generalized closed sets are investigated and $\dot{\alpha}$ - continuous map, $\dot{\alpha}$ - open map $\dot{\alpha}$ -irresolute map and $\dot{\alpha}$ -homeomorphism are defined. Also, Applications of $\dot{\alpha}$ -closed sets are analyzed.

2.Preliminaries

For a subset H of a space (X,τ), cl(H) and int(H) denote the closure and the interior of H respectively. The class of all closed subsets of a space (X,τ) is denoted by C(X,τ). The smallest semi-closed (resp. pre-closed) set containing a subset H of (X,τ) is called the semi-closure (resp. pre-closure) of H and is denoted by scl(H) (resp. pcl(H)).

Definition 2.1:

A subset H of a topological space (X,τ) is called

1) a semi-open set[6] if H⊆cl(int(H)) and semi-closed set if int(cl(H))⊆H.

2) a α-open set if H ⊆ int(cl(int(H))) and α-closed set [23] if cl(int(cl(H)))⊆H.

3) a b-open set [15] if H ⊆ [cl(int(H))∪ int(cl(H))] and b-closed set if [cl(int(H))∩ int(cl(H))]⊆H.

4) a regular open (briefly r-open) set if H=int(cl(H)) and regular closed (briefly r-closed) [20] set if H=cl(int(H)).

5) a π open set [20] is a finite union of all r-open sets in (X,τ).

European Journal of Molecular & Clinical Medicine
ISSN 2515-8260 Volume 07, Issue 10, 2020

A Hybrid Algorithm with Modified SVM and KNN for Classification of Mammogram Images using Medical Image Processing with Data Mining Techniques

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Abstract:
Digital mammography is most reliable and effective technique for early and accurate identification of Breast cancer. Image processing plays a significant role in diagnosis and classification of breast cancer in medical field. In this paper, a system is created to classify the mammogram images into three classes, namely Benign, Malignant and Normal. Mammogram images are pre-processed and the features are extracted from the segmented region. These features are used to train modified SVM and KNN classifier. The proposed Hybrid algorithm with modified SVM and KNN classifier helps to classify the mammogram images. This latest technique improves the SVM algorithm with introducing multi class for classification of breast cancer. It exploits the KNN algorithm according to the distribution of test images in a feature space. This study also evaluates the accuracy with the SVM and KNN classifier. The modified SVM and KNN hybrid algorithm produces higher prognosis accuracy than the KNN method and SVM technique. This method is tested for 10 test images with 20 trained. This methodology achieves an overall mean accuracy of 99.3406% in classification of mammogram images.
Keywords: Classification, KNN, MIAS, Proposed KNN with SVM.

I. INTRODUCTION

Breast cancer is a tumor that forms in the cells of the breast. It is the most familiar non skin tumor in women and the second leading disease caused in female [1]. Breast cancer endurance rates have greater than before, and the number of deaths associated with this disease is gradually waning, largely due to factors such as earlier detection of tumor. Breast tumors and masses usually appear in the form of dense regions in mammograms. A typical benign mass has a round, smooth and well constrained boundary; on the other hand, a malignant tumor usually has a postulate, rough, and blurred boundary [2], [3].

Early identification of cancer is important for a fast reply and better chances of treatment. Unfortunately, early identification of cancer is often hard since the symptoms of the disease at the beginning are not present. Thus, cancer remains one of the topics of health research, where many researchers have provided with the aspire of creating proof that can develop treatment, precaution and diagnostics.

In machine learning there are two types: the supervised and unsupervised learning. Declare the classes first to classify the data that are known in earlier and the second, the classes are not known. Among the machine learning methods, there are: Support Vector Machines, Decision Tree, Neural Network, Bayesian networks, k-nearest neighbors and so on.,

The k-nearest neighbor algorithm is widely used in data classification [4]. The KNN allows the classification of a new component by calculating its distance from the other entire component. The suitable functioning of the system depends

International Journal of Advance and Innovative Research
Volume 6, Issue 1 (VII): January - March, 2019

ISSN 2394 - 7780

IMPACTS OF IOT IN BIG DATA ANALYSIS

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ABSTRACT

In today's growing technological revolutions and advanced networking system Internet of Things (IoT) is the most popular and evolving term in technological world. Explosive growth of the devices connected to IoT and exponential growth of information conception makes it possible to overlap with the recent advancements of Big Data Analysis. IoT is used for variety of applications. The applications are interacting with text books using QR code printed on it, smart meters, home router, TV, light control, A/C control. The convergence of these areas creates several flourishing opportunities in Big Data and IoT systems. The advantages of IoT for the user there are many security aspects which need to be taken care by the user of IoT enabled devices. In an effort to understand the development of IoT and Bigdata.This paper reviews the current research of IoT,key enabling technologies,IoT applications, and identifies research trends and challenges.

Keywords: IoT, Big Data, Data Analysis, Taxonomy

1. INTRODUCTION

The Internet of things (IoT) is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and network connectivity which enable these objects to connect and exchange data. It refers to a network of objects, each of which has a unique IP address & can connect to the internet. The network can be a combination of people-things, things-things, and people-people. In other words, it is a system of interrelated computing devices, digital machines, object, animals or people that are provided with a unique identifier and the ability to transfer data over a network without requiring human-to-human or human-to-machine interaction. Convergence between wireless communications, Digital electronic devices, and Micro-electro-mechanical systems (MEMS) technologies led to the rise of the Internet of Things. Internet-connected objects like computers, smart phones, tablets and Wi-Fi de-vices, sensors, wearable devices and household appliances are all the objects of the IoT components [1]. Since there is a massive growth in number of devices day by day, the amount of data generated would also be enormous. Here is where Big Data and IoT go hand in hand. Big Data manages the enormous amount of data generated using its technologies. The Internet of Things (IoT) and big data are two vital subjects in commercial, industrial, and many other applications [2].

Given that sensors are used in nearly all industries, the IoT is expected to produce a huge amount of data. The data generated from IoT devices can be used in finding potential research trends and investigating the impact of certain events or decisions. These data are processed using various analytic tools. In this context, leveraging a big data plat-form that can assist in consuming and reading diverse data sources as well as in accelerating the data integration process becomes vital [3]. Data integration and analytics allow organizations to revolutionize their business process. Specifically, these enterprises can use data analytics tools to transform a huge volume of sensor-collected data into valuable insights. Given the overlapping research trends in these areas, this paper focuses on the recent advances in management of big data and analytics in the IoT paradigm.

II. TAXONOMY

Figure 1 shows the thematic taxonomy of big data and analytics solutions that are designed for IoT systems. These solutions are categorized based on the following attributes: a) big data sources, b) system components, c) big data enabling technologies, d) functional elements, and e) analytics type [4].

International Journal of Advance and Innovative Research
Volume 6, Issue 1 (VII): January - March, 2019
ISSN 2394 - 7780

A COMPREHENSIVE STUDY OF CURRENT TRENDS IN WEB MINING

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ABSTRACT
The World Wide Web is a huge, information center for a variety of applications. Web contains a dynamic and rich collection of hyperlink information. It allows Web page access, usage of information and provides numerous sources for data mining. The goal of Web mining is to discover the pattern of access and hidden information from huge collections of documents. The present era is engulfed in data and it is quite difficult to churn the emergence of unstructured data in order to mine relevant information. The purpose of this paper is to provide the current evaluation and update of web mining research and techniques available. Current advances in each of the three different types of web mining are studied in the categories of web content mining, web usage mining, and web structure mining.

Keywords: Data Mining, Web Mining, Web Content Mining, Web content mining tools, Web Structure Mining, Web Usage Mining.

I. INTRODUCTION

In Today's world, there is a rapid increase in the usage of Internet applications in day to day life and it grows significantly and steadily day by day, thereby distressing the lives of people in almost all the sectors like health, education, business etc. The web applications are gaining more popularity in the present scenario due to the contributing factors like expediency and flexibility of services provided by web applications. Web applications could able to work with a huge data which consistently consists of various user operations, transactions and user activity logs. In order to enhance the decision making process , the framework of Knowledge Discovery from Databases (KDD) [1] have been used and various people have conducted many experiments to discover the various ways of retrieving possibly useful information which is embedded in large databases. The main process of KDD, is called as data mining, and its main work is to retrieve the frequent patterns which includes association rules and sequential patterns mining. Web mining is one of the applications of data mining and it specified about the web data [2].

Many of the researchers are involved in mining the data due to the tremendous increase in the growth of the information sources available on the web and also ecommerce. According to the authors Madria, et al. [3] and Borges and Levene [3] , Web mining have been categorized into three broad areas of interest namely : Web content mining, Web structure mining, and Web usage mining. The above three mining tasks can be used in isolation or it can combined with other tasks since they might contain the links of the web document.

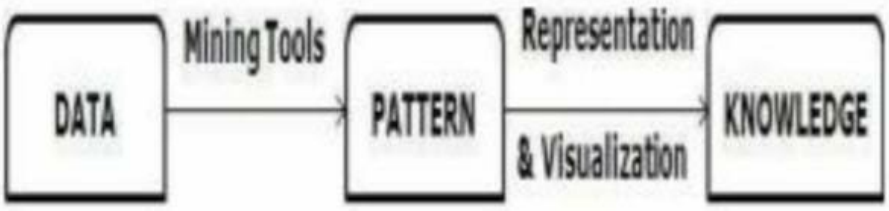

Fig-1: Route of Web Mining

Web mining is categorized under data mining technique due to which kind of information is to be extracted and retrieved process from large number of documents and web services mechanically. The main aim of data mining is to the retrieve the necessary and exciting patterns from a collection of enormous data sets in the current trend as well as used in the typical data mining. Web mining uses big data as the data set from which it tries to retrieve the data. Web data typically consists of various profile, structure, documents, information etc.

Web mining is broadly based on two major concepts namely process-based and data-driven. In Web mining mainly try to extract knowledge from the web [4]. The steps involved in web mining as: collection of data, data selection before processing, knowledge discovery and analysis of data [5].

II. TAXONOMY

Web Mining can be broadly divided into three distinct categories, according to the kinds of data to be mined. Figure 2 explains the web mining taxonomy.

International Journal of Advance and Innovative Research
Volume 6, Issue 1 (VII): January - March, 2019
ISSN 2394 - 7780

A STUDY AND ANALYSIS OF IMAGE MINING TECHNIQUES AND ITS APPLICATIONS

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ABSTRACT
Data mining is the process of sorting through large database to identify patterns and establish relationships to solve problems through data analysis. A considerable part of data mining is image mining. Image mining deals with the extraction of image patterns from images stored in the large collection of image data base. Image plays an important role in every aspect of medical diagnosis, satellite image, space research, industries, remote sensing, even in the agriculture field. Analysing these images we get useful information. This paper is mainly focus on image mining process, image mining techniques, various extraction mechanisms used in image mining and its applications.

Keywords: Image mining, Data Mining, Medical Diagnosis, Agriculture images, CBIR.

I INTRODUCTION
In the current digitalization world, tremendous collection of digital data are stored in each and every second. Digital data are in different forms like Video, Audio, Image and Text. Image mining deals with the extracting image data and entrenched knowledge, image data relationship, or other patterns which is not clearly found in the images [1]. Image mining is additional than just an extension of data mining to image domain.

In image mining, the elemental challenge is how to expose out low-level pixel representation enclosed in a raw image or image sequence can be processed to recognize high-level image objects and relationships.[2] In general, image mining deals with study and growth of new technologies. The aspire of image mining is

To find out the image pattern from a given group of images [3].

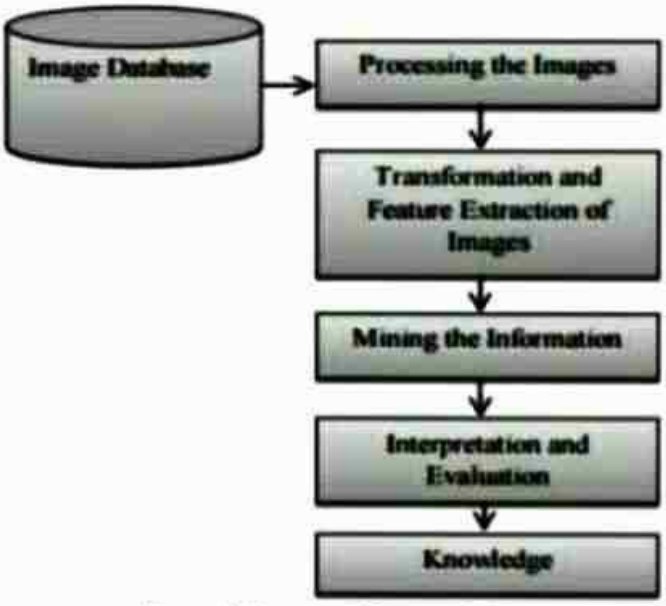

Figure-1: Process of Image mining

Figure 1shows the process of image mining. To improve the quality of image, preprocess the image from massive image database is the first step. Then the images are go through no of transformations and feature extraction to create significant features, along with the developed features, mining process can be accomplish using data mining techniques to find out the considerable patterns.

The consequential pattern are then guesstimate and interpreted to find the final knowledge, which will be applied to applications [4][5].

II APPLICATIONS OF IMAGE MINING
In current world, image mining involves various fields like medical diagnosis, space research, DNA matching, Agriculture field, satellites image such image data are provides knowledge and information for decision making[6].

International Journal of Advance and Innovative Research
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NEW TRENDS IN OPINION MINING AND SENTIMENT ANALYSIS

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ABSTRACT
World is evolving around the World Wide Web and information sharing technologies. Nowadays, people express their reactions to various public issues, events or products in social media applications. An organization can analyze such reactions of people to take an action on the event. In the current scenario, at the crossroad of computational linguistics and data retrieval opinions and emotions are more valuable than the subject of the document. Linguistic resources are used to retrieve sentiments and also to classify it. It is essential to develop methods to automatically classify and gauge them to identify the underlying sentiment about the product. Analyzing the polarity of sentiment expressed in data is Opinion Mining (OM). It is a system that identifies and classifies opinion/sentiment as represented in electronic text. Economic and marketing researches depend heavily on accurate method to predict sentiments of opinions extracted from internet and predict online customer's preferences. OM has many steps and techniques for each step

Keywords: Emotion Mining, Machine Learning, Opinion Mining, Sentiment Analysis, Semantics.

I. INTRODUCTION
The electronic world change the way of expressing feelings of particular. Major leading industries uses written customer reviews in comments for the business intelligent [1]. Different products from numerous amounts of retailers are available for E-Shopping. Different shopping sites like amazon, flipkart, snapdeal, myntra, offers customers to write their opinion about different features of the product [2]. This enormous corpus of review is playing very important role in competitive intelligence and it gives right direction to consumer as well as retailer. Not only the consumer uses this information for smart purchasing but also retailer uses this information to find out the pitfalls in their product and improve the quality, for finding out the current requirement of the market and to adapt the change of marketed [3].

Before purchasing any goods user find out the response of others about that product. for example a particular Smartphone contains various features like mp3, Bluetooth, calendar ,alarm ,browser ,wifi etc. as shown in figure1.People can debate some of the aspects play more important role than others, this may have a major weightage for general users for taking decision and to retailer for their future development plans[4]. for example consider some of the aspects of smart phone like "Battery‖, —Browsing speed‖, have more importance by majority of users that other aspects like "alarm", "calendar". The term sentiment mining is also referred as opinion mining which will help us for the process of sentiment analysis and for classifying sentiments. Some of the challenges faced in Sentiment analysis are that an opinion word which is positive in one situation can be negative in another situation and opinions are not expressed similarly by different people. Most reviews have positive and negative comments and are analyzed sentence by sentence. But, in more informal media like twitter or blogs, people are more likely to combine different opinions in same sentence which may or may not be easy to comprehend, but difficult for an algorithm to analyze [5].

SENTIMENT ANALYSIS AND OPINION MINING
Opinion mining (sometimes known as **sentiment analysis** or **emotion AI**) refers to the use of natural language processing, text analysis, computational linguistics, and biometrics to systematically identify, extract, quantify, and study affective states and subjective information. Sentiment analysis is widely applied to voice of the customer materials such as reviews and survey responses, online and social media, and healthcare materials for applications that range from marketing to customer service to clinical medicine.

Not surprisingly, there has been some confusion among practitioners, students and even researchers about the difference between sentiment and opinion and whether the field should be called sentiment analysis or opinion mining. In Merriam-Webster"s dictionary, sentiment is defined as an attitude, thought, or judgment prompted by feeling, whereas opinion is defined as a view, judgment formed in the mind about a particular matter. The difference is quite little, and each contains some elements of the other. The definitions indicate that an opinion is more of a person's view about something, whereas a sentiment is more of a feeling. For example, the sentence "I am concerned about the current state of the economy" expresses a sentiment, whereas the sentence "I think the economy is not doing well" expresses an opinion. In a conversation, if someone says the first sentence, we can respond by saying, "I share your sentiment," but for the second sentence, we would normally say, "I agree/disagree with you." However, the underlying meanings of the two sentences are related because

International Journal of Advance and Innovative Research
Volume 6, Issue 1 (VII): January - March, 2019
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NEW TRENDS IN OPINION MINING AND SENTIMENT ANALYSIS

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ABSTRACT
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A STUDY ON DATA MINING IN HEALTH CARE

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Abstract- The amount of data produced from Health care industry is huge which consists of information about patients and their medical history.Data mining emerges with techniques for discovering and extracting information from the data warehouse. Thus the hidden information's can be discovered with the help of data mining techniques. Such techniques when implemented in healthcare field for decision making, it paves the way forimprovementof treatment standard and also increases the survival rate of patients.The Healthcare data needs to be examined accurately in order to diagnosis the disease correctly and to provide with appropriate treatments.

Keywords -Data Mining Techniques, Data Mining Tools, Data Mining Applications.

I. INTRODUCTION

Data Mining is applied in various areas like industry, finance, banking, retail surveillance, healthcare, science and engineering, transportation and telecommunication etc.In today's business sector data mining plays effective role in all fields and hence it is demanded highly. Data from all such fields are being collected and stored at a place which is known as Data Warehouse.

It is very difficult to examine and take decision on the healthcare data with respect to the patients because the amount of data is very huge and also it's very complex.Data miningincludes thebasics to read the data stored in data warehouse andalso makes easy for the analyst to access the data usingtools and techniques [1]. With the help of data mining techniques different factors which are responsible for diseases like type of food,environmental factors, living conditions, working environment, availabilityof health care services can be easily analyzed.In healthcare domain applications of data mining plays a significant role.

II. OVERVIEW OF DATA MINING

Meaningful and useful information is extracted from voluminous, highly complex rawand this process is termed as Data mining.Data mining comprises of selecting the data mining algorithms and then applying the selected algorithms to produce previously unidentified and useful information from the database.

In all fields like business, technology the necessity to understand complex and large information is increasing. The process of retrieving useful knowledgefrom such a voluminousdatabase is also becoming tedious now a day.Data mining is motivated by applications which need new potential that is lacking in current technology [3]. Such applications can be broadly classified as

a) Scientific, healthcare and engineering data
b) Business and e-commerce.

III. DATA MINING IN HEALTHCARE

Basically health care industry is an area with rich and surplus data. The amount of data generated in health care industry is very large and they are stored in separatedatabases. The data from these databases are then fetched for diagnosis of patients.Healthcare industry generates data about patients,disease diagnosis, hospital resources, electronic patient records, medical devices etc.Data Mining has great attention as the need arises to convert such data into useful information for applications including businessmanagement, market analysisand decision support.

Sensing and detecting intruder detection in wireless sensor network

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ABSTRACT

Wireless Sensor Networking is one of the most capable technologies that have applications ranging from health care to tactical military. Although Wireless Sensor Networks (WSNs) have appealing features, due to the lack of a physical line of defense, the security of such networks is a big concern, especially for the applications where confidentiality has prime importance. Therefore, in order to control WSNs in a secure way, any kind of intrusions should be detected before attackers can harm the network (i.e., sensor nodes) and/or information destination (i.e., data sink or base station). In Intrusion Detection Systems (IDSs) that are proposed for WSNs is presented. Firstly, detailed information about IDSs is provided. Secondly, a brief of IDSs proposed for Mobile Ad-Hoc Networks (MANETs) is presented and applicability of those systems to WSNs are discussed. Thirdly, IDSs proposed for WSNs are presented. This is monitored by the analysis and comparison of each scheme along with their advantages and disadvantages. Finally, guidelines on IDSs that are hypothetically applicable to WSNs are provided. In wireless network, every node admittances the network in a cooperative manner and randomly delays transmissions to avoid collisions by following a common back off rule. However, in such a distributed environment without a centralized controller, a malicious node may deliberately choose a smaller back off timer and selfishly gain an unfair share of the network throughput at the payments of other normal nodes' channel access opportunities. The distributed nature of the Carrier Sense Multiple Access/Collision Avoidance (CSMA/CA) based wireless protocols allows malicious nodes to deliberately manipulate their back off parameters and, thus, unfairly gain a large share of the network throughput. - In wireless network, every node admittances the network in a cooperative manner and randomly delays transmissions to

Survey on Image Segmentation Techniques In Mammogram Images

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Abstract - In research and clinical applications digital imaging devices plays vital role in tissue recognition and segmentation. Image segmentation helps to partitioning a digital image into multiple segments. Mammogram is an efficient method for detecting breast cancer at earlier stages. The main objective of segmentation is to simplify and or to modify the representation of an image into something that is more significant and easier to examine. Image segmentation is normally used to find objects and boundaries such as lines, curves and so on., in mammogram images. The result of image segmentation is a set of segments which covers the entire image collectively. This paper concentrates on various image segmentation techniques on mammogram images. Image segmentation is an important part of image analysis process. It differentiates between the objects that want to be inspected further and the other objects or their background. The segmentation techniques such as edge detection, thresholding, region growing and clustering are used to segment the image.

Keywords— **Image Segmentation, Mammogram Images, Segments, Segmentation Techniques**

I.INTRODUCTION

In medical field especially breast cancer is one of the disease which kills women if proper diagnosis or treatment are carried out. To overcome the cause of death it is better to find out the affected area and can follow the advice from the radiologist. Digital Imaging is growing day by day, achieving new methods and technology. Nowadays particular disease can be diagnosed easily as technology emerges.Image Segmentation is the basic step to examine the images and to extract data from database. This work deals on the basic ethics on the methods used to segment an image. This paper focuses on the various methods that are widely used to segment the image in medical field. It is the basic step after preprocessing the images such as mammogram images. Image segmentation plays significant role in detection on tumors. The segmentation based on texture feature would classify the breast tissue under various categories.[8]. In the earlier period several years there has been great interest in image processing and analysis techniques in mammography. One common approach for detecting abnormalities in mammograms is to use [2] a sequence of heuristics,such as thresholding, which includes texture analysis to detect abnormalities automatically [5].

The abnormalities in a mammogram are masses and calcifications. The deposits of calcium are called calcifications. The Breast cancer is determined by the shape of the mass as cancer is categorized as benign or malignant. Generally, benign tumours are round or oval in shape and a malignant tumour can be observed with a partially rounded mass with a prickle or an irregular outline [4].

Benign tumours are non-cancerous whereas malignant tumours are cancerous in which, the cells grow abnormally [5].Mammogram image segmentation focuses on partitioning the image into significant Regions of Interest (RoI). The segmentation algorithms can be decomposed into breast region segmentation and RoI

STUDY ON DATA PREPROCESSING TECHNIQUES FOR TEXT MINING

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Abstract : Data mining is the utilization of calculations to separate the data and examples determined by the KDD procedure. Data mining is frequently characterized as finding shrouded data in a database. It has been called as exploratory Data investigation, Data driven revelation, and deductive learning. Data preprocessing is an Data mining procedure that includes changing crude information into a reasonable configuration. Data Preprocessing is a vital errand and basic advance in Text mining. Text mining is a procedure to separate brilliant data from the content. It is done through examples and patterns conceived utilizing factual example learning. Right off the bat, the information is organized. Subsequent to organizing, designs are gotten from this organized information lastly; the yield is assessed and translated. The primary utilizations of Text mining incorporate focused knowledge, E-Discovery, National Security, and online life checking. In the zone of Text Mining, Data preprocessing utilized for extricating intriguing and non-unimportant and learning from unstructured Text information. The Data preprocessing methods are connected on the objective informational collection to decrease the extent of the informational collection which will expand the viability of IR System. The goal of this investigation is to break down the issues of preprocessing strategies, for example, Tokenization, Stop word evacuation and Stemming for the content records and diverse pre-preparing methods to mine Text information. Text mining applications incorporate – Information Retrieval, Information Extraction, Categorization, and Natural Language Processing. The pre-handling of content mining begins with Tokenization, trailed by Stop-word expulsion lastly stemming.

keywords: Data preprocessing,Text Mining Process, Stop-word removal, Tokenization

1.INTRODUCTION

Data preprocessing is an Data mining system that includes changing crude Data into a justifiable arrangement. Data pre-preparing is a regularly disregarded yet imperative advance in the Data mining process. Genuine information is regularly inadequate, conflicting, and additionally ailing in specific practices or slants, and is probably going to contain numerous blunders.Data preprocessing is a demonstrated strategy for settling such issues. Data preprocessing gets ready crude information for further processing.Data preprocessing gets ready crude Data for further processing.The customary Data preprocessing strategy is responding as it begins with information that is accepted prepared for investigation and there is no input and grant for the method for information accumulation. The information irregularity between informational collections is the principle trouble for the information preprocessing.

A survey on Intrusion Detection System in Wireless Sensor Network Using Key Distribution

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[1]Ph.D(Part Time) Scholar, [2]Assistant Professor
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ABSTRACT

Wireless Sensor Networks (WSNs) are susceptible to various kinds of protect threats that can destroy the performance of the network and may cause the sensors to send wrong information to the sink. Key management, authentication and secure routing protocols techniques used in WSNs. Intrusion Detection System (IDS) is another techniques and analysing the network in order to detect abnormal behaviour of the sensor node(s). Researchers have proposed various approaches for detecting intrusions in WSNs during the past few years. An ID starts with network initialization where every node agrees the list of parental nodes through which destination can be reached with equal distance. Each node chooses a parental node among selected parents to forward the data and begins pair wise keys with 2-hop parent nodes. Throughout data forwarding, child forwards the packet to 1-hop distance parent handles acknowledgment from 2-hop distance node and agrees the number of packets forwarded and dropped based on successful and unsuccessful arrangement. Every node sends to proceedings report holding observations on the parent via different path to destination at a particular intermission of time called an estimation period. Destination recognizes the malevolent node by comparing report acknowledged from each node with number of data packets received. This method detects the malicious nodes initially and also efficiently.

Keywords: WSN, IDS, Malicious Node, 2-Hop Acknowledgment.

1 Introduction

Wireless Sensor Networks (WSNs) are distributed, structure less, fault-tolerant, accessible and self-motivated in nature [2] Akyildiz et al., These systems are low cost and stress-free to install in an area. These are manufactured small in size, low power and self-controlled nodes called sensor nodes. These nodes have small memory space; less calculation capacity and short period (hang on battery life). Sensor nodes gather useful data from their environments and convey it to the end user organized system called Base Station (BS) or sink for analysis. Such networks might be used for field surveillance, judging volcanic activities, eyeing physical movement, expecting tsunami, etc. Sensor nodes are tightly organized in the sensor field (area under consideration). They conserve a topology and start sensing the environment. Data join together from the environments is processed and conveyed to the BS or sink using any routing protocol. Their topology is dynamic and changes regularly owing to the limits of the sensor nodes. Sensor nodes may get injured owing to heavy wind, rain, sunshine, animals, etc., or their battery-operated may exhaust. Here, routing protocol plays a significant role because nodes leave or join the sensor network at asymmetrical intermissions. There are a number of dispatcher protocols proposed for WSNs. [1]Akkaya and Younis categorize them into three major types: hierarchical, data-centric and location-based routing protocols.

Security is a major anxiety for all types of network examples whether they are wired networks, mobile ad hoc 70 A.H. Networks or newly developing IP Multimedia Subsystems (IMSs). The vision for the safety of a network is protected transmission and dependable distribution of packets from a source to the endpoint. In WSNs, key organization, verification [15] Liu et al., and endangered routing protocols deliver secure communication while lacking reliable distribution of messages. In other words, these mechanisms can protect the network from third parties attacks but show failure against the inside assaults. These mechanisms aim to provide data confidentiality, data verification and data honesty. In an outside attack, when an interloper tries to get access to the information, these mechanisms protect the secret data. During a secret attack, the sensor node that is a part of the sensor network starts performing malevolently without trying to get access to the data of the message. These attacks aim to affect the output of the network (i.e., by dropping received packets without forwarding them). Hence, dangerous information will not spread the sink or BS that is significant in making decisions about the relative sensor field.

WSNs are vulnerable to a number of types of security threats that can destroy the overall performance of these networks. According to [29] Wood and Stankovic., several attacks are possible on different layers of the sensor node that may cause DoS in WSNs. In [12] Karlof and Wagner., authors discuss numerous routing protocol attacks that affect the output of the sensor network. The option of Sybil attack in WSNs is briefly discussed in [17] Newsome et al., Where some countermeasures for these attacks are also accessible. Rendering to it, Sybil attack can affect different protocols in distributed storing, data aggregation, routing, voting, etc. A nice work is presented in [20] Roosta et al., that covers a number of potential attacks that can be launched with malevolent intent. This paper provides a complete taxonomy of security threats on sensor networks. In [4] Bojkovic et al., authors conduct a survey on security issues of WSNs. They focus on different attack scenarios in WSNs and key dissemination mechanisms. According to them, IDS is an underdeveloped facility for sensor networks that should be explored.

IDS [11] Innella and McMillan., is a security mechanism used to detect the nonstandard behavior of the mobile nodes in ad hoc systems[27]Wang., and customers in IMS [7]Farooqi and Munir., It is assumed that 'IDS is not fit' for securing WSNs. It appears true because IDS methods are computationally luxurious. However, there is a quick change in technology, and keeping in mind the future perspectives, the abilities of a sensor node will increase. The sensors will have additional memory and existence time and might be used for communicating multimedia information [2] Akyildiz et al., Likewise, these devices will be used for subsurface applications in future [10] Heidemann et al., Current research in Radio Frequency Identification (RFID) has given biological to Radio frequency identification Sensor Networks (RSNs) [5] Buettner et al., This one binds together the advantages of RFID and WSNs. These networks will become noticeable and might be used by us in our daily life as a lot of investigation is in progress for its different applications. On the other hand, if we consider a WSN that is working for tracing the movement of the opponent, it can provide very dangerous information for making a approach to beat the enemy in that area.

SURVEY OF DEFECT DETECTION ON PATTERNED FABRICS

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ABSTRACT

The textile industry is mostly concerned with the design, manufacture and supply of fabrics. It is one of the main sources of revenue generated industry. The price of fabrics is severely affected by the defects of fabrics that represent a major risk to the textile industry. A very small percentage of defects are detected by the physical inspection even with highly trained inspectors. Although different types of fabric defects had been referenced in literatures, only a few patterned fabrics have been referenced. Researchers have been better result for minor defects. Automatic defect detection system will increase the defect detection percentage. It is economically profitable. An Artificial Neural Network is used as defect identification model. Digital image processing is the extracted option given as input to the neural network, it identifies the defects. This survey will be discussed about the existing methods for the major defects detection such as hole, broken end, thick bar, thin bar, multiple threading and knots.

Keywords: Fabric defect detection; Inspection process; Automatic defect detection; Digital Image processing; Artificial Neural Network.

I. INTRODUCTION

Textile and garment industries are one of the fastest growing and competitive markets worldwide and form a major part of production, manufacturing, employment and business operations in many developing countries. The changes have increased both yield and quality of fabrics, apart from reducing expenses and labor cost. The majority of the companies are paying more attention on improving their quality of usable finished product and achieving faster production speeds.

This is especially more important in textile materials, as defective fabrics reduce its price significantly. Among the various failures faced by garment industries, fabric faults constitute more than 85% (Sengottuvelan et al., 2008). It is considered as an serious issue, as failure in defect detection may result in warranty claims liability, recalled orders along with loss of customers, all of which affect the growth of the company extremely. According to Srinivasan et al. (1992), the price of defective fabrics (second quality) decreases by around 45% to 65% of that of first-quality fabric. Second quality fabrics that may contain a few major defects and/or several minor structural or surface defects (Chan and Pang, 2000). Thus, in order to gain more profit by producing and selling more first quality fabric, it is essential for textile factories to install advanced machines that can eliminate fabric defects. However, changes in the production processes may lead to introduction of more defects.

Digital Image Processing technique is used to extract the features of patterned fabrics. Image processing techniques will help to production increase in fabric industry; it will also increase the quality of product. They have to detect small factor that can be located in wide area that is moving through their visual field.

Inspection of fabrics forms an important aspect of quality control of automated production process and is needed to scrutinize the quality of fabric. Inspection is an action that involves measuring, examining, testing and gauging the individuality of fabric and comparing the results with the specification to establish whether conformity has been achieved for each characteristic. One another important aspect of inspection is defect detection, which is the act of identifying abnormalities that spoils the aesthetics (clean and uniform appearance of the fabrics) and affects inspection parameters like dimensional stability. An expert in human visual inspection can only catch around 60% to 75% of the significant defects (Mak et al., 2012). Also, the detection results are usually not accurate. According to Sari-Sarraf and Goddard (1999) and Kumar (2003), even the most highly trained and qualified inspectors can identify only about 70% of the defects. Furthermore, textile industries are facing increasing pressure to be more capable and competitive by reducing costs. Therefore, it is highly desirable to automate the process of fabric inspection that can be used to improve the quality of fabrics and garments.

In particular, the study focuses on patterned fabrics, which consists of a repetitive design or decorative designs. The wide usage of patterned fabrics has increased the demand in the quantum of production, which to a great extent, is fulfilled by the mechanization process of textile manufacturing. One important process in fabric automation is quality control, which play a predominant role in the maintenance of standards and is mainly accountable for assessing and identifying whether or not the manufactured fabric is up to the expectation of buyer's requirement. As modern manufacturing processes of these fabrics are not perfect, defective patterns are frequently found on these items. Defect detection on patterned fabric is a challenging task due to the appearance of a repetitive pattern on fabric.

I.1. Fabrics and Patterned Fabrics

Fabrics, defined as textile materials produced through weaving or knitting, play a vital role in human life from prehistoric times and its usage can be traced back over 8500 years. Its varied importance in daily life can be understood from its wide usage in clothing, furnishing, symbolic communication and commerce. It is used for protecting, cleaning, holding things and tie things together. It is a flexible woven material consisting of a network of natural or artificial fibers often referred[12] to

A SURVEY ON BIG DATA PRIVACY USING HADOOP ARCHITECTURE

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***Abstract*: Big data is the term for any gathering of datasets so vast and complex that it gets to be distinctly troublesome to process using traditional data processing applications. The challenges include analysis, catch, sharing, stockpiling, exchange, perception, and security infringement. It is a set of techniques and technologies that require new forms of integration to uncover huge concealed qualities from substantial datasets that are assorted, complex, and of a huge scale. This environment is used to acquire, organize and analyze the various types of data. For such data-intensive applications, the Apache Hadoop Framework has recently attracted a lot of attention. This framework Adopted MapReduce, it is a programming model and a related execution for preparing and producing large data sets. The technologies used by big data application to handle the massive data are Hadoop, Map Reduce, Apache Hive, No SQL and HPCC. This paper refer privacy and security aspects healthcare in big data and also randomization, theoretical limits associated with privateness-preservation over immoderate dimensional records sets. This hadoop architecture handles data loss and intermediate data capturing by hadoop online prototype. Finally this survey deals with parallel processing with massive data sets and capturing, managing within a time perod.[1]**

Keywords: Big Data, Hadoop, HDFS, MapReduce, Hadoop Components, Hive, NoSQL, Hpcc

1. Introduction

Big data is a biggest popular expressions in space of IT, new advances of individual correspondence driving the big data new trend and internet population grew day by day but it never reach by 100%. The need of Big Data created from the extensive organizations like facebook, hurray, Google, YouTube etc for the purpose of analysis of enormous amount of data which is in unstructured frame or even in organized shape. Google contains the vast measure of data. So there is the need of Big Data Analytics that is the processing of the complex and massive datasets. This information is not quite the same as organized information as far as five parameters – variety, volume, value, veracity and velocity (5V's). The five V's (volume, variety, velocity, value, veracity) are the challenges of big data management [2]

1.1 Characteristics of Big Data

Volume: Information is steadily developing step by step of different types over MB, PB, YB, ZB, KB, TB of data. The data results into large files. Excessive volume of data is main issue of storage. This main issue is resolved by reducing storage cost. Data volumes are expected to grow 50 times by 2020.

Variety: Information sources are amazingly heterogeneous. The records comes in different configurations and of any sort, it may be structured or unstructured such as text, audio, videos, log files. The assortments are interminable, and the information enters the system without having been measured.

Velocity: The information comes at fast. Now moment is past the point of no return so big data is time delicate.. Some organizations data velocity is main challenge. The social media messages and credit card transactions done in millisecond and data generated by this putting in to databases.

Value: It is a most important v in big data. Value is main buzz for big data because it is important for businesses, IT infrastructure system to store large amount of values in database.

5.Veracity: The expansion in the scope of qualities run of the mill of an extensive information set. When we managing high volume, velocity and variety of data, the all of data are not going 100% correct, there will be messy information. Big data and examination innovations work with these sorts of information. Immense volume of data (both structured and unstructured) is management by organization and administration. Unstructured information is an information that is not present in a database. Unstructured data may be text, verbal data or in another form. Textual unstructured data is like power point presentation, email messages, word reports, and moment kneads. Information in another arrangement can be .jpg images, .png images and audio files. The parameters five v's of big data describes in fig 1.

IRA-International Journal of Management & Social Sciences
ISSN 2455-2267; Vol.07, Issue 02 (2017)
Pg. no. 355-363
Institute of Research Advances
http://research-advances.org/index.php/RAJMSS

Institute of Research Advances

Households' Savings Behaviour of Dindigul District, Tamilnadu – A Comprehensive Analysis (With Special Reference to Thoppampatti Block)

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Type of Review: Peer Reviewed.
DOI: http://dx.doi.org/10.21013/jmss.v7.n2.p27

How to cite this paper:
Brindha, K., & Priya, S. (2017). Households' Savings Behaviour of Dindigul District, Tamilnadu – A Comprehensive Analysis (With Special Reference to Thoppampatti Block). *IRA-International Journal of Management & Social Sciences* (ISSN 2455-2267), 7(2), 355-363.
doi:http://dx.doi.org/10.21013/jmss.v7.n2.p27

A STUDY ON PROBLEMS AND PROSPECTUS WITH REFERENCE TO TURMERIC CULTIVATION IN COIMBATORE CITY

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ABSTRACT

A agriculture is the largest sector of economic activity in India. It provides not only food and raw material but also employment to a very large proportion of the population. In India turmeric is a traditional crop. It is also known as the "Golden Spice". India is the largest producer, consumer and exporter of turmeric in the world. Indian turmeric is considered to be the best in the world market because of its high curcumin content. The main objective of the study is to analyse the problems and prospectus related to turmeric cultivation in Coimbatore city. For the purpose of study 50 samples were drawn and data were collected from the famers cultivating turmeric were Percentage analysis, Mean rank and Chi-square analysis were used as tools to analyse the data. It is concluded that the maintaining of labour by farmers are having level of impact in their business when not retained the small farmers had to meet un-necessary and unexpected losses. Hence it is important to encourage the farmers and help them to achieve greater heights in the years to come.

Keywords: Turmeric, Cultivation and Farmers

Introduction

India is basically an agrarian society where sole dependence has been on agriculture since time immemorial. In the olden days, the agricultural produce was fundamentally bartered by nature where farmers exchanged goods for goods and also against services. Gradually the scenario changed with the changing times and agriculture produce began to sold with an element of commercial value. The people started to exchange the agriculture produce for exchange of money. From trading to marketing of agricultural produce began although mostly it is a way of traditional selling. The marketing as a term is broader than traditional trading. And agricultural marketing as a concept is still evolving in Indian society. In India, there are networks of cooperatives at the local, regional, state and national levels that assist in agricultural marketing. The commodities that are mostly handled are food grains, jute, cotton, sugar, milk and areca nuts. First of all the agricultural market is very competitive because the producers are all very small and large in number. Therefore, they don't have a great influence on the price of their products. Agricultural producers are what are known as price takers, producers that have little or no influence on the price of their output. [4]. There are several risk elements involved in

CONSUMER BUYING BEHAVIOR TOWARDS ORGANIZED RETAIL STORES IN COIMBATORE CITY

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Abstract

The Indian retail industry is one of the fastest growing in the world. Retail industry in India is expected to grow to US$ 1,200 billion by 2021 from US$ 795 billion in 2017. The main objective of the study is to study the consumer perception towards organized retail stores and know the sales promotion measures adopted by organized retail stores. A sample of 150 respondents has been taken for the study by adopting convenience sampling method. The study is mainly based on primary data. The data have been collected through questionnaire in Coimbatore city. The statistical tools such as percentage analysis, T-test, ANOVA, chi-square have been applied to analyze the data. The result shows that the factors such as discounts for products, guarantee for the products and store location have influenced the consumers to prefer the organized retail stores.

Keywords: Indian Retail Industry, Organized Retail Stores and sales promotion measures.

INTRODUCTION

Retail is a sale of goods to the public in relatively small quantities for use or consumption rather than for resale. The Indian retail industry is one of the fastest growing industries in the world. It is expected to grow from US $ 795 billion 2017 to US $ 1200 billion by 2021. India is preferred as a 5th largest retail destination in the world. It accounts 10 per cent of country's gross domestic products (GDP) and it contributes around 8 per cent of the Indian employment.

The Indian retail market expected to increase by 60% to reach US $ 1.1trillion by 2020. Overall retail market is expected to grow from 9% in 2017 to 18% in 2021. India is expected to become third largest consumer economy by 2025 with US $ 400 billion. The survey of KPMG's global consumer and retail practice's 2017, found that only 23% of the customers prefer to do purchase in stores whereas the rest of them prefer to do shopping from online.

Gartner's customer experience reports in 2017 highlights that primary basis for the differentiation in competition is relied on the customer experience which 89% of the marketing leaders expect.

The development of the retail sector is not only seen in metros but it is also seen in tier II and tier III cities. The factors which take the growth in the organized retail market are healthy economic growth, changing demographic profile, increasing disposable incomes, urbanization, and changes in consumer tastes and preferences. Global retail survey reveals 77% of the consumers wanted the offers of the products which expected to satisfy their personal tastes and preferences.

To attract the FDI in retail the government of India has introduced reforms for the business. Government approved 51% in multi-brand retail and 100% in single brand retail. The plans have also been made for 100% FDI in e-commerce.

LITERATURE REVIEW

Sangvikar and Hemant Katole (2012) have made a study on consumer purchase behavior in organized retail outlets. Samples of 150 respondents have been taken for the study. Tools such as one way ANOVA, chi-square test and non-parametric tests have been applied to analyze the data. The study has focused on behavior of the consumer mainly on the purchasing pattern in varies store formats and store preference on the basis of product, availability, spending pattern, consumers preferred store, sales man services and store layout. It has been observed that the consumers prefer retail outlets because of price discount, followed by variety of products in the store and convenience to the customer. It has also been observed that departmental stores are most popular amongst consumers. Customers purchase behaviour varies with price and availability of products and customers spending pattern, shrinks due to poor quality of products.

Kumar (2015) have made a study on consumer buying behaviour towards organized retail stores. The objective of this study is to get the feedback about consumer perception, attitude and satisfaction of the retail stores. A sample of 1000 respondents has been taken for the study. Tools such as percentage analysis and multiple regression analysis were applied for the study. The preferences of the consumers clearly indicate the importance of consumer buying behaviour in influencing their purchase, the additional facilities expected in handling defective goods and many. The results may help the management of retail stores to understand about the factors that influence the consumer perception, attitude and satisfaction towards organized retail stores.

Sandeep Chaudhary and Shruti Sharda (2017) have made a study on Consumer Perception towards Organized Retail Store: A Factor Analytical Approach. The study has analyzed the various factors that affect the customer perception towards organized retail stores. The data has been collected with the help of structured questionnaire and a sample of 100 respondents from Jalandhar, Amritsar and Ludhiana were taken for the study. The factor analysis has been applied. The result indicated that

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 6.887
Volume 7 Issue IV, Apr 2019- Available at www.ijraset.com

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The Effect of Knitting Employees Perception of Performance Appraisal on their Work Outcomes

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Abstract: *The aim of the study is to assess the perception of performance appraisal practice of knitting units and its effect on employees' work outcomes, in the form of work performance, affective commitment and turn over intention as well. To undertake these general objective six specific objectives with their underling hypothesis were designed and assessed by quantitative& qualitative research design. To set background information on the proposed hypothesis the theoretical, conceptual and empirical related literatures were reviewed and most of the literatures finding implies that perception of employees on performance appraisal system had a significant influence on their work out comes.*

In conducting this study, the required data is obtained through structured questionnaires and interview. The structured questionnaire was adopted from four prior related studies. To check the reliability and validity of the adopted instruments the Cranach's coefficient alpha test and the construct and content validity test was carried out. To determine the sample from the total population of 202 employees, first, the target population was stratified in to seven stratums (based on business processes) and then to select respondents from each stratum simple random sampling technique was applied; having this, the researcher uses formula based-sample size determination. Basically, a total of 134 questionnaires were distributed to the sampled employee, among these 119 were returned, of which, 9 responses are uncompleted. Thus, 110 returned questionnaires (i.e. representing 82% of response rate) are analyzed using statistical package for social science (SPSS version 16). In the analysis descriptive statistics, correlation analysis and simple regression analysis was performed.

The descriptive finding of the study shows that in knitting units employees had low level of perception towards the existing performance appraisal practice. Employees of knitting units have high level of work performance, low level of affective organizational commitment and moderate level of turn over intention.

The correlation analysis result also indicates employees' perception of performance appraisal practice had positive and significant relationship with work performance and affective organizational commitment; negative and significant relationship with employees' turnover intention. Whereas the finding of simple regression analysis indicates employees' perception of performance appraisal practice had positively and significantly influence work performance and affective organizational commitment whereas, negatively and significantly influence employees' turnover intention. Therefore, it is recommended that, the organization should have to implement performance appraisal practice in the best possible way; there is the need to develop a good feedback system, appropriate and adequately filing, discussing appraisal results, design ways to communicate appraisal results, review appraisal on due attention, participatory appraisal rating system and have to design procedure to make aware of every employee about the appeal process. In doing so, human resource department should play a vital role in the overall process of performance appraisal. Finally, it is forwarded that further research has to be done in more completed and comprehensive way.

Keywords: Emloyees Perception; performance appraisal; Knitting units.

I. INTRODUCTION

A. Back ground of the study

In this world of competition as organizations effort to remain competitive and sustainable, human resource (HR) professionals and strategic planners should collaborate strongly in designing strategies, which are more productive and useful. Based on many researches, the most winning organizations in the 21st century will be those to focus on integrated HR processes and systems. So the role of human resource becomes more and more vital which includes personnel related areas such as job design resource planning, performance appraisal system, recruitment, selection, compensations and employee relations. Among these functions, one of the most critical ones that bring global success is performance appraisal[3].

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.177
Volume 7 Issue VIII, Aug 2019- Available at www.ijraset.com

A Study on the Growth of Select Nationalized Banks in India

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Abstract: ***Banking sector plays an important role in the financial development of the country. The banking system in India is a large network of bank branches and provides many kind of financial services to the public. The current study evaluates the growth of the top five Nationalised banks in India terms of Deposits, Advances, Investments, Interest Income, Net Worth, Net Profit and Non- Performing Assets. The current research is based on the descriptive and analytical nature. The data used for the study was entirely secondary in nature and was taken from the annual reports of the respective banks for the period 2014-15 to 2018-19. The study found that the Punjab National Bank and Canara Bank had more deposits, advances and Interest income than the Central Bank of India, Bank of Baroda and Bank of India. But in terms of Investments and Net worth the Bank of Baroda plays better role than the other select banks. Net Profit of the all the select banks shows the fluctuating trend during the study period. In the case of Non-Performing Assets the Bank of India had more Non-Performing Assets than the other select banks. Based on the findings, the study reveals that among all the five banks the Punjab National Bank and Canara Bank performs well than the other banks.***

I. INTRODUCTION

Banking constitutes an important sector of an active financial system of a country. The banking sector provides a strong basis on which the structure of a modern financial system of country stands. The developments of banking have a profound effect on the growth of a country. Enhancing profitability, maintaining liquidity and improving growth of performance of commercial banks are the key objectives of the economic reforms in India.

A compact and well-functioning financial sector is a dynamic machine behind the economic development in a country. In the financial sector, commercial banks play a very dynamic role by mobilizing the savings and allocating them towards economic development. Though in global frame work, Indian banking is an advantageous position on account of having a network throughout the country.

In India, commercial banking holds an important segment of the territory sector. It act as the backbone of our economic progress and prosperity. It plays a pervasive role in the development channel. Indian banking sector has under gone major transformation during the past three decades and has made more socially relevant and development oriented. The financial sector reforms also include increase in the number of banks due to the entry of new private and foreign banks, increase in transparency of the banks' balance sheets through the introduction of prudential norms and increase in the role of the market forces due to the deregulated interest rates. These have significantly affected the operational environment of the Indian banking sector.

Today, the Indian commercial bank management is facing two-faced challenge to not only to improve the profitability but also serve to the public in a right way. It can be meant that greater efficiency and effectiveness in the noble task of fulfilling the socio-economic responsibilities and commercial viability of the banking should not be ignored. As per the banking sector healthy growth, term viability and lasting long-term viability lasting contribution of banks must accord due to emphasis on profitability.

A Nationalised Banks

The concept of the banking system in India was developed during the British era. The British East India Company has to its credit establishing three banks in India namely Bank of Bengal during 1809, Bank of Bombay in 1840 and Bank of Madras in 1843. All these three banks were amalgamated and the Imperial Bank came into existence which was further taken over by SBI during 1955.

Nationalisation refers to the transfer of public sector assets to be operated or owned by the state or central government. In India, the banks which were previously functioning under private sector were transferred to the public sector by the act of Nationalisation and thus the Nationalised banks came into existence. The history of banking in India states that the post-independence, the Government of India initiated various measures to play an active role in the economic development of the nation which resulted in the

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MEDICLAIM POLICYHOLDER'S AWARENESS AND SATISFACTION LEVEL OF SELECTED PRIVATE HEALTH INSURERS WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT

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ABSTRACT

In India, health insurance is regarded as the most cost – effective route to tackle the health care expenses. The primary objective of health insurance is to provide protection against financial losses caused by unforeseen health problems and at the same time relieve anxiety and mental agony. The objectives of the study is to examine the level of awareness of mediclaim policyholders on mediclaim policies towards selected private sector health insurance companies and indentify the motives of availing mediclaim insurance policy by the policy holders. The statistical tools used such as (i) Frequency Percentage Analysis (ii) Analysis of Variance (ANOVA) (iii) Weighted Average Analysis (iv) Garrett Ranking (v) Chi-square Test. Majority of the undergraduate policyholders (69.3%) have higher average level of awareness on facilities offered by mediclaim policy. Chi-square depicts that there is no significant association between the policyholders' educational qualification and the awareness of facilities offered by mediclaim policy.

Keywords: Health Insurance, Health Insurance Policies, Awareness level, Motives of availing mediclaim policy, Satisfaction level.

Introduction

The development of human resource depends on health of the citizen. Good health, when protected, not only adds benefit to an individual but also aids the well-being of the family, the community, the society and the country as a whole. People prefer not only the basic amenities, but also social goals, education and health care. Today, expenditure on healthcare is highly increasing in price all around the world. Therefore, it is absolutely necessary to ensure that one should be adequately equipped to meet the medical expenses. From the past decade, there has been an increasing incidence of lifestyle diseases coupled with raising medical cost. Even though awareness on health issue is high, there is an evidence of inadequacy of saving for unforeseen medical emergencies. According to a survey conducted by the National Sample Survey Organization (NSSO), 40 percent of the people.

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Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 10, Issue, 11(B), pp. 35843-35846, November, 2019

International Journal of Recent Scientific Research

ISSN: 0976-3031

DOI: 10.24327/IJRSR

Research Article

AN EMPIRICAL STUDY ON ADVERTISING FOR FMCG IN RURAL MARKETS WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT

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DOI: http://dx.doi.org/10.24327/ijrsr.2019.1011.4180

ARTICLE INFO

Article History:

Received 12th August, 2019
Received in revised form 23rd September, 2019
Accepted 7th September, 2019
Published online 28th November, 2019

Key Words:

Rural Market, FMCG, Advertisements, Durable Goods, Rural Consumers

ABSTRACT

In modern days marketing has a special significance in the management of business and industry. The traditional approaches were no longer found suitable because of various innovations are made during the recent past even in marketing. Rural marketing identifying and serving the needs of consumers living in villages. In India 75% of the total population are living in rural areas. About 30% of our national income generated by rural marketing.

Fast Moving Consumer Goods are the goods which are sold quickly at low cost. FMCGs have a short shelf life as a result of high consumer demand. Advertisement is a marketing communication, a message to promote or sell a product, service or area.

275 Respondents were selected by convenient sampling method in various rural areas in Coimbatore District. For getting result of the study simple percentage analysis, Garrette ranking technique has been use for analysing data. And chi – square test and ANOVA has been used for testing hypothesis. This present study have found which type of advertisement is helping to FMCG companies to increase their sales, what are the problems faced by rural consumers in present advertisement, what details they are expecting in FMCG advertisements. Hence the FMCG companies have pay attention on advertisement to satisfy the rural consumers and get more turn over by boost up their sales.

INTRODUCTION

Marketing is a wide and comprehensive term. It treated as philosophy, knowledge or guideline to achieve business goals. In modern days marketing has a special significance in the management of business and industry. The traditional approaches were no longer found suitable because of various innovations are made during the recent past even in marketing. A modern approach has become inevitable to achieve the basic objectives. The consumer is at the top and his satisfaction can justify the existence of the business. The activities of the business firm should be directed first to found out what the consumer wants and then to satisfy them. Marketing practices tend to be seen a creative industry, which include advertisement, distribution and selling.

Rural Markets

Rural areas in India is considered today as a huge storehouse of untapped marketing opportunities by marketers. India is a very large country. Rural marketing identifying and serving the needs of consumers living in villages. In India 75% of the total population are living in rural areas. About 30% of our national income generated by rural marketing. Some villages are located in remote areas and modern facilities have not yet reached them.

The primary source of income for rural consumers is agricultural. A few year back, the rural market in India was an unknown area and many companies were not interested to entering the rural market in India. As the demand pattern was fragile, seasonal and poor purchasing power of the people.

By special interest taken by Government many regulated markets have been established in our country to facilitates proper marketing of farm produce. Rural marketing is a two way process. The influx of products from urban to rural area for both manufacturing and consumption. Likewise efflux of the products also from rural to urban areas.

The urban to rural flow consists of agricultural inputs and Fast Moving Consumers Goods like soaps, detergents, cosmetics and consumer durable like two – wheelers, television sets and electrical appliances etc., the rural to urban flows consists of agricultural products. There is also movements of rural products within the rural areas for consumption.

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ISSN : 0950-0707

(28)

"A Study Of Saving And Investment Pattern of Salaried IT People with Special Reference To Chennai City (India)"

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ABSTRACT:

Investment is an type of activity that is engaged in by the people who have to do savings i.e. investments are made from their savings, or in other words it is the people invest their savings. A variety of different investment options are available that are bank, Gold, Realestate, post services, mutual funds & so on much more. Investors are always investing their money with the different types of purpose and objectives such as profit, security, appreciation, Income stability. Researcher has here in this paper studied the different types and avenues of investments as well as the factors that are required while selecting the investment with the sample size of 60 salaried employees by conducting the survey through questionnaire in Chennai city of, India. Actually, here the present study identifies about the preferred investment avenues among individual investors using their own self-assessment test. The researcher has analyzed and found that that salaried employees consider the safety as well as good return on investment that is invested on regular basis. Respondents are much more aware about the different investment avenues available in India except female investors. This Current study deals with the saving and Investment Pattern of Salaried IT People with Special Reference to Chennai City (India).

INTRODUCTION:

The developing countries in world , like India face as seen the enormous task of finding sufficient capital to utilize in their development efforts. Most of countries find it difficult at at stage to get out of the vicious circle of poverty that is prevailing of low income, low saving, low investment, low employment etc and the list goes on. With high capital output ratio, that is observed India needs very high rates of investments that would take and make leap forward in her efforts continues of attaining high levels of growth.

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.177
Volume 7 Issue XII Dec 2019- Available at www.ijraset.com

A Study on Impact of Smartphone on Users

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Abstract: The intention of this study is to investigate how Smartphone's are impacting the society and also how Smartphone's are going to transform the culture, social life, technology landscape and other diverse aspects of modern society. The objective of the study is to assess the advantages and disadvantages of Smartphone usage and to compare the advantage and disadvantage impact among selected personnel variables. The sample size is 200 respondents.
The statistical tools used in this study are Simple Percentage, Rank analysis, Paried samples test, ANOVA, T-test. The intention of this study is to understand all Advantages and disadvantages aspects of Smartphone users.
The study primarily focus on impact of Smartphone on business, education, health issues, human psychology and social life. The study findings among several items, respondents have agreed that they were able to improve their common skills and knowledge. The Smartphone distract students from their studies and the respondents feel it leads to lack of interaction between individuals.
Keywords: Smartphone, Mobile Applications, Social Impact, Addiction, Health.

I. INTRODUCTION

The first ever cell phone was formulate by Martin Cooper on April 3rd, 1973, that was only for two troys. The height of that phone was 10 inches, depth 3 inches and the width an inch and a half (motorcity, 2003). At that time it was the only way to interface with each other.

And at that time it was not available to the general population and it was used for the first time only businesses and government. In 1992, the first Smartphone formulate by IBM, known as a Simon Smartphone.

This was a big break through in the field of telecommunications and for the requirements of people. Because people want to connect with each other with in a small period of time. It becomes possible to send messages and sending email to each other with the help of Smartphone.

To understand that one technological device could change culture of customer, style of living and the whole population. After the formulated of Smartphone a sudden change came into being in the human life and finds the way to go ahead in the field of telecommunications. It is not possible to find anyone without Smartphone. The Smartphone is very essential device for professionals, family members and students.

In other words a Smartphone is also known as personal computer (pc) with advanced capabilities and functionality. The Smart phones, being a very new invention of humanity, became an inherent part of human's life. The Smartphone combines different sophisticated features.

It allows users to keep pictures, memories, personal info, correspondence, health and financial data in one place. In this context, the following study was conducted with the objective of finding out the impact of Smartphone.

II. LITERATURE REVIEW

1) Neelamalar and Chitra (2009) investigated The usage and the impact of social networking sites on the younger generation of India. Most of the respondents registered on it to maintain existing contacts. Majority of youth state that social networking sites act as a platform for reconnecting with lost friends, maintaining existing networks/relationships and sharing knowledge, ideas and opinions.
2) Javid, Malik and Gujjar (2011) "Mobile phone culture and its psychological impacts on students learning at the university level". This study revealed that students share useful information with their classmates and teacher, can consult dictionary and thesaurus etc. for academic purpose through mobile phone. The female students live in remote areas feel secure and their parents can contact them whenever necessary. It has increased the rate of telling lie among students. It has also put everlasting impacts on culture.

Solid State Sciences 98 (2019) 106037

Contents lists available at ScienceDirect

Solid State Sciences

journal homepage: http://www.elsevier.com/locate/ssscie

Effect of reaction temperature on electrical and magnetic properties of chemically synthesized MnS nanocrystals

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ARTICLE INFO

Keywords:
Dielectric properties
Cole-Cole plot
Electric modulus
AC conductivity
Arrhenius equation
Magnetic properties

ABSTRACT

In the present work, MnS nanocrystals have been synthesized using a wet chemical technique with three different precursor reaction temperatures in the range of 55 °C–75 °C. The high precision LCR measuring instrument was used to study the dielectric and electrical properties of the MnS nanocrystals in terms of complex dielectric constant, complex impedance, complex electric modulus, and AC electrical conductivity. The effects of grains and grain boundaries on the dielectric relaxation and the electrical conduction mechanism of the material have been investigated with the frequency (50 Hz–5 MHz) of the applied field at different temperatures (323 K–473 K). The dielectric measurements have confirmed the presence of dipolar and interfacial polarization in the structure. The dielectric constant and loss tangent were found to decrease with the increasing reaction temperature. The complex impedance and the electric modulus investigation revealed the presence of a non-Debye type of relaxation in the samples. The Cole-Cole plot and the conductivity studies have confirmed a typical NTCR behavior in the as-synthesized MnS nanocrystals. The activation energy calculated from the Arrhenius equation was found to be 0.27 eV, 0.34 eV, and 0.38 eV for the samples synthesized at 55 °C, 65 °C and 75 °C respectively. VSM measurements revealed that the saturation magnetization increase and coercivity decrease with the increasing reaction temperature. Furthermore, the effective magnetic anisotropy constant, the particle volume, and the relaxation time of the MnS nanocrystals were estimated. The magnetic measurements confirmed that all the samples exhibit paramagnetic behavior.

1. Introduction

In recent years, many research efforts have been committed to investigating the magnetic semiconductors due to their tunable magnetic and semiconductor properties. The magnetic metal sulfide and oxide nanoparticles were prepared by several research groups for their various technological applications in magnetic and microwave devices, magnetic recording media, nucleators [1], contrast agents for Magnetic Resonance Imaging [2], catalyst for the growth of high aspect ratio nanoparticles (HARN) [3], and nano-adsorbent for waste remediation [4]. The new phenomena like spin canting and superparamagnetism can be realized in the magnetic nanoparticles, which may not be observed in the bulk magnetic particles. Semiconductor nanocrystals (NCs) have unique chemical and physical properties owing to the quantum confinement effect [5]. Recent environmental regulations restrict the use of toxic metals, and therefore the nontoxic nanocrystalline metals such as Zn, Mn, Cu, and Fe are of great importance. The nanocrystalline metal sulfides were arousing extensive interest in the investigation of the optical, magnetic, and electrical properties [6–8]. They showed a wide range of applications in light-emitting diodes [9], optoelectronic devices [10], solar energy conversions, single-electron transistors [11], and fluorescent tags for biological imaging applications [12]. The nanomaterials having manganese are attracting the researchers because of their applications in many areas of recent technologies. Manganese Sulfide (MnS) is a wide bandgap VIIB–VIA diluted magnetic semiconductor, and it has magneto-optical properties [13].

Over the years, several protocols have been proposed for the preparation of metal sulfide nanocrystals across a range of composition, shapes, and sizes. The preparation of nanocrystals using the colloidal wet chemical route was a promising approach, and it was an inexpensive and simple method to synthesize such nanoparticles with good size distribution through optimizing various parameters [14]. One of the process parameters associated with the wet chemical method is reaction temperature, with the effect they impose upon the final MnS

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https://doi.org/10.1016/j.solidstatesciences.2019.106037
Received 6 June 2019; Received in revised form 7 October 2019; Accepted 8 October 2019
Available online 9 October 2019

IMPACT OF OBESITY ON THE SYMPTOMS OF PREMENSTRUAL SYNDROME AMONG REPRODUCTIVE AGE WOMEN

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ABSTRACT

Premenstrual Syndrome is a cluster of symptoms (PMS) that occur in the luteal phase of menstrual cycle and disappears at the onset of menstruation. The present study was conducted to assess the impact of obesity on PMS. Methodology: The study was conducted in a Semi-urban area of Coimbatore. Participants composed of 541 reproductive age women with symptoms of PMS. A purposive sampling method was followed for selecting the participants. Tool: A structured interview schedule was used to gather the information related to personal characteristics and menstrual details of the participants. PMS was assessed using a PMS Daily Symptom Diary was used to determine the PMS symptoms and its severity. Results and discussion: The participants were between 31-40 years of age. All were married. Majority of the participants had mild to moderate symptoms of PMS while only seven per cent had severe symptoms of PMS. Half the participants were mildly malnourished in terms of their BMI values where as majority (58%) had mild obesity in terms of waist hip ratio. Prevalence of obesity was higher in terms of Waist Hip ratio than in terms of BMI values. Both the BMI values and Waist Hip ratio had significant association with mean PMS scores of the participants at 5% level. A mild degree of positive correlation was noted between Waist Hip ratio and the symptoms of PMS abdominal pain (r=0.106; p=0.029) and food craving (r=0.19; p=0.016). A mild to moderate physical activity and slight modification in diet can help to reduce the waist hip ratio thereby reducing the symptoms of PMS among reproductive age women.

Keywords **:** PMS- Premenstrual Syndrome- symptoms, BMI Body Mass Index.

INTRODUCTION

PMS is a group of physiological and somatic symptoms related to menstrual cycle (Indusekhar, et al, 2007). As many as 80 per cent of the women of reproductive age experience premenstrual emotional and physical changes (ACOG, 2010) and associated with substantial impairment in life activities and PMS in its severe condition affects the regular economic and social activities of a woman. (Chocano P.O and Bedoya, 2011).

According to Hardey (2010) it was noted that PMS women tend to be more overweight than non PMS women. The energy is reserved in the body in the form of fat and obesity occurs and invites other health problems (WHO, 2012). The waist hip ratio is a better indicator along with the BMI value to decide upon the nutritional status of Indians (WHO, 2015). Insulin resistance due to huge fluctuations in calorie ingestion especially carbohydrate is related to the development of menstrual irregularities including PMS and PCOS. There is some evidence that calorie fluctuation slightly help to reduce PMS, PCOS and infertility (Pitman, 2016).

PMS is considered as a disease and attention is paid only in recent days. When this is the global scenario, in India, the problem of PMS was considered as an issue that may even interfere with the daily activities. Even then women folk are not coming forward to express their suffering and to get a

The observations made by the investigator an studies done among reproductive age women showed obesity was closely related to menstrual irregularities. C the major reasons may be the accumulation of fat aroun abdominal region. With these as background, investigator conducted the study to determine the imp obesity on the symptoms of PMS.

MATERIALS AND METHODS

- Study area- Semi-urban area of Coimbator considered for the study area due to availability of adequate subjects and cooperation rendered by the members and family.
- Population - Reproductive age women of years of age.
- Sample size-A total of 541 participants h PMS constitute the sample size.
- Research design- A non experimental s design was followed for the present study.
- Sampling technique- The study follow purposive sampling technique.
- Tools used- A structured questionnaire was for gathering general information and demography of the selected subjects.
- Assessment of PMS symptom- For assessm PMS symptoms, a standard tool called

International Journal of Scientific Research in Biological Sciences
Vol.6, Issue.6, pp.01-12, December (2019)
DOI: https://doi.org/10.26438/ijsrbs/v6i6.112

Research Paper

E-ISSN: 2347-7520

Optimization of Process Variables for the Production of Virgin Coconut Oil from Selected *Cocos Nucifera* Varieties under Fresh-Dry Method

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Available online at: www.isroset.org

Received: 29/Oct/2019, Accepted: 22/Nov/2019, Online: 31/Dec/2019

***Abstract*:** Virgin Coconut Oil (VCO) was prepared from four coconut varieties viz., West Coast Tall, Arasampatti Tall, Deejay and Tiptur Tall. The Fresh-Dry methodology was optimized by three common variable parameters like temperature viz., 30±1ºC, 35±1ºC, 40±1º C, 45±1ºC, Drying intervals viz., 24hrs, 36hrs, 48 hrs, 60hrs and fruit maturity like 10, 11, 12 and 13 month old coconuts was taken to estimate the yielding efficiency of VCO .The yielding efficiencies are calculated from the four Coconut varieties by comparing the total percentage of Oil extracted from Soxhlet method. Among the four, the maximum yielding efficiency 95.33% was obtained in WCT Coconuts drying with 45º C. In the second process variable, where the maximum yield efficiency was showed that is 93.06% with 48 hrs drying. The third process variable showed the same maximum value of 93.06% as in second process variable by employing 12 month old coconuts The coconut varieties are taken in this research study, showed different yield composition of fatty acid profile especially the lauric acid percentage, which was registered maximum that is 51.20% at "WCT Coconuts" and in other coconut varieties such as AT, DJ and TT Coconuts were noted as 50.10%, 49.23% and 48.55% respectively.

***Keywords*:** VCO, yielding efficiency, Fresh-dry method, WCT, AT, DJ, TT.

I. INTRODUCTION

Coconut oil is commonly extracted from the kernel or meat of mature coconut harvested from the coconut palm. It has nourished millions of people throughout the world for generations. Those populations that use it as their primary source of dietary fat are remarkably free of cardiovascular disease and other common degenerative conditions (1).

In Worldwide it is mainly cultivated in Philippines, Indonesia, India, SriLanka, Papua New Guinea, Thailand, Malaysia and Fiji (2). India occupies a predominant position of coconut production in the world. It is grown in 1.94 million ha in 19 states and 3 Union Territories of our country producing 15730 million nuts with an average productivity of 8303 nuts per ha or 44.27 nuts/palm/year (3).It is mainly grown in the southern part of India (4).

The four southern states especially Tamil Nadu, Kerala, Karnataka and Andhra Pradesh occupies more than 90% area for coconut production (5).This Horticulture crop has gained national importance as food, oil seed, beverage crop and it is a major source of raw material for large numbers of agro– based Industrial units.

Its yielding percentage will be varied in each phase and intervals (6).

There are 50 more value-added products are obtained from coconut tree, which are used in domestic purposes as well as importing quality products (7). Coconut oil is utilized for various purposes including skin care, hair care, stress relief, weight loss, cholesterol level maintenance, immunomodulatory effects and cardiovascular uses (8). It is one of the primary sources of energy, in tropical countries like India, SriLanka, Philippines and Indonesia (9). Virgin Coconut Oil (VCO) is defined as "Oil, one which is produced through with or without the use of heat and without undergoing chemical refining (10). Codex gave a general definition for "Virgin Oils", which states that such oils are suitable for human consumption (11). It provides an alternative inexpensive source of energy to neurons of humans in the case of Alzheimer's disease; this was reported by (12). Also it is noticed that various fractions of coconut oil are used as drugs because, it contains many valuable components like vitamin A, E, anti-cancer polyphenols (ferulic acid, catechin, caffeic acid) and Phytosterols (13). Almost 50% of the fatty acid in VCO is in the form of lauric acid. This fatty acid has wide application as wide spectrum of antimicrobial substances against fungi, bacteria and viruses. Moreover, the fatty acid profile of coconut oil shares

Adsorption of Congo red from aqueous solution onto activated carbon obtained from Eichhornia Crassipes – Batch Study

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ABSTRACT:

In the present study Eichhornia Crassipes an aquatic weed was used as a raw material to prepare activated carbon by various methods according to the standard procedures. Batch adsorption studies were carried out using Congo red dye at different dilutions with the Eichhornia Crassipes carbon. The effects of different system variables were studied in the batch and column studies. Kinetics and equilibrium data were studied to develop an efficient and accurate design model for removal of dyes. Results of the kinetic studies show that the adsorption reaction is second-order kinetic model with respect to different concentrations. Elovich model and intra particular diffusion and corresponding constants were calculated and discussed. The Equilibrium sorption data were fitted into by Langmuir, Freundlich, and Tempkin isotherms. Of the three adsorption isotherm, Freundlich models provided the most appropriate fit for congo red dye adsorption process. The important thermodynamic parameters have been estimated.

Index Terms **- Congo red, Isotherm, Eichhornia Crassipes, Sorption.**

I. INTRODUCTION

One of the world's most polluting industries is the textile-dyeing sector, in which all the processing are done with water and after the process the water is left as waste [1]. The untreated wastewater from those industries is then dumped into rivers that bring its toxic content in the sea, where it spreads around the globe [2].

Congo red (CR) is an aromatic water soluble dye, used in many textiles and dyeing industries to colour cotton, silk, wool, nylon, rayon fibres. CR causes eye and skin irritation. On inhalation causes severe breathing problems which lead to heart diseases. On ingestion causes mouth, stomach and urinary bladder cancer. Eichhornia crassipes (*Water hyacinth*) - invasive alien species are predicted as one of the major threat to biodiversity. It inhibit the transmission of sunlight and thus reducing the action of photosynthesis, which depletes oxygen completely from water streams [3]. This has motivated us to take the plant for adsorption studies. However, the carbons prepared from Eichhornia Crassipes will possible eradicate the abundance of an invasive organism.

Adsorption is one of the processes, which being widely used for dye removal in wastewater treatment. Investigation towards batch and continuous experiments for the treatment of congo red using Biomass [4], fly ash [5], Chitosan [6], clay [7], banana pith [8], Eichhornia crassipes root [9], Morinda pubescens leaves [10], Soil [11] and other biodegradable materials as adsorbent was conducted and resulted in a maximum decolorization. But this study investigates the possible utility of Eichhornia Crassipes as low cost adsorbent for the removal of CR dye from aqueous solution

II. RESEARCH METHDOLOGY

2.1 Adsorbate:

The Congo red dye is azo dye. It can be used as pH indicator, due its color change from blue to red at pH 3.0-5.2. It is the sodium salt of benzidinediazo-bis- 1-naphthylamine-4-sulfonic acid of chemical formula: $C_{32}H_{22}N_6Na_2O_6S_2$; with molecular weight of 696.66 g/mol). The λmax value of the dye was determined by plotting a graph between absorbance of the dye solution at different wavelengths (Figure 1). Since, the maximum absorbance was obtained at 500 nm; it was taken as the λ max value of the dye.

2.2 Adsorbent preparation

The collected Eichhornia crassipes was repeatedly washed with water to remove any earthy impurities present in it and dried at 110°C in air oven. The dried Eichhornia crassipes was impregnated was treated with 10 % Phosphoric acid in the ratio 1:1 and kept in an oven at 300°C for 24 hours. It was then washed repeatedly with distilled water to remove free phosphoric acid. During the last washing two drops of ammonium molybdate is added to test the presence of phosphoric acid. Then it is subjected to thermal activation at 800°C for 15 minutes. The carbon prepared was powered, sieved and particles in the range 75 – 300 µm mesh size were retained for the evaluation of different carbon characteristics

Adsorption of Synthetic Textile Wastewater with Phosphoric acid modified Carbon and Commercial Carbon

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Abstract — Activated carbons ECAC was prepared from the Eichhornia Crassipes using H3PO4 as chemical activating agent was compared with commercial activated carbon (CAC). In this study, utilization of these adsorbents for the removal of Synthetic dye solution (SDS) consisting mixture of Congo Red (CR), Methylene Blue (MB), Malachite Green (MG), and Reactive Blue (RB) dyes from aqueous solution was investigated. Experiments of SDS adsorption on the selected adsorbents were conducted using batch and column techniques and their results were evaluated. The data were tested with two different isotherm models; it fitted to Langmuir isotherm for ECAC and for CAC, with high correlation coefficient. Maximum adsorption capacity (mg/g) obtained for ECAC was 60.19 and 56.62 for CAC. Pseudo-second order kinetics explained the adsorption process much better with good correlation coefficient. Increasing the temperature of the system increases the equilibrium time accompanied by endothermic removal of SDS. Desorption studies were carried out using 0.4N NaOH. These studies suggest that the prepared adsorbent showed good adsorption characteristics towards textile dyes than commercial carbon.

Keywords *— Eichhornia Crassipes, Synthetic dye solution, Commercial carbon, Adsorption, Isotherm studies, Desorption*

I. Introduction

One of the basic materials, which support life on our mother-planet earth, is water. To ascertain suitability of water for consumption, it is necessary to undertake analysis of quality of water. Water pollution is due to chemical, biological or physical alteration in the quality of water that causes ill effects on living organisms and also makes water unfit for both domestic and industrial purposes [1-5]. A wide range of synthetic dyestuff was driven into the industry for its diverse benefit over natural dyes due to its wide color range, ease applicability and availability. Subsequently, we are degrading our globe to the level where species are dying at an extremely alarming rate. In addition to native species dying off, our drinking water also been affected greatly [6]. Instead of struggling with water pollution, we must realize the problems and be a part in solving problems.

Several physical, chemical and biological de-colorization methods were being investigated for the removal of dyes from industrial effluents [7]. Adsorption is one of the cost effective and versatile methods for removal of dyes because it does not require a high operating temperature [8,9]. In the adsorption process finding suitable adsorbent is very much needed. Investigation towards batch and continuous experiments for the treatment of dyestuff water using fly ash, livestock sewage sludge, jute fibre, eucalyptus barks, sunflower stalks, tea dust, pine apple leaf, pine cone, orange peels, papaya seeds [10-19] were already reported. The removal of SDS from aqueous solution by using an activated carbon prepared from Eichhornia Crassipes an aquatic weed subjected to various chemical treatments were studied and reported [20]. In this work, the potential application of the phosphoric acid modified activated carbon derived from Eichhornia Crassipes (ECAC) along with commercial carbon (CAC) for the removal of SDS was evaluated.

II. Materials and Methods

2.1 Adsorbent preparation

Eichhornia Crassipes collected from nearby channel and ponds were used for the preparation of adsorbent. The aquatic weed was thoroughly rinsed with water to remove dust and soluble materials and was dried at room temperature. The material was soaked with 10% Phosphoric acid for a period of 24 hours. After impregnation, the treated mass was subjected to carbonization at 300 ºC and powdered well. It was washed with excess of water to remove excess acids present and dried. The powdered material was sieved to a mesh size of 75 to 300 µ and subjected for activation at 800 ºC for a period of 10 minutes [20].

2.2 Adsorbate Preparation

Five commercial dyes were used in this project: CR, MB, MG and AB; their characteristics and structures are illustrated in Table 1. The stock solutions were prepared by the concentration of 1000 mg/L (dissolving 250 mg of the each dye) in a litre of distilled water. The working solutions of appropriate concentrations were prepared by diluting the stock solution with distilled water.

International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.12 No.06, pp 188-198, 2019

Optimization of column studies on the adsorption of congo red dye using phophoric acid-treated eichhornia crassipes

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Abstract : The present paper examines the use of phosphoric acid-modified eichhornia crassipes for the continuous adsorption of congo red (CR) dye in columns. The adsorbent was characterized using Fourier transform infrared spectroscopy and X ray diffraction study. A fixed bed column analysis was carried out to evaluate the parameters that affecting the adsorption of CR dye onto phophoric acid-modified eichhornia crassipes, such as initial CR concentration (80–140 mg/L), column bed height (5–20 cm), and feed flow rate (5–15 mL/min). Maximum bed capacity of 15.21 mg/g was achieved at 100 mg/L inlet CR dye concentration with 10 cm bed height and 5 mL/min of feed flow rate. Thomas and model was in good agreement with the experimental results. Desorption and use of spent carbon as admixture in concrete datas has been obtained.
Key words : Adsorption, Eichhornia Crassipes, Congo red, Fixed bed column, Admixture.

I. Introduction

Rapid industrialization leads to destruction in natural environment. One of the most polluting industries is textiles and dyeing units. These sectors release enormous amount of colored dye effluent into near water streams. Dyes are synthetic aromatic compounds with more complex structure, which resist degrading or degrade to form toxic compounds. Most of the dyes and their degraded compounds are carcinogens and mutagens in nature. In particular, azo dyes are largely employed in food and textile industries. Azo dyes are synthetic organic dye with –N=N- (azo) group. This group is highly stable and resists degradation. Hence if not treated properly these dyes remain stable in the environment [1]. Consumption of colored water causes many health problems [2]. The textile waste water needs treatment before they are discharged into the environment [3,4]. Several techniques have applied to eliminate color from wastewater including advance oxidation, ion exchange, chemical coagulation or flocculation, electrocoagulation, nanofiltration, ultrafiltration, electrodialysis, ozonation and reverse osmosis [5-13]. All of the techniques have advantages and drawbacks. However, all these processes are costly and cannot be utilized by small industries to treat the wide range of wastewater [14]. In addition to already mentioned methods adsorption is a unique process for the removal of color from water and wastewater.

DOI= http://dx.doi.org/10.20902/IJCTR.2019.120521

Journal of Bio- and Tribo-Corrosion (2019) 5:16
https://doi.org/10.1007/s40735-018-0205-5

Corrosion Inhibition and Adsorption Properties of Mild Steel in 1 M Hydrochloric Acid Medium by Expired Ambroxol Drug

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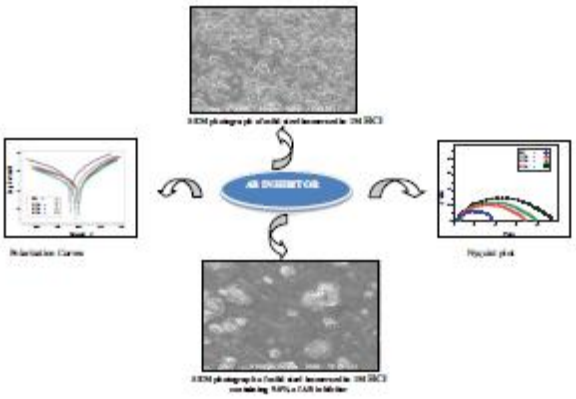
Received: 9 July 2018 / Revised: 14 November 2018 / Accepted: 21 November 2018

Abstract

The inhibitive action of an examined expired Ambroxol (AB) drug on the corrosion of mild steel in 1 M hydrochloric acid medium has been studied by both weight loss and electrochemical techniques. The weight loss techniques result was discussed. The inhibition efficiency increases with increasing the concentration of the AB inhibitor. Electrochemical studies data support that examined expired AB drug is an efficient inhibitor for mild steel in 1 M hydrochloric acid medium. The adsorption of the examined drug obeys Langmuir's and Temkin adsorption isotherm. Polarization studies indicate that this inhibitor acts as a mixed mode of inhibition. The various thermodynamic parameters were calculated and discussed. The protective film formed on the surface was confirmed by FTIR, SEM and EDS. The quantum-chemical calculation also supports the inhibitive effect of the inhibitors. The data collected from the studied techniques are in good agreement to confirm the ability of using expired Ambroxol (AB) drug as corrosion inhibitor for mild steel in 1 M hydrochloric acid medium.

Graphical Abstract



Extended author information available on the last page of the article

Published online: 30 November 2018

PHYSICS AND CHEMISTRY OF LIQUIDS, 2018
https://doi.org/10.1080/00319104.2018.1464162

Taylor & Francis
Taylor & Francis Group

The impact of the modified Poisson–Boltzmann model on protein bound to a lipid coated silicon nanowire field effect transistor biosensor in an electrolyte environment

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ABSTRACT

The aim of this work was to analyse the electrostatic potential profile, various effects of electrolyte concentrations, and the influences of surface charge on a protein bound to a lipid coated Silicon nanowire field effect transistor (Si-NW FET) biosensor by implementing the modified Poisson–Boltzmann (MPB) model. In this work, we modelled a lipid monolayer-coated Si-NW FET for the sensing of proteins, which consisted of variable amounts of aspartic acid. The electrostatic potential profile, protein charge distributions, the response to various electrolyte concentration, and the impacts of various surface charge were studied by implementing the MPB model with the Si-NW FET biosensor. Additionally, a comparison between the use of the MPB and the Poisson–Boltzmann model in studying the effects of various surface charges was carried out. Taken together, it was found that the MPB model showed a higher resolution in studying the Si-NW FET biosensor model when higher concentrations and surface charges were administered.

ARTICLE HISTORY
Received 9 November 2017
Accepted 8 April 2018

KEYWORDS
Lipid coated NWFET; biosensor modelling; protein sensing; MPB modelling

1. Introduction

The importance and the use of nanostructures in the sensing of biological and chemical materials has been a growing area of research, with the previously successful use of biomaterials in combination with one-dimensional (1D) nanostructures [1]. The use of 1D nanostructures in nanowire fabrication and the important device applications has been established [2]. Specifically, the use of nanowires in field effect transistors (FETs) for applications in both chemical and biological sensors has been shown [3, 4]. Additionally, the sensitivity of a nanowire FET and the electrochemical detection of a nanowire FET has also been determined [5, 6]. Most recently, there has been the development of the Schottky barrier nanowire FET model for specific applications in liquid environments [7, 8].

Various enzyme monolayer-functionalized FET biosensors have been classified and analysed using real-time quantitative methods [9]. Additionally, the detection of peptides with a single charge has been achieved, and it is now possible to differentiate single charge variations on analytes, even in physiological electrolyte solutions [10]. Furthermore, in the literature the incorporation of various lipid membranes and supported lipid monolayers and bilayers into semiconductor devices has been achieved [11].

Previously, modelling of the distribution of charges of artificial proteins such as the aspartic acid and the green fluorescent protein has been successfully shown [12]. Therefore, in this work we have

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Article

Advanced Science, Engineering and Medicine
Vol. 11, 1–9, 2019
www.aspbs.com/asem

Synthesis and Characterization of $NiFeCo_3O_4$ Ternary Thin Film Electrodes for Supercapacitors Applications by Galvanostatic Method

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At this present task, an attempt done in order to synthesize $NiFeCo_3O_4$ ternary thin film electrode by Electrodeposition method. Microstructure of the films studied using X-ray diffraction, energy dispersive X-ray spectroscopy (EDAX) and Field emission (FESEM) scanning electron microscopy. Films Electrochemical property were studied and confirmed with the help of charge discharge techniques using cyclic voltammetry, which confirms that the prepared electrode has excellent electrochemical capacitive behaviour with 757 F g^{-1} specific capacitance value of at the density in current about 1 mA g^{-1}.

Keywords: Thin Films, Electrodeposition, Nickel Iron Cobalt Oxide, Super Capacitor.

1. INTRODUCTION

The ever-increasing energy consumption, it is extremely urgent for scientists to explore renewable resources [1–3]. Nowadays, the development of renewable resources seems. To trigger an increasing requirement for electrochemical energy storage [4]. Therefore, various energy storage approach made prospective to satisfy the development [5]. Supercapacitors (SCs) are presume to be a high potential energy accumulating equipment, because of the, large, durability, fast kinetic, power density and high Columbic efficiency [6]. The supercapacitors prosperity emerge from uprooting conventional battery and capacitor products where present technologies cannot provide efficient solutions. On the basis of mechanisms, supercapacitors branched into two groups: (i) Electrical double layer capacitor (EDLC), where ascription of capacitance done by the charge accumulation into the electrode-electrolyte interface. The typical electrode material is nothing but a carbon materials of surface area higher like activated carbon, fiber, aerogel, etc. [7]. (ii) Redox capacitors, become a pseudocapacitance owing to the oxidation-reduction reaction. Metal oxides and conducting polymers belong to this kind of pseudo capacitance electrode materials [8]. A famous property of SCs significantly depend on the electrode materials. Until now, a variety of materials, for instance carbonaceous materials, transition metal oxides [9], conductive polymers [10] and hybrid composites [11] are extensively researched as electrodes materials of SCs. Unfortunately, the material defects like polymer decomposition etc. can be improvised with the new profound supercapacitor application [12]. RuO_2 a power high electrode supercapacitor material [13], possess high price behaves impossibility for commercial productions. Hence, the researches expecting low price metal oxides to replace RuO_2, for example Co_3O_4 [14–16], NiO [17], MnO_2 [18], TiO_2 [19], etc. However, the commercial attractiveness metal oxides is limited with inferior conductivity [20]. Major transition metal oxides doesn't offers sufficient transport of charge, that limits efficiency. The high theoretically predicted pseudocapacitances were attained in many practical applications. To achieve the better cycling performance seldom, electrode capacity, and rate capability, few studies and the synthesis of transition metal oxide electrodes with more than one metal oxide structure for supercapacitor applications were proposed. The metal incorporation in metal oxide materials shows an improvised ion diffusion [21]. The nanoscale structure like size of the particle, area surface, crystallinity and volume decides the performance of electrode electrochemically [22]. The universal strategy is appropriate for else high performance transition metal oxide based electrodes for next generation supercapacitor. In recent

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International Journal of Advances in Scientific Research
ISSN: 2395-3616 (Online)
Journal DOI: https://doi.org/10.7439/ijasr
Research Article

Comparative studies of $NiMnCo_3O_4$ thin film electrodes for supercapacitors applications

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Abstract

Present work is devoted to preparing ternary $NiMnCo_3O_4$ electrodes by electrodeposition method on copper and porous copper substrate. The structural, morphological and electrochemical characterizations of the prepared samples studied and confirmed by using XRD, SEM, EDAX, FTIR and electrochemical measurements. Structural analysis confirms that $NiMnCo_3O_4$ film has face-centered cubic with polycrystalline nature. Electrochemical measurements prove that $NiMnCo_3O_4$ electrode deposited on a porous copper substrate has an improved super capacitive behavior, compared with $NiMnCo_3O_4$ electrode deposited on a copper substrate. The high specific capacity of 947 F/g at 10 mV/s was observed. Electrochemical performances were investigated at different scan rate range. And it reveals the prepared electrode has excellent capacitance behavior as well as reversibility. Moreover, stable cycle capability 90.2%inthe capacitance retention was achieved after 3000 cycles. These outstanding electrochemical properties indicate that the obtained $NiMnCo_3O_4$ electrode materials are fairly ideal for supercapacitors.

Keywords: Thin films, Electrodeposition, Nickel Manganese cobalt ternary oxide, supercapacitor.

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***Article History:**
Received: 05/04/2019
Revised: 26/04/2019
Accepted: 26/04/2019
DOI: https://doi.org/10.7439/ijasr.v5i4.5142

QR Code

How to cite: M. Kalyani and R. N. Emerson. Comparative studies of $NiMnCo_3O_4$ thin film electrodes for supercapacitors applications. *International Journal of Advances in Scientific Research* 2019; 5(4): e5142. Doi: 10.7439/ijasr.v5i4.5142 Available from: https://ssjournals.com/index.php/ijasr/article/view/5142

1. Introduction

Since last few years, the trouble for clean, efficient, and renewable energy sources is remarkable and thereby driving intense scientific concern in the production, storage and management of this precious energy [1-2]. Among the variety of electrical energy storage devices, supercapacitors (SCs), also known as electrochemical capacitors, grabs an enormous research and industrial attention because of their high power density and very long cycle stability as compared to their counterparts such as batteries, fuel cells, and conventional capacitors, etc. [3,4]. In general, SCs are classified into two types according to the energy storage mechanism: Electric double layer capacitors (EDLCs) and pseudocapacitors (PCs). The EDLCs store energy based on the electrostatic accumulation of charges in the electric double-layer near the electrode/electrolyte interfaces and the PCs is governed by fast surface faradaic reactions using redox-active materials [5-7]. Unlike the Electric double layer capacitance and Pseudocapacitance usually, deliver much higher specific capacitance and higher energy density than the conventional EDLCs due to their fast and reversible redox reaction. The MnO_2, NiO_2 and RuO_2 have been considered as PCs materials and these materials have an I–V curve whose its shape is close to that of the EDLC and they showed EDLC like behaviors [8]. In addition to the MnO_2 and RuO_2, B.E. Conway briefly indicated that the others metal oxides such as Co_3O_4 and Mn_3O_4, and WO_3 and also conductive polymers could have pseudocapacitive properties[9], and generally indicated that the metal oxides with the following properties could be good for use as pseudocapacitive materials in the electrochemical SCs:(1) The oxide should be electronically conductive,(2) the metal can exist in two or more oxidation states that exist over a continuous range with no phase changes involving irreversible modification so far 3-dimensional structure, and (3) the protons can freely intercalate into the oxide lattice on reduction (and out of the lattice on oxidation), allowing

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 6.887
Volume 7 Issue IV, Apr 2019- Available at www.ijraset.com

Electrochemical Performance of Mn Doped Co_3O_4 Thin Film Electrodes by Electrodeposition Method

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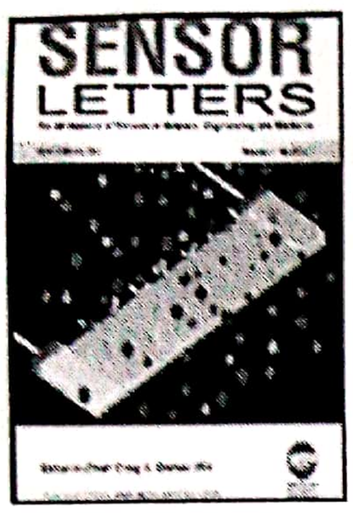
Abstract: ***The present work is intended to prepare manganese doped cobalt oxide electrodes on copper and porous copper substrate by electrodeposited technique. Structural, morphological and electrochemical characterizations of the prepared samples were examined by using XRD, SEM, EDAX, FTIR and electrochemical measurements. Structural studies confirm $MnCo_3O_4$ Film has face centred cubic (FCC) with polycrystalline nature. Morphological observation of the prepared films*** *confirms the formation of nano flake like structures on copper substrates and nano rod like structures on copper porous substrates.* ***The electrochemical performance of $MnCo_3O_4$ electrode was tested by cyclic voltammetry, impedance and Galvanostatic charge-discharge measurements. Cyclic voltammetry observation shows*** *films deposited on copper substrates has* ***mixed capacitive behaviour with maximum specific capacitance of 1020 F/g and*** *films deposited on porous copper substrates has* ***specific capacitance of 1467 F/g at the scan rate of 10 mV/s in 1M KOH electrolyte.***
Keywords: Thin films, Electrodeposition, Manganese cobalt oxide, Electrodes, Super capacitor.

I. INTRODUCTION

The rapid growing market in portable electronic devices and electric vehicles coupled with ever worsening global warming issues have greatly stimulated researches worldwide on exploring high-performance electrode materials for energy-storage devices [1]- [3]. Such as rechargeable batteries, fuel cells and supercapacitors as energy storage systems for electric vehicles, hybrid electric vehicles, plug-in hybrid electric vehicles and smart grids [4]- [10]. For example, lead acid batteries and lithium ion batteries as typical rechargeable batteries has been widely used as electrochemical energy storage devices and systems [11], [12].However, most of batteries suffer from low power delivery, and cannot satisfy the faster and higher power energy requirements. In this situation, supercapacitors (SCs) were exploited to reserve and deliver energy with high rate capability, which is well adapted to provide the electricity demand for electric vehicles, diesel-engine starting, wind turbines, computers, lasers, and cranes [13], [14]. SCs, also known as ultracapacitors or electrochemical capacitors, can be fully charge-discharge only in a few seconds, leading to very higher charge/discharge power density ($10kWkg^{-1}$) [15]. Obviously, the SCs are capable of perfectly fill the power energy gap between conventional dielectric capacitors with great power output and batteries owning high energy density [16], [17]. In SCs have the greatest potential in the field of energy storage devices [18]. According to the species of the electrode material and the mechanism of energy storage, generally, the supercapacitor is classified to electrical double layer capacitor (EDLC) (carbon-based materials) and pseudo-capacitor (metallic compound materials and conductive polymer materials) [19], [20]. At present, carbon-based EDLCs have been developed and employed in commerce. However, a great deal of previous work has shown that the major drawback of EDLCs is their low energy density [21]. Compared to EDLCs, pseudo-capacitors have higher energy density ascribed to the reversible redox reactions. Electrodes are the key part in supercapacitors and much work has been performed on the fabrication of electrodes [22]. Recently, a great deal of research effort has been placed on improving the performances of electrode materials such as carbon materials, transition metal oxides and conducting polymers [23]. Currently, activated carbons are the primary electrode materials for commercial supercapacitors. However, the lower specific capacitance limits their practical applications [24], [25]. Comparatively, transition metal oxides/hydroxides have been widely investigated and applied as the high-performance supercapacitor electrode materials [26], which can provide higher specific capacitance than traditional carbon based materials because of their fast reversible redox reactions caused by the multiple oxidation states. Transition metal oxides, including RuO_2[27],[28], MnO_2 [29], [30], NiO [31], [32] and Co_3O_4 [33], [34], have been explored as potential electrode materials used in supercapacitors in recent years due to their high pseudocapacitance caused by a fast redox reaction. Among them, RuO_2 is the most prominent material reported in many literatures [27], [28] due to its high specific capacitance, good electrical conductivity and reversible charge-discharge properties. The recent work from our group has also found that RuO_2 and its composite demonstrate outstanding supercapacitances under ultrafast charge and discharge with excellent rate capability and cycling stability [35]. However, the extremely high cost of RuO_2 has seriously limited its practical use in supercapacitors. Therefore, it will be of great significance to develop alternative electrode materials with a low-cost and superior electrochemical performance.

The Thermal Conductivity and Viscosity of Non-Polar Hybrid CuO Nanofluid (CuO+ DEA + Cyclohexane) (CuO + DEA + 1-4 Dioxane)

Authors: Rohini, B.; Jeevaraj, A. Kingson Solomon
Source: Sensor Letters, Volume 17, Number 12, December 2019, pp. 965-967(3)
Publisher: American Scientific Publishers
DOI: https://doi.org/10.1166/sl.2019.4181



Dielectric Study of Carboxyl (–COOH) Functionalized Multi-Walled Carbon Nano Tube-Silicone Oil Nanofluids at Different Temperatures

Authors: Premalatha, M.; Preetha, N.; Padmavathi, S.; Jeevaraj, A. Kingson Solomon
Source: Sensor Letters, Volume 17, Number 12, December 2019, pp. 982-986(5)
Publisher: American Scientific Publishers
DOI: https://doi.org/10.1166/sl.2019.4179

Dielectric Constant Measurement In Binary Liquid Mixture (DEA + Butanol) And Hybrid CuO Nanofluid (Cuo + DEA+ Butanol) At Various Temperatures

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Abstract

This present work elucidates the intermolecular interaction and intramolecular interaction of binary base fluids and hybrid CuO nano fluids. Dielectric constant has been computed experimentally for various values of concentrations ranging from 0.01M to 0.06M and for different temperatures from 298K to 318K. The aim of the study to provide the knowledge of interaction of the molecules in hybrid CuO nanofluid compared to its binary base fluid. DEA and alcohol are selected as a solvent because of the special N-H bonding in Diethlyamine and the presence of Hydroxyl group –OH- in butanol plays the vital role in the complex formation in the system. The results of this study clearly discuss about the dipole-dipole interaction as well as the enhancement of dielectric constant during the addition of CuO nanoparticles.

Key words: Dipole-dipole interaction, Hybrid CuO nanofluid, dielectric constant, Diethyl amine.

1. Introduction:

There are two different era of studies has been carried out in this paper, one is dielectric study of binary fluids (Butanol + Diethyl amine) and another one is dielectric study of hybrid Cuo nanofluid (CuO + Diethyl amine + butanol) . Alcohols have wide range of applications in medical fields [1]. A very few workers proposed the dielectric studies on binary fluids that with amines and the results are not clearly explaining the complex formation. With this view, the present study clearly explains the Dielectric studies of binary fluid and hybrid CuO nanofluid. Dielectric constant is a important parameter and it is related to many physical and biological applications[2-3]. It is important for understanding the inter molecular interactions due to their dipole-dipole interaction and also the presence -OH- hydroxyl group and N-H bonding in the diethylamine. Nanomaterial taken for this study is CuO and it has many applications in the field of electronics, magnetic storage media, sensors, catalysis [4-13], and also in solar cells, electro chemical cells, gas sensors [14-16].

2. Experimental details

Pure samples diethyl amine and butanol are procured from Merck Company, AR grade and were used without further purification. CuO Nanoparticle is also commericially purchased with 99.9% purity. The measured binary fluids were kept in the magnetic stirrer for 5 mintues to get uniform suspension. The value of dielectric constant of binary fluid (DEA + Butanol) was measured for the different concentrations ranging from 0.01M to 0.06M and for various temperatures from 298K to 318K. In the same solution CuO nanoparticle was also added from 0.1gm to 0.6gm. After adding the CuO nanoparticle in to the binary fluid it was kept in the ultra probe sonicator for 30minutes. The suspension of the prepared hybrid CuO nanofluid was maintained for more than 12 hours without adding any surfactant. Dielectric measurement process of Hybrid CuO nanofluid(CuO + DEA + Butanol) was also performed like a binary fluid. The dielectric constant (ε) of binary fluid and hyrid CuO nanofluid were calculated by using the following formula.

$$\varepsilon_x = 1 + (C_O - C_X / C_O - C_R)\,[\varepsilon_R - 1]$$

Where,

ε_R - Dielectric constant of reference fluid

ε_x - Dielectric constant of unknown fluid.

C_X - Capacitance of unknown fluid.

C_R - Capacitance of reference fluid.

Impact of Guerrilla Marketing Strategy among the Employees of Co-operative Banks in Coimbatore District.

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Abstract

Most of the booming business accepted the prominence of customer's lifetime value because customer satisfaction is perceived as a key indicator. Guerrilla Marketing has developed as a branded form of marketing and it is a strategy for low cost progressive marketing method. This investigation was carried out to check the awareness and effectiveness among employees in Co-operative banks in Coimbatore about Guerrilla marketing. Guerrilla marketing is used to enlighten and generate interest in minds of customers on the road to a great cause by making the people more accountable. This paper examines the impact of Guerrilla marketing to influence the consumer perception. Banks that desire to increase and sustain customers should pay special attention to customer attributes and provide satisfying products and services to fulfil their needs.

Keywords: Guerrilla Marketing, Consumer Perception, Customer satisfaction, Co-operative banks

1.Introduction

Guerrilla promotion is a contemporary practice in product marketing that makes use of rare or unusual means of stimulating the product to the market. Guerrilla advertising conceived from guerrilla warfare processes where the armed mass activated unconventional techniques in fighting the opponent, even to the point that breaches the regular policy of engagement. Guerrilla Marketing is an advertising strategy that focuses on low cost unconventional marketing tactics that yield maximum results. Guerrilla marketing is a low-cost and innovative technique to appeal attention and consumers to your business without paying an arm and a leg.

Guerrilla campaign must embrace a surprise situation. That situation can be formed by means of typical objects in a rare place and vice versa or by enactment of an event that people were not prepared to take part in. Also the surprise cause will aid to raise participants' alertness to the campaign.

2. Review of Literature

Desai (2014)[1] examined that people are extremely associated with the brand due to quality and outcomes of the specific brand. They are committed emotionally with the brands and they can wait for the product throughout the non-availability of the product. Even though people are cheering brand conscious but the authentic brand choice is in their hands.

Fazal Rehman (2014)[2] reported that the advertising is very essential and effective strategy to appeal the customer towards the product. The advertisements have positive and significant effects on the purchasing behaviour as compared to the factors of rural zones which have negative but imperative effects on the buying behaviour of the consumer. It is the component of promotional mix to create awareness and attention amongst the target audiences.

FORECASTING INDIAN BANK STOCK MARKET STATIONARITY AND VOLATILITY ISSUES via GARCH MODELS

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Abstract
Forecasting volatility remains a challenging area of research in the finance. This paper empirically examines how condition of return distribution effects the performance of volatility forecasting using three GARCH models (GARCH, EGARCH and PGARCH). The key focus of this paper is to model stock return volatility by relating different univariate specifications of GARCH type models for daily observations of the S&P CNX 500 index series for the period 1st April 2007 to 31st March 2018. The study found that stock returns have significant ARCH effect. Empirical results specify that the EGARCH model is superior to the GARCH model in forecasting Indian bank stock market's volatility, for all forecast horizons. These findings have important policy implications for financial market participants, investors and policy makers.

Keywords: Volatility persistence, Volatility forecasting, Stationarity, GARCH models
JEL Classification. G21, G34

1.Introduction

Research has found out that a relationship between volatility from one period to the next period exists. The presence of this heteroscedastic relationship may be used for modeling and forecasting future volatility of financial markets. Many time series approaches are applied, including the simple GARCH model, exponential GARCH and the power GARCH model. ARCH models are specially designed to model and forecast conditional variances. Taking into account the serial correlation, the ARCH LM test was used to identify and correct for the existence of ARCH/GARCH in the residuals. Statistical implication of the coefficients of ARCH/GARCH terms, adjusted R-square, Akaike information criterion and Schwarz criterion is used to select the best fitting model.

HEROIC DEEDS OF THE MARGINALISED AND DOOMED CHARACTERS IN THE NOVEL SEA OF POPPIES

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Abstract

The present paper focuses on the heroic deeds of the characters in the novel Sea of Poppies. The entire backdrop of the novel is Opium. Each and every character in the novel is related in the processing of Opium, Some of the characters in the novel face life threats and some comes under survival issues. Since the characters are destitute, they have no one to look on. In order to survive the characters boards the ship Ibis. The difficulties they face in the voyage, how they overcome the problems, the changes came over in the characters are discussed elaborately.

Keywords

Amitav Ghosh, Sea of Poppies, Adventure, Opium, Migration, travel, Protagonists, Positivity.

Introduction

"... To strive, to seek, to find, and not to yield."

Alfred Lord Tennyson

Amitav Ghosh is a keen observer about the impact of colonization in his country and is very careful in projecting the plight of the marginalized people of the post-colonial era in his novels. The author skilfully point outs the troubles of the marginalized characters. They usually have no one to look on, and have only a few to raise voice on behalf of them. These aspects are cleverly portrayed in his novels. The first novel of the ibis trilogy *Sea ofPoppies*(2008) is a complete blend of a grand narratives of history which is concerned more for the lives of men and women who are powerless, gives a new dimension in thinking about the past, culture, identity, love, fate, revenge, sex and friendship. The novel is divided into three parts as land, river and sea. The story takes place during the opium war when Britain used India to grow poppy seeds that were sold as opium to the Chinese to create a more favourable balance of trade for Britain. Through his magical narrative skill, the author takes the readers to Ganges and to Calcutta, where the poppies are grown and opium is processed. In India, there is a belief that fate rules mankind, so are the characters in the novel. By the magnetic pull of ibis all the major characters of the novel, despite differences of caste, colour and creed come to view themselves as 'jahaj-bhais' in the ship Ibis.

The present article is focused on the heroic deeds of the marginalised and the doomed characters in the novel *Sea of Poppies* (2008) .The major historical occurrence which act as a setting to the plot of this novel is the transfer of indentured labour from India to work in the sugar plantations of Mauritius. Compared to the other two novels of the Ibis trilogy, in the present novel, the protagonists are given a strong advocacy. Their heroic deeds in the novel give a cinematic effect to the novel. The ship Ibis has a key role in uniting the characters. It provokes realisations about their lives and makes them leave their temporary fallback by the seaside and make them ready to stand as a changed, strengthened people off the shore.

Every incident, that happens in a human's life mould and shapes his personality. In this novel also the characters faces many hardships in their lives, but how the characters react and face the problems in life is a lesson given to everyone who reads the novel. Though the novel is about post-colonialism and its effects on the people, it is enjoyable because of the strong will of the characters. When a person is tormented continuously for a long time, they have only three ways to come out, either they become hopeless or dejected or will stand against the problem or else will try to escape them from the situation. Disappointment is found in all sorts of life, but how to tackle is the biggest challenge in life. Similarly the characters in the novels are highly disappointed in their lives, but once they decide to move on, everything changes and gives them a way for a new life. Positivity and hope makes human beings survive in the world. The characters in the novel daringly design their life according to the changing situations. Ibis, the ship in the novel gives, a path, changeable and uplifting, nourishing and helpful. The ship stands as a representation not only of death, but for a new birth, not merely of peace but of violence. The ship holds the promise both of freedom and of enslavement. Its sparkling surface is inviting, and its height is mysterious and daunting.

The trilogy gets its name from the ship Ibis in which most of the main characters meet for the first time. The Ibis, starts from Calcutta carrying indentured labourers and convicts directed to Mauritius, but runs into a storm and faces a revolt. Two other ships are caught in the same storm the Anahita, a ship carrying opium to Canton, and the Redruth, which is on a botanical expedition, also to Canton. While some of the travellers of the Ibis reach their destination in Mauritius, others locate themselves in Hong Kong and Canton and get trapped up in events that lead to the First Opium War.

The novel portrays different characters from diverse cultures counting, Bihari peasants, Bengali Zamindar, Parsi businessmen, British traders and officials, and a mulatto sailor. As the sea accepts everything, the characters on board also readily accept them despite the colour, caste and creed. In addition to their native languages, the novel also brings in the readers to various pidgins as well as the original Chinese Pidgin English and variants spoken by the lascars. The novel has for the most part been well received. The novel *Sea of Poppies* is comprised of twisting narratives involving a village woman Deeti, an American sailor

National Journal of Multidisciplinary Research and Development
ISSN: 2455-9040
Impact Factor: RJIF 5.22
www.nationaljournals.com
Volume 3; Issue 1; January 2018; Page No. 1200-1202

A developmental study on financial planning profiles of households in Vellore city of Tamil Nadu

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Abstract
Family financial management and control practices have received little attention. Yet they are increasingly important, due to changes in the financial environment such as deregulation of the banking industry and the increasing number of dual income families. This paper reports on the family's financial management and control tendencies.
This was a survey research with a two-fold purpose. One purpose was to investigate the financial management practices among selected households in Vellore City. The other purpose was to investigate how the socio-economic factors and financial management practices influence satisfaction with these practices.

Keywords: financial planning, household finance, Vellore city

Introduction
Nations, people, individuals and all institutions such as families at whatever level use available resources to raise their economic standards and improve their welfare. The family uses these available resources to sustain and maintain their status. There are two main types of resources 1) human resources 2) non-human resources. Examples of human resources include; interests, abilities and energies of household members, while those of non-human resources are; income, time, and other tangible resources like assets. These resources, must be managed well for sustenance and efficient use.
This is true at international, national and family level. Family income is that stream of money, goods services and satisfaction that come under the control of the family to be used by them to satisfy needs and desires and to discharge Obligations. Chief among the family's concern is the use of its major non-human resource namely money. Much thought and efforts are expanded in its size and source.
Establishment of financial goals early in life can improve the quality of life by making maximum use of one's income. A family has financial goals that it wants to achieve, either immediately or in the long term. Thus, it is important for the families to spend the available income so that the goals set may be achieved. Many people make personal financial decisions by chance, for example, saving plans are based on how much money is left over at the end of the month.
However, with lack of financial management, families are not likely to save, may be in debts and are likely to overspend in some areas than others. This may lead to a financial crisis that may result into bankruptcy, an indication of a family's inability to cope with problems of debt and the management of their finances.

Objectives of this study
1. Identify the social economic characteristics of the low, middle and high income households;
2. Determine the financial management practices of the low, middle and high income households in Vellore City;
3. Investigate the differences among the low, middle and high income households in their financial management practices;
4. Examine the relationship between socio-economic factors, financial management practices and satisfaction with these practices.

Statement of the problem
At times one wonders whether households really take trouble to systematically manage their families. Sometimes it is evident that some families attain goals faster than others, even when income and assets are kept constant. Such an observation means that there is something more than just availability of income that helps some families attain goals. It is thus crucial to establish such financial management practices that help to achieve their goals.
Probably a big percentage of families could improve their financial status by planning their finances better.
The present research is therefore a situational study to determine whether families plan for their finances. For those who plan, the researcher explored methods used to manage and how these could be improved. An effort was also made to establish whether families are satisfied with their financial situation and if so, whether financial planning positively influences financial satisfaction. For those who do not plan, recommendations about how they could be helped were given.

Purpose of the study
The purpose of this study is therefore, to determine financial management practices among households in some selected areas of Vellore City. The study will also investigate how the socio-economic factors and financial management practices influence satisfaction with these practices.

NUTRITIONAL ASSESSMENT OF HOSPITALIZED ADULT POPULATION, EFFECT OF NUTRITIONAL COUNSELING AND STANDARDIZATION, ANALYSIS OF ANTIOXIDANT INCORPORATED BREAKFAST RECIPES

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Abstract

The degenerative disease is a continuous process based on degenerative cell changes, affecting tissue or organs. Food makes body work, grow and repair. Antioxidants protect the body from damage caused by harmful molecules called free radicals. It plays a role in the management or prevention of some medical conditions, such as some cancers, muscular degeneration, Alzheimer's disease and some arthritis-related conditions. Using the systemic random sampling technique, a total of 300 adult participants aged between 21- 59 years were selected. In hospital, disease conditioned adult patients were targeted, till the required number of participants were obtain. Nutritional and health status were assessed and then nutritional education was given to 25 adult men and 25 adult women. Pomegranate peel, orange peel, grapes seed and pumpkin seed were selected, shadow dried, powdered and then incorporated in breakfast recipes (idly, dosa, chapatti, putu) by an variation 5g, 10g, 15g and it was assessed by an thirty semi trained panel members. Nutritional quality and microbial count was analyzed to improve shelf life of antioxidant powders and the prepared recipes were popularized among the selected patient in order to control or prevent the diseases.

Key words: *Degenerative diseases, Antioxidant, Nutrition*

1.Introduction

In life span, adulthood is a stage and extends a significant period in an individual's life for maintenance of their health and well-being. The degenerative disease is a continuous process based on degenerative cell changes, affecting tissue or organs. (Srilakshmi.B, 2015). Antioxidant is a substance that reduces damage due to oxygen, such as that caused by free radicals. Well-known antioxidants include enzymes and other substances, such as vitamin C, vitamin E, and beta carotene, which are capable of counteracting the damaging effects of oxidation. Antioxidants are also commonly added to food products (Josh, 2017) . Antioxidants may play a role in the management or prevention of many medical conditions. (Kathleen, 2006).

2. Methodology

Ethical Committee

The study was carried out after grants approval to the research proposal issued by the Institutional Human Ethics Committee of Avinashilingam University.

2.1 Selection of locale and participants

The area chosen for the conduct of the study were hospitals in and around Tirupur city in Tamil Nadu, due to the familiarity. Using the systemic random sampling technique, the target groups of adult participants of both genders were selected for the study. A total of 300 adult participants aged between 21- 59 years were selected randomly for the study.

2.2 Assessment of Nutritional and Health status

The nutritional and health status of the selected participants were assessed using anthropometric assessment such as height, weight, BMI, waist hip circumference. Clinical examination was carried out with the help of physician for the selected participants to identify the nutritional problems. For biochemical estimation, secondary data were collected for the various blood parameters like hemoglobin, blood glucose level total cholesterol and blood count. Dietary assessment was done for a sub sample of the participants to assess the dietary intake.

VOL. 3 ISSUE 8 | APRIL 2018 ISSN 2349-5650

LITERARY QUEST

An International, Peer-Reviewed, Open Access, Monthly, Online Journal of English Language and Literature

Manifestation of Experiential Learning in Paulo Coelho's Novels

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2. Assistant Professor, Department of English, Jansons Institute of Technology, Coimbatore, Tamil Nadu, India

Abstract

Experience has long been considered as imperative for learning and development. Experience cannot be learnt by reading or by being told, it is best learnt through life experiences. Having an experience is the best way or possibly the only way, of coming to know what that experience is like. Confucius rightly said in 450 BC." I hear and I forget, I see and I remember, I do and I understand. Benjamin Franklin in 1750 stated, "Tell me and I forget, teach me and I remember, involve me and I will learn, Julius Caesar held that "experience is the teacher of all things", and Albert Einstein believed that "the only source of knowledge is experience". Experience is the most prevalent term in Coelho's Novels. He says, "To live is to experience things, not sit around pondering the meaning of life." According to him the purpose of life is to taste experience to the highest and to transform better. He gets inspiration from his daily life, from the people he met and from the experience he has acquired through travel. He firmly believes that experience is the best way to acquire knowledge and the knowledge acquired through experience transforms human beings. Hence this

Language in India www.languageinindia.com ISSN 1930-2940 Vol. 18:4 April 2018
India's Higher Education Authority UGC Approved List of Journals Serial Number 49042

Expression of Personal Experience in the Novels of Paulo Coelho

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Dr. Olive Thambi, M.A., M.Phil., Ph.D.

Paulo Coelho
Courtesy: http://www.newszii.com/paulo-coelho-quotes/

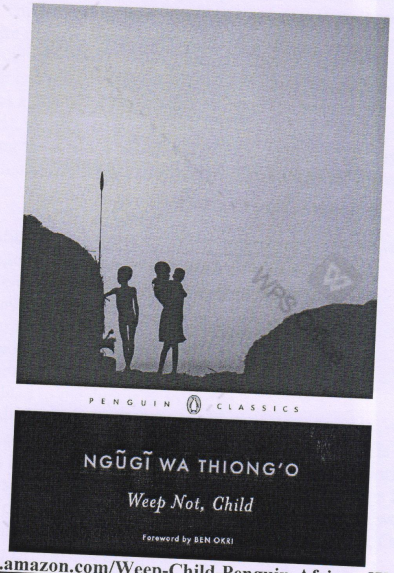
Abstract

Paulo Coelho, one of the most popular Brazilian writers of recent times, is best known for his practice of writing about life lessons in the light of spiritual and mystical realms. His writings are usually optimistic and full of references to miracles and positive endings. He is not only a wonderful writer but a gifted and a brave person who has an amazing ability to write about feelings that one is even afraid to mention. As he aware of many common human experiences, he writes his novels with strong universal themes such as the importance of love, the need for adventure, the joy of fighting for one's dream, etc. He uses his characters as his mouthpiece to answers some of the life's basic questions and his readers are able to see themselves reflected in the eyes of his characters. He considers the experiences and the knowledge he gained through experiences are the real treasure. His novels are based on many of his own experiences. He gets inspiration from his life experiences, people he knew and the places he visited. Hence, this paper aims at exploring the extraordinary life experiences of Coelho and how it's expressed in the Selected Novels.

Language in India www.languageinindia.com ISSN 1930-2940 Vol. 18:7 July 2018
India's Higher Education Authority UGC Approved List of Journals Serial Number 49042

Negritude and the Ubiquity of Western Imperialism in Ngugi's *Weep Not Child*

Dr. Olive Thambi
F. Gabriela Sabatini, Ph.D. Research Scholar



Courtesy: https://www.amazon.com/Weep-Child-Penguin-African-Writers/dp/0143106694

Abstract

Ngugi WA Thiong'o is a prolific writer, poet, critic, essayist, columnist and a playwright. He is a proficient speaker and a confident political writer. He is known for his profundity and his unflinching ability to delineate the current scenario of the Kenyan society. This paper attempts to epitomize the concept of Negritude, and the imperialistic atrocities in the pre-independent Kenya. Ngugi enlivens the importance of Negritude among his characters in his novel *Weep Not, Child*.

International Journal of Interdisciplinary Research in Arts and Humanities (IJIRAH)
Impact Factor: 5.225, ISSN (Online): 2456 - 3145
(www.dvpublication.com) Volume 3, Issue 1, 2018

REMAPPING FEMININE SELF IN MANJU KAPUR'S DIFFICULT DAUGHTERS

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Cite This Article: K. Geetha & Dr. Olive Thambi, "Remapping Feminine Self in Manju Kapur's Difficult Daughters", International Journal of Interdisciplinary Research in Arts and Humanities, Volume 3, Issue 1, Page Number 179-181, 2018.

Abstract:

Indian writing in English has emerged with Post colonial aesthetics, which examines the manner in which the Indian society grapple with the challenges of self-determination and how they incorporate with the western ideologies and conventions. The women writers of the late 20th century focus light on the different facets of the society they live in. Manju Kapur has vividly painted the inner turmoil of Virmati, who wants to fight against taboos, social and family restrictions proves her struggle for not giving up her 'Self', and 'Identity'. The relationship between man and woman is very essential but drastically changing in this materialistic world .However, as a feminist Manju kapur has keenly studied the problem of Virmati and how she wants to remap her role in the present century and gives a new dimension to contemporary thinking. '*Difficult Daughters*', is the story of a young woman Virmati, torn between family duty, the desire for education and illicit love. She falls in love with the neighbour who is already married. She eventually marries him, and finds herself in the battle for her independence. She challenges cultural and social values in order to show her own 'self' and how she moulds her life with the relationship which leads to controversy.

Key Words: Grapple, Remap, Self-Determination & Identity

Introduction:

As a post-colonial feminist**,** Manju Kapur has an actual understanding of social Hyporisis and perception of human foibles in a tradition based society. She is an eminent Indian novelist, was born in 1948 in Amritsar, and graduated from the Miranda House University College for women. She received an M.A. in 1972 from Dalhousie University in Halifax, Canada and an M.Phil from Delhi University. At present she lives in New Delhi where she teaches English literature at her alma mater Miranda House College. Interestingly her very first novel, *Difficult Daughters* (1998) received a huge international acclaim. This novel was published in 1998 which helped Manju Kapur to carve a niche of her own as a chronicler of middle-class Indian manners. Manju Kapur's themes revolve around the marginalizations of women, their power struggles and an inherent desire for identity. She has been even compared to the timeless Jane Austen who has enthralled readers across time and space. In most of her novels, her characters correct their faults through lessons learned because of tribulations. The novelist has very well studied the novels of Jane Austen and much inspired by her narration and style. Kapur's heroines are typically belong to middle class and well educated women with Gynocentric nature. Her plots reveal women's conventional dependence on marriage to safe and sound social status and economic stability. *Difficult Daughters* pays tribute to the enduring bond between mother and daughter. It is based partly on the life of Kapur's mother Virmati, which is also the name of the novel's main character. Kapur writes dedicated this novel as "to my mother and her mother and my father", reveals woman-to-woman attachment. The story set during partition, revolves round Virmati who is caught into an illicit relationship with her married English professor. The professor eventually marries Virmati, installs her in his home and helps her towards further studies in Lahore. But it is small consolation to her scandalized family and even to Virmati, who finds that the battle for her own independence has created irrevocable lines of partition and pain around her.

Review of Literature:

The major tools used in this article are the comments of Nabaneeta Dev Sen, Simon De Beauviour and Bassnett, Susasn. The pioneering works have been *The Second Sex and Sexual Politics*. Making novels as the medium of expression, the novelists have protested against the wrong done to women and have fought for the identity of women. Defining a feminist writer, Nabaneeta Dev Sen writes:

> The feminist writers are those who write as women- they are self-conscious producing women's literature, writing about women,- their rights, their dreams, their problems, their sufferings. (92)

Virmati is depressed to face her daughter husbandless and childless. If tradition-bound women run the risk of losing their identity, nonconformists face personal and social conflicts. Culture establishes the condition of men and women to behave differently. As Simon De Beauviour says:

> When a woman begins her adult life she does not have behind her the same past as does a boy, she is not viewed by society in the same way; the universe presents itself to her in a different perspective. If the difficulties are more evident in the case of the independent woman, it is because she has chosen battle rather than resignation. (696)

ISSN No:-2456-2165

Vulnerabilities and Endurance of Women in Manju Kapur's Home

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Abstract:- The woman's life and struggle under the oppressive mechanism of a closed society are reflected in the novel *Home*. The impact of patriarchy is highly focused on the novel. It also reveals how women characters like Sona, Rupa, and Nisha are suppressed inside their homes in the name of familial values and virtues. This paper aims to analyse, how women in the Indian society become victims of tradition joint family after marriage, and how they suffer and live in the family with an absolute endurance inspite of all vulnerabilities and manmade virtues.

Nissim Ezekiel in his popular poem *Enterprise* has rightly mentioned " Home is where we have to gather grace" which shows how one could find peace of mind and harmony only at one's home not anywhere else.

I. INTRODUCTION

Home is, "The place where one lives lastingly, especially as a member of a family or household." However, for those who live in an actual home, they would know that the power of a home, and that it goes beyond its concrete description. It is an impassioned constitution combined with values and foundation of nurturing. A home is not just a residence built to live in, which would be the definition of a house. Home is a place where the family is at comfort, and it is a place to look forward to new opportunities to live in every day. A home is not built by bricks or wood and is built with the bond and love of family. Home is where memories are cherished and created.

The male-dominated and male-oriented culture immersed the personalities of the typical Indian Women. She loses her identity and left with absolutely no wits and stripped of her independence. Moving towards education, work and politics were a distressing struggle for her because suffering in silence has developed into her very being. She glorified in her sufferings that were inflicted upon her by the free male-chauvinistic society.

The women writers of the 20th-century focus light on the different facets of the society they live in. Manju Kapur has vividly painted the inner turmoil of women characters in her novel *Home*. Male Chauvinistic atrocities in the patriarchal society are depicted through Manju Kapur's Home. Chauvinism is a phenomenon in which they could barely tolerate in the modern world. There are so many vulnerabilities, and predicaments are seen directly or indirectly in this family saga. The women are the silent victims of their family members in the form of ideas, opinions, traditional views, and mechanical actions on them.

Banwari Lal family is traditional and patriarchal. They have always believed that men must leave the house to work, and women work from within. His two sons follow father's way and rules without question. As the head of the house, Banwari Lal is ready to do anything for the honour of the family and to maintain its unity. He believes, United we stand, divided the energy, time and money, and the family will never be squandered. At first, his principles are challenged by his elder son, Yashpl, who falls in love with a customer and then marries her. The opposition of the love marriage is a traditional stigma that prevails in the society. Sona's childlessness and Nisha's empowerment is considered shameful. It has always been believed that a girl is supposed to find satisfaction in her performance of her duties through her multiple roles of mother, daughter, sister and daughter-in-law. The home is a Karma-Bhoomi and for a woman to aspire life beyond the limits of the home is unnatural. Malti Mathur says, "Any woman who wished to give up the security and safety of the confines of the home for an uncertain, unsafe identity outside, are looked upon as no less than a Jezebel."(85)

Sona is a beautiful woman, married to Yaspaul. After hearing ten years of criticism as an infertile woman, she gets pregnant. During those ten years, she has always been compared with Sushila, who is her co-sister and wife of Pyare Lal. Susila delivers Ajay within a year and Vijay in the next few years. Sona's mother-in-law used to hurt her without any reason. Sona's childless situation continued to make her vulnerable. Her sister Rupa who is also childless, says to Sona, " Even God needs to be helped sometimes." (23) Sona tries to calm herself by praying and closing her eyes to concentrate on her favorite image of God, and says, "I am growing old bless us with a child, girl or boy, I do not care, but I cannot bear the emptiness in my heart." (19) After the death of her sister-in-law Sunita, her father in law brings Vicky, a ten-year-old boy. The boy was pushed towards Sona, when she feels very bad for this fresh arrangement by the fates for her certain misery. She admits to Yashpaul that it is impossible for her to look after Vicky. Sona does not want to be the mother of ten years old boy, a borrowed child from another woman's womb. When her mother in law says, "God has rewarded your devotion. Sometimes our wishes are fulfilled in strange ways." (26) Sona felt her chest would burst with pain.

ZENITH International Journal of Multidisciplinary Research _____**ISSN 2231-5780**
Vol.8 (10), OCTOBER (2018), pp. 519-528
Online available at zenithresearch.org.in

CUSTOMERS PERSPECTIVE OF GREEN BANKING INITIATIVES IN SBI WITH REFERENCE TO COIMBATORE DISTRICT

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Abstract

Green banking is comparatively a new development in the financial world. It is an emerging concept for environment sustainability and reduces the carbon footprint from the banking industry. Green banking will be mutually beneficial to the consumers, banks, industries and the economy. Many business houses have already started green financing. It is necessary to identify various initiatives taken by bank on the concept of green banking in order to make the customer user friendly. Banking industries tries to find out the ways to go green and this papermainly focus on customer's awareness and satisfaction of green banking in State Bank of India in Coimbatore district. Since SBI is the first public sector bank to introduce green banking, it is chosen for the study. Also it aims to identify the customer's usage relating to green banking service.

Keywords: Green banking, Strategies, Sustainability, Customer's perspective.

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Ultrasonic Velocity and Heat Transfer Measurement of Binary Fluid (Diethyl Amine + Tetra Hydro Furan) and Hybrid CuO Nanofluid (CuO + Diethyl Amine + Tetra Hydro Furan)

Authors: Rohini, B [1] ; Jeevaraj, A. Kingson Solomon [2] ;
Source: Advanced Science Letters, Volume 24, Number 8, August 2018, pp. 5721-5725(5)
Publisher: American Scientific Publishers
DOI: https://doi.org/10.1166/asl.2018.12185

Effect of Annealing Temperature and Ultrasonication on the Structural Properties of Beryllium Oxide Nanoparticles Synthesized via Chemical Precipitation Method

Authors: Britto, T. Merita Anto; Jeevaraj, A. Kingson Solomon
Source: Journal of Bionanoscience, Volume 12, Number 2, April 2018, pp. 266-270(5)
Publisher: American Scientific Publishers
DOI: https://doi.org/10.1166/jbns.2018.1522

Study on the Thermal Conductivity and Rheological Properties of Carboxyl (–COOH) Functionalized Multi-Walled Carbon Nanotube (MWCNT)-Dowtherm A Nanofluids

Authors: Premalatha, M.; Jeevaraj, A. Kingson Solomon
Source: Journal of Bionanoscience, Volume 12, Number 3, June 2018, pp. 370-377(8)
Publisher: American Scientific Publishers
DOI: https://doi.org/10.1166/jbns.2018.1529

Particulate Science and Technology ›

An International Journal

Volume 36, 2018 - Issue 5

Original Articles

Preparation and characterization of hydroxyl (–OH) functionalized multi-walled carbon nanotube (MWCNT)–Dowtherm A nanofluids

M. Premalatha & A. Kingson Solomon Jeevaraj

Pages 523-528 | Accepted author version posted online: 09 Dec 2016, Published online: 02 Feb 2017

ABSTRACT

In the present work, the thermal conductivity and viscosity of hydroxyl (–OH) functionalized multi-walled carbon nanotubes (MWCNTs)–Dowtherm A (eutectic mixture of biphenyl ($C_{12}H_{10}$) and diphenyl oxide ($C_{12}H_{10}O$)) nanofluids are discussed. As-received hydroxyl (–OH) functionalized MWCNTs are characterized using x-ray diffraction (XRD), FT-Raman spectroscopy, Fourier transform infrared spectroscopy (FTIR), transmission electron microscopy (TEM), and thermogravimetry, differential thermogravimetry, and differential scanning

Bull. Mater. Sci. (2018) 41:93
https://doi.org/10.1007/s12034-018-1612-4

Synthesis and characterization of hydroxyapatite/alumina ceramic nanocomposites for biomedical applications

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MS received 13 July 2017; accepted 17 November 2017; published online 6 July 2018

Abstract. In the present work, nanocrystalline hydroxyapatite/alumina (HAp−Al_2O_3) composite was prepared under specially designed stir-type hydrothermal reactor. The composite was prepared at two different temperatures under autogenous pressure and analysed for crystallinity, size, shape, composition and thermomechanical stability. The electron microscopy study shows the formation of HAp−Al_2O_3 composite nanorods with uniform distribution. The thermogravimetry analysis reveals better thermomechanical property with minimal weight loss at increased temperature. The effect of different concentrations of HAp−Al_2O_3 composite powders against MG63 human osteosarcoma cell lines shows excellent compatibility (80%) at high concentration of 200 $\mu g\ ml^{-1}$. These studies facilitate the formation of biocompatible HAp−Al_2O_3 composite nanorods for biomedical applications.

Keywords. Hydrothermal; hydroxyapatite; alumina; composite; biocompatibility.

1. Introduction

Hydroxyapatite (HAp) is the major mineral component of human bone and dentin in hierarchical arrangement with organic collagen fibrils. Synthetic hydroxyapatite has identical structural similarity with natural apatite. But due to its brittleness and low mechanical stability, reinforcement of polymers, metals and ceramics along with HAp to form a biocomposite has received much attention in the field of newer biomedical materials research [1]. Reinforcement of metal oxide ceramics such as ZrO_2, TiO_2 and Al_2O_3 at different stoichiometric ratios with pure hydroxyapatite enhance the mechanical stability and bone-like apatite formation [2]. Among the above reinforced materials, Al_2O_3-loaded HAp shows better mechanical stability and biocompatibility with surrounding cells and tissues. The incorporation of inert metal oxides such as Al_2O_3 acts as crack arresters and increases the mechanical strength of the hydroxyapatite composites [3,4]. Furthermore, addition of alumina into hydroxyapatite increases the compressive and bending strength of the composites [5–7]. Also, the *in vitro* compatibility evaluation of HAp−Al_2O_3 nanocomposites prepared under microwave-assisted synthesis and co-precipitation method shows similar biochemical activity like natural hydroxyapatite in bone. The bio-inertness of alumina has no harmful effect on cells and tissues [8,9]. Several methods were employed to synthesis HAp−Al_2O_3 composites such as sol–gel [10], co-precipitation method [11], ball mill [12], under-water shock compaction [13], protein-foaming consolidation method [14] and microwave-assisted preparation [15]. Based on the literature study, no hydrothermal experimental procedure was reported on the preparation of HAp−Al_2O_3 nanocomposites. Since, hydrothermal synthesis favoured the formation of tunable nanostructures of hydroxyapatite [16] and metal oxides with uniform morphological distribution [17], in the present work, HAp−Al_2O_3 nanocomposite prepared under stir-type hydrothermal process. The prepared composite powders were examined for structural, morphological, elemental and thermal analyses. Also, the biocompatibility of the prepared nanocomposite was studied against MG63 human osteosarcoma cell lines using MTT assay. The change in cellular morphology was also investigated under optical microscope.

2. Materials and methods

2.1 *Materials*

The analytical grade calcium nitrate tetrahydrate $(CaNO_3) \cdot 4H_2O$, diammonium hydrogen phosphate $(NH_4)_2HPO_4$ and aluminium nitrate $Al(NO_3)_2 \cdot 9H_2O$ reagents were used as starting materials for the preparation of HAp−Al_2O_3 composite. Twenty-five percent of ammonia solution was added to adjust pH of the reaction. All the chemicals purchased from Merck were used without any further purification. The stir-type hydrothermal vessel is designed and assembled at Amar equipments, Mumbai, India.

Digest Journal of Nanomaterials and Biostructures Vol. 13, No. 3, July - September 2018, p. 685 - 692

EFFECT OF FIBROBLAST CELL LINES ON CIPROFLOXACIN LOADED COMPOSITE SCAFFOLD FOR BONE REGENERATION

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Osteomyelitis is a bone infection and inflammation caused by bacteria. Osteomyelitis often requires surgery and prolonged antibiotic for weeks or months. The aim of this proposed work is provide a cost-effective biomaterial that can be implanted at the target site to effectively eradicate the disease. One of the downside of this disease is the recurrence of the disease, even after treatment. The ciprofloxacin loaded hydroxyapatite/agarose scaffold is synthesized and characterized to selectively target the diseased area, to prevent the recurrence of the disease by providing local sustained antibiotic drug delivery which is considered advantageous over the conventional methods. The biomaterial is prepared in a way to make it biocompatible by using the materials like Hydroxyapatite (HAp), which mimics the natural bone composition; Agarose, which is a natural polymer that provides excellent mechanical strength and porous structure to help cell ingrowth and Ciprofloxacin, which is an anti-bacterial drug that helps to treat the disease. The prepared material is characterized using Fourier Transform Infra-Red spectroscopy (FT-IR) and X-Ray Diffraction (XRD). The biocompatibility test is done by MTT Assay to determine the morphology changes, cell viability and cell membrane integrity.

(Received January 11, 2018; Accepted July 27, 2018)

Keywords: Osteomyelitis, Hydroxyapatite, Agarose, Ciprofloxacin, Drug delivery

1. Introduction

Bone regeneration is a complete restoration of lost or injured tissue, and healing encompasses repairing some original structure. Regeneration is typical of tissues with high proliferation capacity by providing a scaffold. The scaffold assists cell attachment and subsequent proliferation and differentiation [1]. Osteomyelitis is an infection typical of bone and is caused by pyogenic bacteria. Typical microorganisms which are prevalent causative agents of the disease are Staphylococcus aureus. Osteomyelitis following grafting of prosthesis is commonly caused by Staphylococcus aureus. Antibiotic administration is essential in order to reduce infection risks during the grafting procedure and healing process or to treat pre-existing infections. Their direct injection into the damaged site is generally not effective because of their rapid diffusion from the injected site, as well as their enzymatic digestion and deactivation [2].

Treatment after initial surgical debridement often comprises the implantation and subsequent removal of antibiotic-impregnated beads in parallel with systemic broad-spectrum antibiotics before bone grafting can be carried out. This is a lengthy and costly process, with 3.7 % of infections unsuccessfully treated [3]. These issues can be overcome by combining scaffolds with a drug delivery system (DDS). The DDS can promote a prolonged drug release both directly and selectively at the implantation site, and it can protect growth factors and protein molecules from degradation.

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Journal of Materials Science: Materials in Electronics
https://doi.org/10.1007/s10854-018-0389-y

Electrodeposition of nano crystalline cobalt oxide on porous copper electrode for supercapacitor

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Received: 6 September 2018 / Accepted: 14 November 2018

Abstract
The cobalt oxide thin films were prepared by electrodeposition methods on to porous copper substrate. As-deposited films were obtained as Co_3O_4 films with the help of heat treatment at 300 °C for 2 h. Their structural and surface morphological properties were investigated by using X-ray diffraction, Fourier transformation analysis and field emission scanning electron micrograph (FESEM), atomic force microscope, energy dispersive X-ray analysis techniques (EDAX). The X-ray diffractogram reveals the formation of cobalt hydroxide CoOOH with orthorhombic crystal structure and cobalt oxide Co_3O_4 with cubic crystal structure. The FESEM micrographs confirms the morphology of prepared films, also EDAX spectra confirms the presence of Co and O elements of the solid films. The electrochemical performance of the films was studied in aqueous 1 M KOH electrolyte using cyclic voltammetry. The cyclic voltammograms exhibits symmetric nature and increase in capacitance with respect to the film thickness. The maximum specific capacitance of cobalt hydroxide CoOOH is 602 F g^{-1} and cobalt oxide Co_3O_4 is found to be as 630 F g^{-1}. The above investigation shows that low-cost cobalt oxide electrode can be a potential application in supercapacitor.

1 Introduction

Energy storage is considered as the grand challenge among the other renewable energy systems such as wind and solar power due to their intermittent nature. The development of flexible, cost effective and sustainable energy storage materials is an urgent, necessary step to meet the increasing demand for energy storage. Electrochemical capacitors (EC), in other words supercapacitors, store and release energy very rapidly and have excellent long-term cycle ability. As such, they are ideal for high power applications such as hybrid electrical vehicles, portable electronic devices, cranes and forklifts [1]. An EC is an energy storage device that tends to bridge the gap between batteries and conventional capacitors [2]. It consists mainly of two electrodes and an electrolyte and based on the charge storage mechanism, EC is classified as non-faradaic [it stores energy by accumulating charges in the electrostatic double layer, and is also known as electric double-layer capacitor (EDLC)], and faradaic supercapacitors (FS) referred to as pseudocapacitors. Single transition metal oxide electrodes as suffer from a high initial capacity loss and poor cycling performance [3]. Charge (electrons or ions) transport within the bulk of these materials is crucial to their performance since their pseudocapacitive activities rely on redox reactions. Unfortunately, most of the transition metal oxides provide insufficient charge transport, which limits their efficient use. Most often, the high theoretically predicted pseudocapacitances are seldom obtained in practical applications. To improve the electrode capacity, cycling performance, and rate capability, some studies have proposed the synthesis of transition metal oxide materials with more than one metal oxide structure for supercapacitor applications. In addition, the incorporation of metals into active metal oxide materials was found to increase the charge transfer in electrode materials along with improved ion diffusion [4]. The electrochemical performance of electrode materials is highly dependent on its nanoscale structure, such as particle size, surface area, pore volume and crystallinity [5]. These properties in turn depend on the deposition methods and parameters such as temperature, pH, precursor concentration etc. Engineering the size, morphology and porosity of the active material as well as developing core–shell structures and modifying the contact between

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Published online: 03 December 2018

RJC

RASĀYAN *J. Chem.*
Vol. 11 | No. 1 |219-227 | January - March | 2018
ISSN: 0974-1496 | e-ISSN: 0976-0083 | CODEN: RJCABP
http://www.rasayanjournal.com
http://www.rasayanjournal.co.in

MALACHITE GREEN DYE DEGRADATION USING $ZnCl_2$ ACTIVATED *RICINUS COMMUNIS* STEM BY SUNLIGHT IRRADIATION

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ABSTRACT

The degradation capacity of Malachite Green is tested with ZRCS using Sunlight irradiation by batch mode experiments such as the effect of pH, the effect of contact time, the effect of adsorbent dosage and initial dye concentration. The result indicates that the maximum degradation of Malachite Green is obtained as 85.30% at pH 6 in 90 minutes. The optimum conditions for the degradation of Malachite Green dye are 40ppm initial dye concentration and optimum dose of the carbon is 0.2g. The isotherms and isotherm constants are described by using Langmuir and Freundlich isotherm models for the degradation of Malachite Green using ZRCS. The Langmuir and Freundlich Models are very well fitted with the equilibrium data. The value of q_e is 16.6mg/g for Malachite Green on ZRCS. From the value of q_e, it is fitted well with a pseudo first order kinetics. ZRCS could be used as an effective adsorbent in cationic dye degradation.

Keywords: *Ricinus Communis* stem, $ZnCl_2$, degradation capacity, Malachite Green, Adsorption isotherms, Kinetics.

INTRODUCTION

Water is the most important compound for the survival of human beings, animals and plants. But the continuous increase in various activities by human beings like urbanization and industrialization is the main reason for causing pollution of water bodies.[1,2,3] The aqueous streams are contaminated by dyeing process carried out in leather, paper, textile, printing, cosmetics and food industries.[4] Discharge of the organic dyes into the environment cause serious problems such as Chemical Oxygen Demand, Biological Oxygen Demand, Increase of toxicity and human health issues.[5,6,7] Malachite green is a basic triphenylmethane dye ($C_{23}H_{25}N_2Cl$) used for dyeing of anionic fabrics bearing negative charge such as nylon, silk, acrylics and wool for a bright appearance.[8] The structure of Malachite Green has amino group and chromophores with positive ions and it is soluble in water.

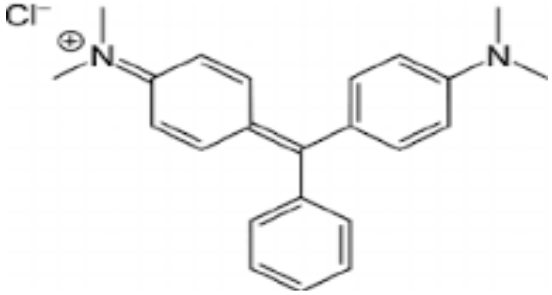

Fig.-1: Chemical Structure of Malachite Green

http://dx.doi.org/10.7324/RJC.2018.1111986

Degradation of Methylene Blue by Chitosan Alumina Composite using Sunlight Irradiation

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Abstract

In this present work the photo degradation ability of the Chitosan Alumina Composite is analysed with Methylene Blue dye using sunlight irradiation by varying the contact time, pH, adsorbent dosage and initial dye concentration. The maximum percentage of dye degradation of Methylene Blue onto CAC is obtained at pH 9 in 270 minutes. The optimum condition for the Methylene Blue dye degradation is 0.15g dosage of CAC and the concentration of the dye is 20 ppm.

The degradation of Methylene Blue on CAC is explained by Langmuir and Freundlich isotherm. Adsorption of Methylene Blue onto CAC is favourable for Langmuir and Freundlich isotherms. The q_e value of CAC is 17.78 mg/g. From the results, it follows the pseudo first order kinetics. Chitosan Alumina Composite could be effectively used for the cationic dye degradation.

Keywords: Chitosan Alumina Composite (CAC), Methylene Blue, Photo degradation, Kinetics, Isotherms.

Introduction

Nowadays the use of synthetic dyes increased due to industrialization and urbanization. Discharge of these dyes from various industries like paper, leather, textile, cosmetics and food into the water resources cause many adverse effects to human beings, animals and plants. It also destroys the aesthetic nature of the environment [1-4]. Annually, more than 7,00,000 tonnes of dye stuffs are generated from various industries[5]. Methylene blue (Basic blue 9) is the most commonly used classical cationic dye with λ_{max} value of 663nm and it is used for dyeing in cotton, silk, leather and cellulosic fibers[6,7].

It has three mesomeric structures in which the positive charge is replaced either on the sulphur atom or amine nitrogen atom. It is water soluble, dark green crystalline solid and it gives Methylene Blue cations and chloride ion in solution. Methylene Blue is blue colour in oxidizing environment, it is readily reduced by reducing agents and it becomes colourless (Leuco form). It causes eye burns, cancer, skin irritation, breathing problems, increased heart rates on inhalation, headache, fever, vomiting, bladder irritation etc.[8,9] It is necessary to remove methylene blue from the industrial effluent. Numbers of attempts have been made by the previous researchers as methylene blue health effect as a pollutant in wastewater through the application and development of different adsorbents for its degradation ability[10].

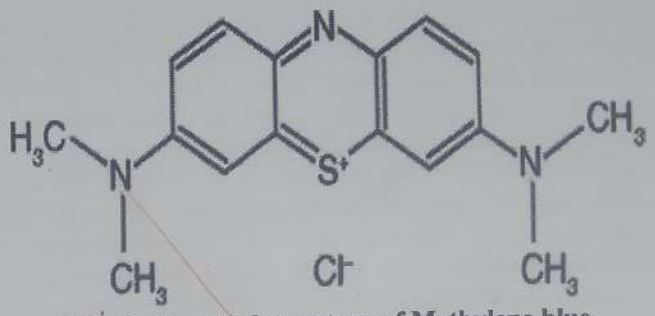

Fig. 1: Chemical structure of Methylene blue

Different techniques are available to treat the Methylene Blue dye wastewater such as coagulation, filtration, adsorption, electro coagulation, reverse osmosis, biological degradation, photo chemical degradation, flocculation and degradation using sunlight irradiation[11-15]. Among these methods, sunlight irradiation is effective and new technique particularly for the non-degradable dyes.[16-18] Solar energy has much potential to provide for the future energy needs and exploitation of this alternate energy resources is necessary. A number of adsorbents have been reported to degrade the dye. Activated carbon is the commonly used material for the wastewater treatment because it has a large surface area, variable characteristics of surface chemistry and porosity. The main drawback of the activated carbon is more expensive than other adsorbents[19].

The cost is decreased by number of attempts, so it has been made to find more alternative, low cost adsorbents like activated carbon prepared from Neem Leaves[20], Activated Carbon[21], Brazil nut shells[22], Garlic Peels[23], Rice Husk[24], Water Hyacinth Root Powder[25], Wheat Shells[26], Guava Seed[27], Wheat bran[28] etc. Recently, bio sorbent materials like fungal biopolymers are used[29,30].

So chitosan, a cationic polymer from natural resources has received much interest of the researchers due to its less cost, biodegradability, nontoxic and environment friendly qualities[31]. Chitosan is a straight chain copolymer made of (1-4)-linked D-Glucosamine and N-Acetyl - D-Glucosamine. Deacetylation of chitin yields chitosan. Chitosan is the second abundant polymer in nature after the cellulose[32].

Research Article

Effective Utilization of Eichhornia Crassipes in Decolourisation of Cationic dyes from aqueous solution

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Abstract

Adsorption is an ideal alternative technique to other expensive treatment options for removal of colour from wastewaters. In this study Eichhornia Crassipes, an aquatic weed was used as a raw material to prepare activated carbon by various methods according to the standard procedures. The effects of different system variables were studied in the batch tests using Methylene blue and malachite green dyes at different dilutions with the Eichhornia Crassipes carbon. In-order to develop an effective and accurate design for removal of dye, adsorption kinetics and equilibrium data are essential basic requirements. Results of the kinetic studies show that the adsorption reaction is second-order kinetic model. Elovich model and intra particular diffusion corresponding constants were calculated and discussed. Equilibrium isotherms were analyzed by Langmuir, Freundlich and Tempkin isotherms. The adsorption equilibrium data obeyed Langmuir, Freundlich, Tempkin isotherms. Desorption and use of desorbed datas has been obtained.

Keywords: Cationic dyes, Eichhornia Crassipes, Adsorption and Isotherm

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Introduction

One of the world's most polluting industries is the textile-dyeing sector, which in Asian nations releases trillions of liters of chemically tainted wastewater. Each year, textile-dyeing industry gulps down trillions of liters of fresh water, together with massive amounts of chemicals. The untreated wastewater from those industries is then dumped into rivers that bring its toxic content to the sea, where it spreads around the globe [1]. Methylene blue (MB) is synthetic aromatic complex, used for many textile and dyeing industries. MB damages eye, on gasp causes headache, acute breathing problems, increases sweating and heart rate. On ingest causes abdominal pain, mild bladder irritation, dizziness, vomiting, stomach upset and frequent urination [2]. Malachite Green (MC) is a cationic dye, used for the textile, paper and leather dyeing industries. It has many medicinal values like antimicrobial in aquaculture to enlarge fish hatchery. It is also used as food coloring and additives in food processing units. In 1992, eating fish containing traces of malachite green as contaminants cause significant health hazards in human being was suggested by Canadian authorities [3]. In June 2007, the Food and Drug Administration (FDA) blocked the importation of several varieties of seafood due to continued malachite green contamination [4]. MC is injurious to eyes, skin, bones, and stomach. On ingestion causes anemia, diarrhea, infertility, abdominal pain and irritation to heart, kidney, stomach and lungs. It also reduces RBC count and raise WBC count, which delays coagulation of blood [5]. In particular, these dyes are synthetic aromatic compounds; which are highly toxic, carcinogenic or mutagenic to life forms [6]. The presence of even very low concentration of dyes makes water highly colored and aesthetically undesirable. Therefore colour should be removed from the effluent before they are discharged.

Adsorption with activated carbon has been proved to be an effective and attractive process for the treatment of colored waste water. Countries like India; there is a need to search for a new class of cost-effective materials. In recent years attention has been focused on agricultural waste annually. There are numerous agricultural by products and residues have been proved to remove dyes from aqueous solution [7]. Identifying new, economical, highly effective and abundantly available material is still needed.

Eichhornia crassipes (*Water hyacinth*) constitutes an important part of an aquatic ecosystem. The direct effect of Eichhornia Crassipes on freshwater bodies is its obnoxious smell. It kills the aquatic biota also and depletes oxygen completely from water streams. Water hyacinth as a very promising plant with tremendous application in wastewater treatment is already proved. Water hyacinth is used to treat wastewater from dairies, tanneries, sugar factories, pulp and paper industries, palm oil mills, distilleries, etc [8]. All the efforts of scientists and technocrats all over the world

RESEARCH ARTICLE
Department of Biotechnology
Jayasheela et.al / IJIPSR / 6 (03), 2018, 55-64
ISSN (online) 2347-2154
DOI: 10.21276/IJIPSR.2018.06.03.671

International Journal of Innovative Pharmaceutical Sciences and Research
www.ijipsr.com

IN-VITRO CYTOTOXIC STUDIES OF *Viburnum punctatum* Buch. - Ham. ex D. Don ETHANOLIC LEAF EXTRACT AGAINST MCF-7 BREAST CANCER CELL LINES

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Abstract

Viburnum punctatum Buch.-Ham. ex D. Don belongs to Caprifoliaceae family is a medicinally important plant also known as "Konakaram" commonly in Tamil. It is a small evergreen tree, commonly found in moist forests and in sholas, above 1200 m in South East Asia. Many species of *Viburnum* are recognized for their medicinal properties from very early times of this century. The *Viburnum punctatum* leaves were traditionally used for the treatment of fever, stomach disorder and mentioned to possess the anti - periodic effect. The ethanol extract of *V. punctatum* leaves were evaluated for *invitro* cytotoxicity studies against breast cancer MCF – 7 cell lines using MTT cellular viability assay. The result showed a remarkable anticancerous activity at all concentrations in a dose dependent manner. By increasing the concentration of the ethanolic extract, the average absorbance is decreased. When determining 6.45 % inhibition at 10 µg/ ml, the highest absorbance of 1.102 was recorded while 0.429 absorbance was recorded with 63.58 % inhibition at the concentration of 100 µg/ m of ethanol extract. The IC_{50} value is 56.73 µg/ ml.

Keywords: *Viburnum punctatum* Buch.-Ham. ex D. Don, Ethanolic leaf extract, MCF – 7 cell lines, MTT assay

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EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 5
Issue: 3
815-819
Year: 2018

EVALUATION OF IN-VITRO ANTI-INFLAMMATORY ACTIVITY OF CORDIA MONOICA (ROXB.) LEAVES

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Article Received on 13/01/2018 **Article Revised on 05/02/2018** **Article Accepted on 26/02/2018**

ABSTRACT
The present exploration was carried out to determine the *in-vitro* anti-inflammatory activity of *Cordia monoica* (Roxb.) leaves. Ethanol and Ethyl acetate extract of *Cordia monoica* leaves were taken for the study. The *in-vitro* anti-inflammatory assay was evaluated using protein denaturation assay and Proteinase inhibitory method. In both the methods, the ethanolic extract exhibited better activity than ethyl acetate when compared with standard (Aspirin). The extracts of *Cordia monoica* leaves showed dose dependent activity. The activity increased with increasing concentration. The phytochemical compounds such as phenol, tannin, flavanoid may be responsible for the anti-inflammatory activity. Thus it can be concluded that *Cordia monoica* leaves possess remarkable anti-inflammatory activity.

KEYWORDS: *Cordia monoica*, IC_{50}, protein denaturation, proteinase inhibition, Aspirin.

INTRODUCTION
Inflammation is a response to infection, destruction or injury which is characterised by pain, heat, redness, swelling and disturbed physiological functions. When living tissues are subjected to trauma, Inflammation occurs which leads to injury of cells. An acute inflammation builds up into chronic inflammation on persisting.[1] The inflammation process consists of step by step mechanism such as degeneration, exudation and proliferation. Inflammation is elicited by the chemical mediators released from the injured tissue, and also from antigen- antibody interactions.[2]

Acute inflammation ensues in vascular tissues and is mainly initiated due to mechanical damage, chemical damage, insect bites, infections due to microorganism and radiations. Chronic inflammation is long-term and inflammatory changes takes place in the connective tissue of joints and heart. They include rheumatic arthritis, Ostero arthritis, rheumatic fever and systemic lupus erythematous.[3]

There is a surplus production of oxygen, hydroxyl, hydrogen peroxide ions and increased activation of phagocytes during inflammatory disorders.[4] These free radicals will initiate lipid peroxidation that result in tissue damage. The production of mediators and chemotactic factors further activates an immune response.[5] In Arthritic conditions, these reactive oxygen species activate matrix metallo proteinase that leads to tissue damage.[6]

The drugs used for inflammatory conditions are non-steroidal anti-inflammatory drugs which cause adverse effects, especially gastric irritation.[2] Natural products have contributed to the development of modern medicine. Several investigations have proven that many medicinal plants have anti-inflammatory activity in the past few decades. Scientific reports support that drugs from medicinal plants were able to decrease inflammation.[7]

Cordia monoica Roxb. belonging to Boraginaceae family is a multi-stemmed evergreen shrub or small tree. *Cordia monoica* Roxb. distributed worldwide is found mainly in India, Sri Lanka and Africa. In India, the distribution is widely in southern part of all districts of Tamil Nadu, Andhra Pradesh and Kerala.[8] *Cordia monoica* Roxb. have several uses in traditional medicine. The crushed leaves with a cup of water are orally given to treat a local illness termed as MICH. MICH is a febrile disease with symptoms such as sweating, headache and fever.[9] The

INVIVO ANTI - PYRETIC ACTIVITY OF *CORDIA MONOICA* (ROXB.) ETHANOLIC LEAF EXTRACT

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***ABSTRACT*: The Present study was carried out to evaluate the anti-pyretic activity of *Cordia monoica* (Roxb.) leaves. The anti-pyretic activity of *Cordia monoica* (Roxb.) leaves was assessed using Brewer's Yeast Induced Pyrexia Method in Wistar Albino Rats. The ethanolic extract of *Cordia monoica* (Roxb.) leaves at a dose of 100mg/kg bw and 200 mg/kg bw was used for the activity. The result was dose dependent. The ethanolic extract of *Cordia monoica* (Roxb.) leaves showed a statistically significant anti-pyretic activity in experimental rats. The present study justifies the use of *Cordia monoica* (Roxb.) in the treatment of fever and hence can be used for further experiments.**

***KEYWORDS*: *Cordia monoica* (Roxb.) leaves, ethanolic extract, anti-pyretic activity, Wistar Albino Rats, Brewer's Yeast.**

I. INTRODUCTION:

Since the dawn of civilization, people have used plant and plant extract for various purposes to treat diseases. Ethno-botanical preparations have been used by various cultures for various reasons around the world. Pyrexia is defined as the combination of indigestion, seasonal variations and significant alteration in daily routine in Ayurveda (Gupta *et al.,* 2008). Fever is associated with elevation of body temperature and its predicted aftermaths. It is related to behavioural features such as lethargy, depression, hyperalgesia, sleepiness, anorexia, etc. Fever has its base with a number of disease conditions such as infections, skin inflammation, tissue destruction, and cancer, disorders due to metabolism, immunological disorders and due to incompatible blood products (Emdad Hossain *et al.,* 2011). Cytokines, interleukins, interferon and tumor necrosis factor alpha are formed in large amount during fever. This in turn increases PGE 2 that will induce hypothalamus to increase body temperature (Rajani *et al.,* 2011). However, antipyretic medication can be effective in lowering the temperature. It may also include the affected person's comfort (Duraisankar and Ravichandran, 2012).

Many anti-pyretic drugs that have been used clinically for the treatment of fever, drowsiness, inflammation sometimes leads to adverse reactions and fulfilment can be minimal as such (Dhillon and Kaushik, 2009). There is a search for a safer antipyretic drug without any side effects still now (Bennett and Brown, 2003). Therefore, there is a need to search equally efficient herbal medicines that with less toxicity and also free from side effects.

Cordia monoica Roxb. belonging to Boraginaceae family is a multi-stemmed evergreen shrub or small tree. *Cordia monoica* Roxb. distributed worldwide is found mainly in India, Sri Lanka and Africa. In India, the distribution is widely in southern part of all districts of Tamil Nadu, Andhra Pradesh and Kerala (Nadkarni, 1976). *Cordia monoica* Roxb. have several uses in traditional medicine. The crushed leaves with a cup of water are orally given to treat a local illness termed as MICH. MICH is a febrile disease with symptoms such as sweating, headache and fever (Giday, 2001). The leaf preparations of several species of *Cordia* are used in traditional medicine as remedies for some tumoral formations (Hartwell, 1982; Rapisarda *et al.,* 1993). Based on the traditional use, the present study was carried out to evaluate the antipyretic activity of ethanolic extract of *Cordia monoica* Roxb. leaves.

II. METHODOLOGY

2.1 MATERIALS AND METHODS:

2.1.1 Collection of Plant Material:

Cordia monoica Roxb. belonging to Boraginaceae family is a shrub, broadly scattered in most districts of Tamil Nadu on gravel mount sides. The leaves of *Cordia monoica* were collected in the month of June from Maruthamalai Hills of Coimbatore, Tamil Nadu, India. Flowering shoots of the plants were also collected for identification. The collected plant material was identified and their authenticity was confirmed by comparing the voucher specimen at the Botanical survey of India, Coimbatore, Tamil Nadu, India (BSI/SRC/5/23/2014-15/Tech/512). The collected specimens were deposited in the Department of Biotechnology, Sri Ramakrishna College of Arts and Science, Coimbatore, Tamil Nadu, India.

2.1.2 Extraction Process:

Cordia monoica leaves were cleaned to eliminate dirt and then shade dried. Then the dried leaves were powdered in mechanical grinder fine enough to pass through a No.40 sieve for powder analysis. Coarse leaf powder was used for further extraction process

Biotechnol Res 2018; Vol 4(1):1-10
eISSN 2395-6763

ORIGINAL RESEARCH

Commercialization of fish processing wastes on various ways

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• Received: 18 October 2017 • Revised: 15 November 2017 • Accepted: 07 December 2017 • Published: 18 December 2017 •

ABSTRACT
This study was carried with the objective to study and compare the quality characteristics of the biofertilizer made from the fish processing waste. Comparison of the microbial load of the soil alone, after the treatment of chemicals, organic fertilizer and biofertilizer made from the fish processing waste. Parameters like physical characteristics, nutrient composition, sensory qualities of few vegetables were studied. Biofertilizer grown vegetables got higher values for colour, pod length, pod weight and taste.

KEY WORDS: *Biofertilizer, fish processing waste, vegetables*

INTRODUCTION

Fish processing wastes generates considerable quantity of waste in the form of edible and non-edible byproducts. The major non edible byproducts arising out of fish processing waste include viscera, skin scales, bones and bone frames. Majority of the fish processing waste is unorganized hence facing disposal problems. These wastes are an important source of proteins and lipids and efforts are being made to recover these biomolecules. Of these bimolecules lipids, fish oils, squalene, vitamins, cholesterol carotenoids, protein hydrolysates peptides, amino acids, collagen, gelatin, enzymes can be recovered. The recovery of these components with potential biological activities and functionalities provides a means for value addition to the fish processing waste. There are so many applications with the fish processing wastes such as the biofertilizer, biopesticide, nutritional supplements for the animal feed, isolated enzymes are used for dehairing, deskinning, soap manufacturing, bioremediation, metal leaching, food preservation. In this paper we focus on the application of fish processing wastes as biofertilizer .

Mostly all farmers are now gradually shifting back to organic farming in India, as extensive dependence on chemical farming has led to the depletion in soil fertility. In this context Tanusree (2011) opines that, organic farming is more economical to the farmer than chemical farming as it saves the cost of external inputs and utilizes the inputs present in the farm itself. Plant growth regulators are the organic chemical compounds which modify or regulate physiological process in an appreciable measure in plants when used in small concentrations. They are readily absorbed and move rapidly through tissues when applied to different parts of the plant. Either to, plant growth regulators have gained wide acceptance in many flower crops for optimizing the yield of plants by modifying growth, development and stress behavior. Hence, strategies such as application of organic manures along with foliar application of bioregulators are

Journal of Innovations in Pharmaceutical and Biological Sciences (JIPBS)
ISSN: 2349-2759
Available online at www.jipbs.com

Research article

In-vitro cytotoxic studies of *Cordia monoica* (Roxb.) leaves on HeLa E 139 cell lines

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Key words: *Cordia monoica* (Roxb.), Boraginaceae, HeLa cell line E139, MTT Assay.

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Abstract

Aim: The present study was carried out to determine the cytotoxicity of *Cordia monoica* (Roxb.) leaves on cancer cell lines. **Materials and methods:** *Cordia monoica* (Roxb.) belongs to Boraginaceae family and is commonly known as sand paper. The flowers are cream in color and turn brown on drying. The leaves of the plant have a texture of sandpaper. The Leaves of *C. monoica* was extracted with ethanol and subjected for *in-vitro* anti-tumor studies. The *in-vitro* Cytotoxicity screening was carried out with HeLa E 139 cell line using MTT assay. **Result:** The study indicated that the extract is toxic to the cell at higher concentration and was dose dependent. The plant extract has cytotoxic effects on HeLa E 139 cell line as concentration increases. **Conclusion:** Hence, the present study supports *C. monoica* (Roxb.) can be a potent anti-cancer herb if it is exploited.

Introduction

Cancer known as malignant tumor is a dreadful disease that results in an abnormality of cells internal regulation. The growth and division of the cell are under uncontrollable proliferation in an autonomous fashion and thus leads to a progressive increase in the number of dividing cells [1-2]. They can invade into nearby tissues or to distant organs by a process termed as Metastasis [3-4].

Cancer occurs by a single cell in a tissue and is classified based on the type of cell that the tumor cells resemble and are therefore presumed to the origin of tumor [5]. Benign tumors differ from cancer in that it will be localized, self limited and doesn't metastasize. Many diseases such as heart failure may have a worse prognosis than most cases of cancer. Cancer is the subject of widespread fear and taboos around the globe. There are 200 different types of cancer that afflict humans [6]. The cancer cells are produced due to changes in DNA of the cells (Mutation) that are transformed [7]. Cancer is caused by internal factors and external factors [2, 8].

An extremely promising strategy for cancer prevention today is chemoprevention. It is defined as treatment of cancer in humans with the use of synthetic or natural agents (alone/combination) [9]. It is one of the most effective methods of cancer treatment. However, chemotherapeutic agents affect the normal cells severity. Hence the use of natural products has been contemplated of exceptional value in the control of cancer and its eradication program [4, 10]. Drug discovery from medicinal plants have been playing a crucial role in combating cancer over the last half century [11].

There are two main strategies for the selection of anti-cancer agents- random screening and ethno-medical knowledge. In the cancer drug discovery program, a paradigm between ethano-botanical and ethno-pharmacological data would be more economical. The benefit is being for identifying potential anti-cancer molecules than mass screening of plant species [12-13]. The main source of cancer chemoprevention drug discovery and development is the folk and traditional. The usage of a variety of plants, vegetables and herbs has more effects on the disease [10]. In Ayurveda, with the use of nutritional supplements or by use of herbs treatment for chemotherapy is well documented, that has been commonly practiced in India [14]. Plants have been regarded as a potential source of chemoprevention for cancer [15-16]. In recent years plant derived natural products such as flavonoids [17], terpenes [18] and alkaloids [19] have received massive attention due to their diverse medicinal properties including cytotoxic and cancer chemo preventive effects [20].

The literature assessment on the ethano-botanical information revealed that the Boraginaceae family consists of small trees or shrubs that have more medicinal value. These plants have been used to treat various disorders in traditional and folk medicine. Most of the species are yet to be evaluated. In India around 13 species of *Cordia* genus was brought into being. The plant *Cordia monoica* Roxb. belongs to Boraginaceae family. It is a much branched bush, shrub or tree with a height of 6-12m

International Journal of Advanced Research and Development
ISSN: 2455-4030
Impact Factor: RJIF 5.24
www.advancedjournal.com
Volume 3; Issue 1; January 2018; Page No. 41-47

A study on optimization of a new PGPR formulation towards the growth of Brinjal plants and soil fertility

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Abstract
In the present study a new PGPR formulation was optimized for the suitable carrier, pH and weather conditions towards the growth response of brinjal plants at 30 days and improving soil fertility. The effect of inoculation of different carrier based PGPR formulations on soil available plant nutrients, population size of PGPR and plant growth promotion of brinjal seedlings at 30 days in green house trial was significant at $p<0.05$. Good result was observed with Humus based PGPR; 578.24 ± 1.14 $KgNha^{-1}$, 648.26 ± 1.24 $KgKha^{-1}$, 38.34 ± 1.32 $KgPha^{-1}$, 15 ± 2 × 10^6cfu/g soil Nfb, 16 ± 3.61 × 10^6cfu/g soil Psb, 15.67 ± 2.08 × 10^6cfu/g soil Ksb, 26.38 ± 0.56 shoot length, 8.22 ± 0.60 root length and 6.20 ± 1.50 number of leaves. H-PGPR was found to be effective on soil available plant nutrients; 578.28 ± 1.14 $KgNha^{-1}$, 38.40 ± 1.28 $KgPha^{-1}$, 648.32 ± 1.20 $KgKha^{-1}$, population size of PGPR; 15.67 ± 2.08 Nfb, 16.67 ± 3.22 Psb, 16.33 ± 2.52 Ksb (10^6cfu/g soil) and plant growth promotion; 26.62 ± 0.85 shoot length, 8.24 ± 0.68 root length and 6.60 ± 0.55 number of leaves at pH 7.0. Significant result was observed with H-PGPR on summer season when compared to winter and rainy season ($p<0.05$).From this work, it is concluded that PGPR grows and works better in summer season at pH 7.0 and humus as the carrier.

Keywords: carrier, pH, PGPR, Humus, biofertilizer

1. Introduction
Biofertilizers plays an important role in developing an integrated nutrient management system, sustaining agricultural productivity with low environmental impact [1, 2, 16]. By using biofertilizers, it is possible to obtain a crop productivity similar to that obtained with other fertilizers but with a significant reduction of their use.
Generally PGPR may face competitive conditions once introduced into the soil that significantly reduce their plant growth promoting traits [4]. Therefore the efficiency of a specific biofertilizer may differ greatly under different agricultural soils [7]. To avoid such problems, the farmers should consider some factors such as soil pH, season, carrier substrate etc. before using biofertilizers for getting improved crop productivity.
Any type of PGPR formulation, able to maintain its biological activity at an adequate level uptoatleast one season is the main factor assuring its efficiency [5]. Therefore formulation of an inocula with a particular carrier in order to protect the cells during storage and transport and enhancing the persistence of the inocula in soil, plays an important role in determining the efficiency of biofertilizer [17, 24]. Different carriers exhibits specific positive effects and drawbacks, thereby affecting the overall quality of the biofertilizers [16, 10, 11]. Carrier based biofertilizer technology makes use of a large number of carriers including charcoal, wheat bran, peat, press mud, lignite, vermiculite etc. [9, 13]. But still researches are going on to explore cheap, easily available and efficient carrier for a biofertilizer to perform successfully.
Soil pH has been reported to be the most important predictor of microbial population structure at the ecosystem in which higher density associated with neutral soils [22]. It affects the colonization potential and efficiency of all the microorganisms included in biofertilizers.
This research was conducted to determine the suitable carrier substrate, pH and weather condition for the proposed PGPR formulation towards the growth response of brinjal plants.

2. Methodology
The PGPR formulation was made with N fixing, P and K solubilizing strains of bacteria (*Azotobacterchroococcum, Pseudomonas putida, Burkholderia cenocepacia* and *Pseudomonas fluorescence*). These strains were isolated from various agricultural fields in Kerala by dilution plate technique in selective media [8, 20, 12] and identified by 16srRNA Sequencing. The given PGPR formulation was optimized for the suitable carrier substrate, pH and weather conditions. The growth response of brinjal plants, soil available plant nutrients and soil microbial load were monitored at 30 days of treatment.

2.1. The carrier substrate
The PGPR Mix prepared in different carriers were tested for their efficiency in promoting brinjal plant growth. The carrier materials used were talc, humus and coir pith. This experiment was conducted in summer season (April 2015) at a pH between 6.5-7.0. Six treatments (control, reference strain, humus based PGPR Mix, talc based PGPR Mix, coir pith based PGPR Mix and chemical fertilizer) were made with 5 replications. Medium size grow bags were filled with garden

EFFECT OF SUPPLEMENTATION OF NUTRIENT RICH COOKIES FOR DEPRESSION IN PREMENSTRUAL SYNDROME

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ABSTRACT

Premenstrual symptoms (PMS), even though mild to moderate in intensity might have an adverse effect on the daily activity and work productivity. These symptoms result in the deterioration of interpersonal relationships, personal health and functional efficacy of the body. That may result in depression and other related mental disturbance also. Study area- Semi-urban area of Coimbatore; Population- Reproductive age women; sample size-100; Research design- A quasi experimental two group pretest-post test design; sampling technique-purposive sampling; Tools used- A structured questionnaire- for gathering general information; standard tool for depression. From the study it was noted that the supplementation of nutrient dense cookies was able to reduce the severity of depression that was prominent in the luteal phase of menstrual cycle or during Premenstrual Syndrome (PMS).

KEYWORDS: *Supplementation, Premenstrual, Interpersonal*

ORIGINAL RESEARCH PAPER

Management

A STUDY ON EMPLOYEES' JOB SATISFACTION AND ITS IMPACT ON THEIR PERFORMANCE

KEY WORDS: Deviance, Employee Performance, Satisfaction, turnover.

Dhanalakshmi S

ABSTRACT

Happy workers are productive workers and productive workers are likely to be happy. Employee job satisfaction is essential to face the dynamic and ever-increasing challenges of maintaining productivity of the organization by keeping their workforce constantly engaged and motivated. Furthermore, environmental pressures, rising health costs and various needs of the workforce also pose a challenge for the management. This could be overcome by creating a work environment that maintains employee job satisfaction as well as motivates people towards exceptional performance at the workplace achieving work-life balance. This paper outlines the broad contours of various variables responsible for employee satisfaction and various ways by which one can maximize employee satisfaction.

INTRODUCTION

Employee satisfaction refers to a collection of positive and/or negative feelings that an individual holds toward his or her job. Job Satisfaction is a part of life satisfaction. It is the amount of pleasure or contentment associated with a job. Job Satisfaction is an emotional response to a job. Job satisfaction is one of the most popular and widely researched topics in the field of organizational psychology (*Spector*, 1997). *Locke* (1976) defines job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences. Job satisfaction has been studied both as a consequence of many individual and work environment characteristics and as an antecedent to many outcomes. Employees who have higher job satisfaction are usually less absent, less likely to leave, more productive, more likely to display

organizational commitment, and more likely to be satisfied with their lives (*Lease*, 1998).

There are a variety of factors that can influence a person's level of job satisfaction. Some of these factors include the level of pay and benefits, the perceived fairness of the promotion system within a company, the quality of the working conditions, leadership and social relationships, the job itself (the variety of tasks involved, the interest and challenge the job generates, and the clarity of the job description/requirements). The happier people are within their job, the more satisfied they are said to be. The concept of job satisfaction has gained importance ever since the human relations approach has become popular. Job satisfaction involves complex number of variables, conditions, feelings and behavioral tendencies.

REVIEW OF LITERATURE

The study of job satisfaction is a topic of wide interest to both people who work in organizations and people who study them. Job satisfaction has been closely related with many organizational phenomena such as motivation, performance, leadership, attitude, conflict, moral etc. Researchers have attempted to identify the various components of job satisfaction, measure the relative importance of each component of job satisfaction and examine what effects these components have on employees' productivity.

The compensation is defined by American Association as *"cash and non-cash remuneration provided by the employer for services rendered"*. Salary was found to be the prime factor for the motivation and job satisfaction of salaried employees of the automobile industry in the results of the survey done by *Kathawala* et al. (1990). The survey tried to assess the various job characteristics and the way the employees ranked them as motivators and satisfiers.

The results showed that compensation was ranked as the number one job element for job satisfaction and increase in salary for performance was ranked as the number one job element for motivation. Compensation is very valuable tool for retention and turnover. It is also a motivator for an employee in commitment with the organization which in result enhances attraction and retention

The mentoring is used for development-orientation (*Scandura* and *Williams*, 2004). When a supervisor provides mentoring, the relationship affects the protégés skill development and intentions to remain with the employer (*McManus* and *Russell*, 1997). On the other hand non-supervisory mentor may increase mentee's confidence by providing access to outside organization (*Scanduraa* and *Williams*, 2004). The immediate supervisor support is very important in organizational change. Although the support of supervisor is not very crucial in satisfaction but it has positive impact on satisfaction (*Griffin, Patterson* and *West*, 2001). According to *Chakrabarty, Oubre,* and *Brown* (2008), *"perhaps the finest way in which supervisors can portray himself as a role model is to personally demonstrate proper techniques so that employee could understand how job should be done." J.D. Politis* (2001) has examined the roles played by leadership in the process of knowledge acquisition and a survey was carried out on 227 persons who were engaged in knowledge acquisition activities to examine the relationship between leadership styles and knowledge acquisition attributes. The results showed that the leadership styles that involve human interaction and encourage participative decision-making are related positively to the skills and essential knowledge acquisition.

Arnold and *Feldman*(1996), promoted factors such as temperature, lighting, ventilation, hygiene, noise, working hours, and resources as part of working conditions. The worker would rather desire working conditions that will result in greater physical comfort and convenience. The absence of such working conditions, amongst other things, can impact poorly on the worker's mental and physical well-being (*Baron* and *Greenberg*, 2003). *Arnold* and *Feldman* (1996) shows that factors such as temperature, lighting, ventilation, hygiene, noise, working hours, and resources are all part of working conditions. Employees may feel that poor working conditions will only prove negative performance, since their jobs are mentally and physically demanding.

Objectives of the Study

The objective of the study is as follows:

- To identify the factors which influence the job satisfaction of employees.
- To identify the impact of employees' job satisfaction on their performance.
- To identify the factors which improve the satisfaction level of employees.

Importance of Employee satisfaction for Various Stakeholders

1. *Importance of Employee Satisfaction for the Organization:*

- Enhance employee retention.
- Increase productivity.
- Increase customer satisfaction.

(14)

International Journal of Academic Research and Development
ISSN: 2455-4197
Impact Factor: RJIF 5.22
www.academicsjournal.com
Volume 3; Issue 2; March 2018; Page No. 995-999

A study on brand awareness towards selected ayurvedic healthcare products with special reference to palladam

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Abstract
Ayurveda is considered one of the world's oldest healing sciences, originating in India at least 5,000 years ago. Its name is a Sanskrit word that literally translates as "the wisdom of life" or "the knowledge of longevity" (it is a compound of ayus, meaning life or longevity, and veda, meaning deep knowledge or wisdom). In accordance with this definition, Ayurveda views health as much more than the absence of disease. Health, from an Ayurvedic perspective, is defined as a gracious, tranquil, content, joyous, bright, and clear state of the body, senses, mind, and spirit, including the balanced state of one's natural constitution, all bodily tissues, the digestive capacities, and waste excretion. The objective of the research work is to study about the customer's brand awareness towards selected ayurvedic healthcare products and customer's brand loyalty of selected Ayurvedic healthcare products. Tools used for the analysis are weighted average analysis, one way anova, simple percentage and spearman rank correlation. It is concluded that most of the respondents have high awareness about herbal ingredients factors and most of the respondents are not changed the preferred brand.

Keywords: ayurveda, customers, brand awareness, brand loyalty, healthcare products

1. Introduction

Ayurveda is one of the great gifts of the sages of ancient India to mankind. It is one of the oldest scientific medical systems in the world, with a long record of clinical experience. However, it is not only a system of medicine in the conventional sense of curing disease. It is also a way of life that teaches us how to maintain and protect health. It shows us both how to cure disease and how to promote longevity. Ayurveda treats man as a "whole" – which is a combination of body, mind and soul. Therefore it is a truly holistic and integral medical system.

The word "Ayu" means all aspects of life from birth to death. The word "Veda" means knowledge or learning. Hence Ayurveda indicates the science by which life in its totality is understood. It is a way of life that describes the diet, medicine and behavior that are beneficial or harmful for life. The roots of Ayurveda can be traced to the beginning of cosmic creation. Indian philosophers state that Ayurveda originated from Brahma, the creator of the universe. Brahma is not a mere individual but the unmanifest from the Divine Lord, from whom the whole manifest world comes into being. The desire to maintain fitness, health and longevity is one of the basic instincts of all creatures. Ayurveda in this respect sets the pattern for other system of medicine. It is a tradition with an antiquity comparable to that of life itself. The magico-religious aspect of medicine in the Vedas was gradually supplemented by observations based on scientific thinking. Ayurvedic scholars from subsequent generations gave a sound and logical footing of philosophy to Ayurveda. The material scattered in the Vedas was collected, subjected to rigid tests of efficacy and systematically arranged. Such compilations were called "Samhitas" Many of these compilations no longer exist. Only three authentic works have stood the test of time and are available today – the Charaka Samhita, Sushruta Samhita and Ashtanga Hridya Samhita. This great trio – the Brihatrayi as it called – has enjoyed much popularity and respect for the last two thousand years. Although these texts have undergone some modification by various authors in subsequent periods, their present form is at least 1200 years old. They are all in the Sanskrit language.

2. Statement of problem

The study deals with the brand awareness and brand loyalty of selected ayurvedic healthcare products in palladam taluk at Tirupur district. Many ayurvedic companies are available in the market so peoples have some confuses at the time of purchase the products. Which brand of ayurvedic product is good for health? The companies attract the prospective brand conscious customers by claiming quality and image and try to satisfy these customers by adopting various strategies in the market. Brand loyalty is one of the most important issues in the world of marketing and business due to the great importance that the brand subjected to the international business level in particular. Brand-loyal consumers may be willing to pay more for a brand. This strategy considered a more effective and efficient way than attracting a new

Journal Homepage: -www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
ISSN NO. 2320-5407
Article DOI: 10.21474/IJAR01/6757
DOI URL: http://dx.doi.org/10.21474/IJAR01/6757

RESEARCH ARTICLE

PERFORMANCE OF INDIAN POST OFFICE SAVING SCHEMES IN RECENT TRENDS.

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Manuscript Info

Manuscript History

Received: 16 January 2018
Final Accepted: 18 February 2018
Published: March 2018

Abstract

Introduction of Indian post office:-

Savingsshapes the important part of the economy of any nation. With the savings, in various options available to the people, the money acts as the driver for growth of the country. Indianfinancial prospect toopresents a plethora of avenues to the investors. Thoughcertainly not the best or deepest of markets in the world, it has reasonable options for an averageindividual to investhissavings. Investorsneeds to invest and earn return on theiridleresources and generate a specifiedsum of money for a specific goal in life and make a provision for an uncertain future. Investment culture among the people of a country is an essential prerequisite for capital formation and the fastergrowth of an economy. Investment culture refers to the attitudes, perceptions, and willingness of individuals, and institutions in placingtheirsavings in variousfinancialassets, more popularlyknown as investmentsor Postal Savings. A study on preferences and level of Satisfaction thus assumes a greatersignificance in the formulation of policies for the development and regulation of savings inGeneral and protection and promotion of small and house-holdinvestors in particular. This isbecause of lack of awarenessamong the small and householdinvestors, poorinvestmentclimate, and loss of confidence of existinginvestors in Postal Savings. It isextremely important for the policymakers and regulatoryauthorities to understand the investors' perceptions, preferences, and theirconcerns on the market. Small savings of India Post are a popularinvestment option for risk-averse investors. Post office investmentsprovideflexibility and eventaxbenefits. Post office has long served as the backbone of communication and smalldeposits. For than 150 years the department of posts has played a pivotalrole in facilitating communication throughout the nation there by aiding in socio- economicdevelopment of the country. Post officervaried services; theirworkis not justrestricted to delivering mails. Theyacceptdeposits, provideretail services like sale of forms, bill collection etc, providesavingschemes, life insurancecoveretc, with a network of more than1.5 lakh post offices across the country, India post offersvarious post office savingschemes. These are risk free investment options that are safe and secured and provideinvestorswith capital gains withouttaxdeductionat source (TDS). Variousinvestmentopportunities are available for an individual to hissaving and hecanchoose the appropriateinvestmentschemes, which suit hisneeds.

There are different types of opportunitiesprovided by manyfinancial institutions like commercial banks, co-operativebanks, post office savingbanks. Life insurance corporation public limitedcompany of all the

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ISSN (Print): 2320-5504
ISSN (Online): 2347-4793

APJR Asia Pacific Journal of Research
A peer reviewed international Journal
IMPACT FACTOR : 6.58
Print ISSN -2320 - 5504
Online-E-ISSN - 2347 - 4793
University Grants Commission
Approved Journal S.N.45797

POLICYHOLDER'S AWARENESS AND SATISFACTION LEVEL OF ICICI HEALTH INSURANCE COMPANY WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Health insurance is a safe guard against rising medical costs. Having a well-functioninginsurance system ensures pooling of resources to cover risks. Since the past two decades, there has been a phenomenal surge in acceleration of health care costs. This has made the individuals to re-pay their monthly expenditure, and allocate some amount of their income towards personal health care. Health insurance provides an opportunity to pool the risk among people. The objective of the study is to know the source of awareness onICICI health insurance policies and factor influencing the purchase decision of customer in purchasing health insurance policy and to state the level of satisfaction. The sample size of the study was conducted in Coimbatore city with 120 respondents through convenientrandom sampling method. The tools and techniques used were simple percentage and chi-square Method. Majority (44%) of the respondents takes individual health insurance policy and 61% of the respondents have purchased the policy through friends. The existing health insurance policies needed substantial reforms to make them more efficient and socially useful.

Keywords: Insurance, Health Insurance, Health Insurance Policies, ICICI Health Insurance

Introduction

Health insurance covers your medical expenses due to diseases and accidents. Health insurance is a contract between an individual/group and the insurer. The policy provides specific health cover for a particular premium. Growing demand for modern medical care, brought on by a rapidly, expanding population, rising literacy levels, and technological advancement lead to high expectation from the health services. This has shifted demand in favor of healthcare. According to the Health Insurance Association of America, health insurance is defined as "coverage that provides for the payments of benefits as a result of sickness or injury. People are always looking for security proves to be a vital force in the formation of family, tribe's community and groups. Groups always gave man a social security physical, mental and emotional.

Statement of Problem

Insurance sector as a whole has contributed to the development of economy through generation of employment opportunities. acceleration of industrial growth etc. although Heath Insurance Company has its own significance and place in the economy. Studying awareness level, satisfaction level of the policyholder's and problems of Health Insurance Company of Coimbatore with reference to various products offered by the company along with the plans and policyholders satisfaction will be of social relevance in the present context.

Objectives

- To examine the consumer awareness and preference of ICICI Health Insurance
- To study the satisfaction level of the Health Insurance Policies.
- To analyze the customers level of satisfaction towards the services rendered by the health insurance companies and the settlement of claims.

Scope of the study

- It details the competitive landscape in the Indian insurance industry along with the product innovation and customer targeting strategies followed.

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 6.887
Volume 6 Issue VII, July 2018. Available at www.ijraset.com

A Study on Investors Level of Satisfaction Towards Mutual Fund Investments with Special Reference to Trupur District

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***tract:** Mutual funds today are emerging as a very popular and safe financial market instrument for a large number of stors. Preference for a particular investments avenue/ financial instruments among the investors is determined by the level tisfaction they derive from such investments. This paper aimed to access the satisfaction level of mutual fund investors. The y was conducted in Tirupur District with a sample size of 50 respondents. The study found that most of the investors in pur district exhibit a high degree of satisfied with the return on mutual fund investments.*

***words:** Mutual funds, expectation, risk minimisation, level of satisfaction.*

I. INTRODUCTION

ual fund is a financial product designed for the retail investor who does not have an adequate knowledge on the financial market ations and financial market instruments. Financial experts have revealed that investors generally prefer to get maximum return heir investments with a minimum risk. Mutual funds pool money from various retail investors and the so collected money are ssionally managed by the fund managers who ensure a consistent return on investments and safety of the money invested by nvestors. Fund managers are experts in the financial markets and have a complete knowledge about financial market operations. ual fund investments minimises the risks attached to the financial market. Mutual funds provide a variety of opportunity for stors with a bundle of schemes to earn a maximum return on their investments with a minimum risk. Suitable fund selection is major threat that appears before the investors while making investments in mutual fund investments. A number of brokers and pendent Financial Advisors are ready to guide the investors to choose appropriate schemes suitable for their expectations and taking ability in Mutual funds. Fund selection of the investors depends on their perception and level of satisfaction with the able Mutual fund schemes. Selection of appropriate schemes, period of investments and type of risk associated with the ted scheme will also determine the investor's level of satisfaction. In this competitive financial market it is essential for an t Management Company to retain their investors by ensuring a higher level of satisfaction to them. Hence it is essential for the y makers and regulatory authorities to gain complete knowledge on the investor's perception, preference and their concerns in arket.

Statement of The Problem

ual funds today are emerging as a very popular and safe financial market instrument for a large number of retail investors. A ty of schemes are available in mutual fund investments to cater the needs and expectations of all type of investors. Investor's rence towards Mutual funds investments have increased subsequently in recent years because of the various reasons like: al funds are professionally managed and ensure a safety return on investments and principal amount. This study aims to study vel of satisfaction of investors towards mutual fund investments in Tirupur District.

bjectives of The Study

tudy aimed to analyse the level of satisfaction of the investors towards the Mutual funds investments in Tirupur District.

earch Methodology

search design. The research design of this study is descriptive in nature.

International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Index Copernicus Value (2016): 79.57 | Impact Factor (2017): 7.296

A Study on Liquidity Position of Public Sector Banks in India after Liberalisation

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Abstract: ***Introduction of reforms in the banking sector has changed the face of Indian banking industry. The globalization of operations and implementation of new technologies have led to increase in resource productivity, increasing level of deposits, credit and profitability. The objective of the study is to know the growth of the performance of Indian banks and to analyses the liquidity position of public sector banks after liberalization. In this study all the public sector banks were selected such as a19 Nationalised banks, 5 SBI Associates and SBI. We have chosen the liquidity ratios to analyse the liquidity position of the public sector banks. The statistical tools also used in this study such as standard deviation, co-efficient of variation, compound annual growth rate and two way ANOVA. Through this study we found that the overall liquidity position of Nationalized banks and SBI Associates are comparatively better than SBI.***

Keywords: Reforms, Liquidity, Public Sector Banks, SBI, SBI Associates, Nationalized Banks

1. Introduction

A sound financial system is a fundamental ingredient for a healthy and vibrant economy. An effective financial system is conducive to economic growth by mobilizing the savings and its deployment in different sectors of economy. The Indian financial sector constitutes an impressive network of banks and financial institutions and a wide range of financial instruments.

Banking is the major sector of economy that has achieved renewed focus after financial sector reforms and the entry of private sector banks. The bankingsector is the foundation of modern economic development and the backbone of development strategy. It forms the core of the financial sector of an economy. Through mobilization of resources and the better allocation, commercial banks play an important role in the development process of under developed countries. Commercial banks improve the allocation of resources by lending money to priority sector of economy. These banks provide a meeting ground for the savers and investors.

Nowadays, the Indian banking sector is fairly developed in terms of supply, product range and reach. But the ability to reach rural India still remains a challenge for the private sector and foreign banks. In terms of quality of assets and capital adequacy, Indian banks are considered to have clean, strong and transparent balance sheets relative to other banks in comparable economies in Asia. The reserve bank of India also mainly concerned with providing finance to weaker section of society, development of priority sector and providing credit under differential rate of interest scheme.

Before liberalization there was a monopoly of public sector banks (PSB's) after reforms in 1991, the entry of many foreign and private players have been permitted. Post liberalization demand PSB's to compete with well diversified and resource rich foreign banks and to provide fine funded services and unique products to suit customer need. PSB's have already sacrificed profits for achievement of social objectives. Due to cut throat competition and technology, the PSB'S are thinking to improve productivity and profitability which is essential to survive in a globalized economy.

The future of PSB's would be based on the capability to continuously build good quality assets in an increasingly competitive environment and maintaining capital adequacy and stringent prudential norms. Consolidation and competition may be key factors impacting the nationalized banks in future. Due to reforms, it has been felt that there is a need not only to increase in profits but also reduction in nonperforming assets (NPA's) of banks.

Reforms in the Banking Sector

Banking sector reforms were initiated to upgrade the operating standards, health and financial soundness of banks to internationally accepted levels in an increasingly globalize market. The Government of India setup the Narashimam committee (1991) to examine all aspects relating to structure, organization, and functioning of the Indian banking system. The recommendations of the committee aimed at creating a competitive and efficient banking system. Measures like capital adequacy, income recognition, asset classification, norms for investment, entry of private sector banks, gradual reduction of Statutory Liquidity Ratio (SLR) and Cash Reserve Ratio (CRR) were recommended and implemented to strengthen the banking system. These recommendations were changed the face of Indian banking. Public sector banks faced a stiff competition with the entry of private sector banks.

Another committee which deserves mention is the Khan committee, which was constituted by the RBI in December 1997 to examine the harmonization of the role and operations of banks. It submitted its report in April, 1998. The major recommendations of the committee were gradual move towards universal banking; exploring the possibility of gainful mergers as between the banks; banks and financial

International Journal of Management, IT & Engineering
Vol. 8 Issue 11, November 2018,
ISSN: 2249-0558 Impact Factor: 7.119
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gage as well as in Cabell's Directories of Publishing Opportunities, U.S.A

NATURE OF MARKETING PRACTICES ADHERED BY THE MUSHROOM CULTIVATORS SPECIAL REFERENCE TO THE NILGIRIS DISTRICT

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Abstract

Agricultural markets are special types of markets that have special characteristics that differ from other markets. These are mainly due to factors affecting supply of agricultural products, and the situation of producers in this business. The objective of the study is to identify the nature of marketing practices adhered by the mushroom cultivators. Primary data were used in the present study. Four hundred and fifty (450) sample households were selected. Cluster and snow-ball technique sampling were adopted. Weighted arithmetic mean, Likert's Summated scales and Percentage analysis were the statistical tools used. The study found that 98 per cent of the respondents target the middlemen for easy marketability of goods and 95.11 per cent of the mushroom cultivators prefer nearby towns for sales. The study suggests that farmers have to extend their target of sales by adopting various kinds of methods to fulfill their needs and farmers need to focus on factors such as better relationship with the buyers, availability of better channel partners, liquidity, prompt selling, less transport cost etc.

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(20)

FACTORS RESTRICT WOMEN FROM JOINING FITNESS CENTERS IN COIMBATORE CITY

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Abstract

"Health is wealth", one who has good health can enjoy the pleasures of life. It is achieved through proper nutrition, regular and appropriate exercise, adequate rest and relaxation. The study is conducted to assess the problems faced by women in joining physical fitness center. The study focused the problems like: lack of time due to heavy domestic work, Lack of motivation from family members, long distance to reach fitness center, equipment's of technically advance, unsuitable timing of health center that restricted them from joining fitness centers. Poor acquaintance to fitness center, lack of guidance training and feel of fatigue in the beginning are fitness center related issues that restrict women to voluntary registration into fitness centers.

Key words: Factors Restrict, women, joining fitness center

Introduction

Worldwide there is an increased concern about the quality of life and health. Increased stress at work, change in environmental conditions and a change in eating habits has led to a sedentary lifestyle and rise in lifestyle diseases. The highly stressful jobs of corporate world and multinational companies are giving rise to stress related ailments among the corporate and thus increasing the value and necessity of being fit and healthy in life. In modern times, people have realised the importance of physical activity and exercise in order to keep themselves fit and prevent from diseases, occurring due to modern life style. People are becoming more and more health conscious. More than any other time in times past, the people are trying to have the best for healthiest body possible. People are now very aware about their own body shape and figure, this allied to an

National Journal of Multidisciplinary Research and Development
ISSN: 2455-9040
Impact Factor: RJIF 5.22
www.nationaljournals.com
Volume 3; Issue 1; January 2018; Page No. 1200-1202

A developmental study on financial planning profiles of households in Vellore city of Tamil Nadu

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Abstract
Family financial management and control practices have received little attention. Yet they are increasingly important, due to changes in the financial environment such as deregulation of the banking industry and the increasing number of dual income families. This paper reports on the family's financial management and control tendencies.
This was a survey research with a two-fold purpose. One purpose was to investigate the financial management practices among selected households in Vellore City. The other purpose was to investigate how the socio-economic factors and financial management practices influence satisfaction with these practices.

Keywords: financial planning, household finance, Vellore city

Introduction
Nations, people, individuals and all institutions such as families at whatever level use available resources to raise their economic standards and improve their welfare. The family uses these available resources to sustain and maintain their status. There are two main types of resources 1) human resources 2) non-human resources. Examples of human resources include; interests, abilities and energies of household members, while those of non-human resources are; income, time, and other tangible resources like assets. These resources, must be managed well for sustenance and efficient use.
This is true at international, national and family level. Family income is that stream of money, goods services and satisfaction that come under the control of the family to be used by them to satisfy needs and desires and to discharge Obligations. Chief among the family's concern is the use of its major non-human resource namely money. Much thought and efforts are expanded in its size and source.
Establishment of financial goals early in life can improve the quality of life by making maximum use of one's income. A family has financial goals that it wants to achieve, either immediately or in the long term. Thus, it is important for the families to spend the available income so that the goals set may be achieved. Many people make personal financial decisions by chance, for example, saving plans are based on how much money is left over at the end of the month.
However, with lack of financial management, families are not likely to save, may be in debts and are likely to overspend in some areas than others. This may lead to a financial crisis that may result into bankruptcy, an indication of a family's inability to cope with problems of debt and the management of their finances.

Objectives of this study
1. Identify the social economic characteristics of the low, middle and high income households;
2. Determine the financial management practices of the low, middle and high income households in Vellore City;
3. Investigate the differences among the low, middle and high income households in their financial management practices;
4. Examine the relationship between socio-economic factors, financial management practices and satisfaction with these practices.

Statement of the problem
At times one wonders whether households really take trouble to systematically manage their families. Sometimes it is evident that some families attain goals faster than others, even when income and assets are kept constant. Such an observation means that there is something more than just availability of income that helps some families attain goals. It is thus crucial to establish such financial management practices that help to achieve their goals.
Probably a big percentage of families could improve their financial status by planning their finances better.
The present research is therefore a situational study to determine whether families plan for their finances. For those who plan, the researcher explored methods used to manage and how these could be improved. An effort was also made to establish whether families are satisfied with their financial situation and if so, whether financial planning positively influences financial satisfaction. For those who do not plan, recommendations about how they could be helped were given.

Purpose of the study
The purpose of this study is therefore, to determine financial management practices among households in some selected areas of Vellore City. The study will also investigate how the socio-economic factors and financial management practices influence satisfaction with these practices.

International Journal for Research in Engineering Application & Management (IJREAM)
ISSN : 2454-9150 Vol-05 Issue-08 NOV 2019

Financial Planning & Practices Among Households in Vellore District

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Abstract - Personal Financial Planning is the most important service area now-a-days while planning finances of any households. All the other matters are secondary to the money matter. Finance helps in the smooth movement of all the aspects of life. Personal finance refers to the financial management of which an individual or a family unit is required to make, to obtain, budget, save, and spend monetary resources over time, taking into account various financial risks and future life events. In short, financial planning is the process of systematically planning ones finances towards achieving his/ her short-term and long-term life goals. Financial planning is about helping individuals and families, regardless of age and financial circumstances envision and realize their dreams and goals by marshaling and managing their financial resources. The purpose of financial planning needs to be understood. It is like taking a road trip by car. Many financial experts argue that globalization results in consumerism, which turned reduces saving rate, is not proved by empirical evidence. The declining trend of public sector saving is attributable to the negative saving of government administration. It has also been observed that the growth of income is not a very effective instrument to influence the savings rate. In India, as in many developing countries, most households are poor and do not save. The reasons for the poor saving are the lack of adequate financial literacy, which in due course influences their ineffective financial management, practices this discussion, draws rational significance and also aims to analyse the financial planning and practices among households in Vellore district in Tamil Nadu.

Keywords — Finance, Financial Planning, Practices, Experts, Households, Vellore etc.

I. Introduction

Financial planning is about helping individuals and families, regardless of age and financial circumstances envision and realize their dreams and goals by marshaling and managing their financial resources. The purpose of financial planning needs to be understood. The destinations might include buying a home, starting a family, building an emergency fund, funding children's coll[illegible] education or a wedding, starting own business, taking care of elderly parents, carving out more leisure time for themself, changing careers or taking an exotic vacation or retiring comfortably. Before embarking on road trip of life, one needs to assemble available resources such as sources of income, anticipated trip expenses, current financial assets and liabilities, insurance, and who is going on the trip (spouse, children and parents).

Financial planning will show the best route to achieve individual's financial goal. Also, financial planning will show how soon one can reach the destinations based on the financial resources available. Financial planning can help make the most of rupees through smart tax planning, sound budgeting and wise spending. Financial planning also provides resources for a cash emergency fund, the right amounts for disability, life insurance, medical, and like. Finally, financial planning is a lifetime process, flexible and strong enough to accommodate the inevitable changes that occur along the road of life. So as to have a sound personal financial planning, different constituent factors must be found out.

Generally, it is observed that the family life-cycle stage has been recognized as a key variable associated with saving and consumption. The life-cycle theory of consumption suggests that consumption plans are made so as to achieve a smooth or even level of consumption over the lifetime by saving during periods of high income and dissaving during periods of low income.

The life-cycle theory of saving predicts that people save a lot when their income is high relative to lifetime average income and disserve when their income is low relative to the lifetime average; the middle-aged save for retirement and the old disserve. The saving and investment trend of individual households got reversed due to high real interest rates, prolonged subdued conditions in the secondary market, lack of confidence and absence of a dependable infrastructure and distribution network.

International Journal of Pure and Applied Mathematics
Volume 118 No. 18 2018, 2867-2873
ISSN: 1311-8080 (printed version); ISSN: 1314-3395 (on-line version)
url: http://www.ijpam.eu
Special Issue

ijpam.eu

Study of Breast Cancer Detection Methods using Image Processing with Data Mining Techniques

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***Abstract*— Breast cancer disturbs one in eight women. It is absolutely dreadful and a life threatening disease. The causal agent of breast cancer is still under research. But there are some jeopardy factors such as age, gene, obesity, taking birth control pills and smoking. Normally breast cancer is a malignant tumour that initiates in the cells of the breast and eventually it extents to the surrounding tissues. The disease can be preserved if it is detected early. As stages increase, the chance of preserving decreases. There are numerous imaging techniques that play a vital role in detecting breast cancer. This research study analyses various breast cancer detection techniques based on image processing techniques, data mining methods, various features used and a brief comparative study of the existing breast cancer detection system.**

Keywords*—Breast Cancer, Data Mining, Image Processing , Feature extraction.

I. Introduction

Breast cancer flinches in the breast cells of both women and men. Worldwide, breast cancer is the second most common type of cancer after lung cancer and the fifth most common cause of cancer death. The National Breast Cancer Foundation has valued around 200000 new breast cancer cases and 40000 deaths every year in women. In men, these statistics are 1700 and 450, correspondingly [4]. According to the National Cancer Institute, an assessed 207090 new cases and 39840 deaths from breast cancer (only women) are expected to occur in the United States, notwithstanding recent advances in treatment. Given such conditions, early diagnosis of breast cancer is considered vigorous, because statistics have shown a five-year survival rate of 96% for those whose cancer was discovered in the early stages.

Breast cancer is highly major in today's world. Cancer initiates in cells and spread to other parts of the human being. The growth of additional cells develops a bulk of tissue named as lump. So, early discovery for cancer is more important. Mammography is a preliminary screening test to detect breast cancer [5]. The first major pointer of the malignant cancer is identified as masses. Masses are determined by the spaces recognized by lesions which can be pointed out by their structural formation and marginal property. The second pointer of calcification contains calcium sediments in the breast tissue. These are seen as small bright spots in mammogram descriptions. To classify cancer as benign or malign, the morphological dimension and features are to be evaluated. The third most common pointers of breast cancer are architectural distortions. They are accepted with the abnormal architecture.

Medical investigation on breast cancer is not original but absence of proper methods for early recognition is still a challenge [6]. With advancement in improving field, the

International Journal of Pure and Applied Mathematics
Volume 119 No. 18 2018, 3863-3874
ISSN: 1314-3395 (on-line version)
url: http://www.acadpubl.eu/hub/
Special Issue

http://www.acadpubl.eu/hub/

COMPARISON OF NOISE REMOVAL FILTERS FOR BREAST CANCER DETECTION IN MAMMOGRAM IMAGES

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Abstract- Breast Cancer is a common disease in today's world. An analysis and investigation of suitable image processing techniques for breast cancer detection in mammogram images are proposed in this paper. Preprocessing step is the first step in order to remove the noises in breast cancer. Using different types of filters in this paper, it is possible to detect the various noises and can find out which filter method is best for removing noise in mamogram images. Mammogram images are tested from three different categories such as normal, benign and malignant. The results are compared with three image quality metrics and are tabulated.

Keywords- *Breast Cancer, Image processing techniques, Mammogram Images, Types of Noises, Types of Filters*

1. INTRODUCTION

Breast cancer has become one of the commonly occurring forms of cancer in women, particularly in developing countries.It accounts for about 25% to 33% of all type of cancers in women of urban India [1]. Early identification of breast cancer would result in timely analysis of the disease thus providing better chances of survival.To find out the orientation of the mammogram and denoising to enhance the quality of images pre-processing techniques play a vital role [3]. Before any image-processing algorithm can be applied on mammogram images it is important to carry out preprocessing steps which frontier explore for deviations devoid of extreme persuade from background of the mammogram. It is difficult to interpret digital mammograms which are medical images that a preparation phase is required

IMPACT: International Journal of Research in Humanities, Arts and Literature (IMPACT: IJRHAL)
ISSN (P): 2347-4564; ISSN (E): 2321-8878
Vol. 6, Issue 11, Nov 2018, 291-297

Impact Journals

ROLE OF DISTRICT INDUSTRIES CENTRE (DIC) IN FACILITATING MSMEs FOR AVAILING BANK LOANS IN VELLORE DISTRICT

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Received: 14 Oct 2018 **Accepted:** 27 Oct 2018 **Published:** 15 Nov 2018

ABSTRACT

Number of MSMEs in India is increasing at a rapid pace. MSMEs contribute significantly to the generation of employment and GDP of our economy. District Industries Centre (DIC) all over India play a vital role in assisting new entrepreneurs to start enterprise in the MSME sector. Therefore, it is crucial to study the role of DIC in facilitating MSMEs especially in the process of availing bank loans by MSMEs. This paper aims to determine the demographic aspects of the MSMEs and their borrowing practice and to measure the perception of MSMEs on role of DIC's support service in Vellore District. Findings depict that married male graduates are the likely persons to avail bank loans through DIC's support. Chi-square analysis revealed that there is no significant association between gender and type of organization. Respondents are highly satisfied with regard to simple procedural formalities adhered by DIC. Few suggestions are given for enhancing the functioning of DIC based on the findings of this paper.

Key Words: MSME, District Industrial Centre, SSI, DIC.

INTRODUCTION

Micro, Small and Medium Enterprises (MSMEs) in India have been d eveloping significantly since independence. During 1960s and 70s, these are referred to as the Small Scale Industries (SSIs) sector. Later,the MSME sector has evolved as considerable development in the level of scale and in the range of business activities over the years. In the recent years, many sectors are included in the MSMEs sector such as manufacturing, trade and services in India, thereby constituting a crucial component of the country's tremendous economic growth.[1] the industrial Policy 1977 had the concept of District Industries Centres (DICs) which was initiated on 1st May 1978 as a centrally sponsored scheme. The primary objective of DIC is to create plenty ofruralemployment opportunities. It was intended to become a premier location for granting financial and other facilities to MSMEs, developing close links with development blocks and specialized institutions providing help to start-ups in rural areas, to determine and help new entrepreneurs' activities of DICs. Its major activities include; registration of SSI units, registration of Handicrafts/Cottage industries, implementation of Prime Minister's RozgarYojana, granting of subsidies to SSI units, distribution of project profiles among entrepreneurs, training for entrepreneur development programme, organisation of industrial cooperative societies. raw material assistance through SIDCO, allotment of sheds in electrical & electronic industrial estates, marketing assistance through SIDCO, conducting motivation campaigns, clearance of licenses etc. through single window meeting, rehabilitation of sick SSI units, recommendation of awards to SSI units, recommendation of loan applications to banks under KVIC scheme.[2]

International Journal for Research in Engineering Application & Management (IJREAM)
ISSN : 2454-9150 Vol-05 Issue-08 NOV 2019

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Optics and Laser Technology 105 (2018) 281–289

Contents lists available at ScienceDirect

Optics and Laser Technology

journal homepage: www.elsevier.com/locate/optlastec

Full length article

Spectroscopic and quantum chemical perspectives on 2-amino 5-methylpyridinium 4-nitrobenzoate – An organic single crystals for optoelectronics device applications

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ARTICLE INFO

Article history:
Received 13 June 2017
Received in revised form 19 January 2018
Accepted 21 January 2018

Keywords:
Solution growth
Nonlinear optics
Dielectric
DFT calculations

ABSTRACT

In this work, an optical quality single crystals of 2-amino 5-methylpyridinium 4-nitrobenzoate (2A5MPNB) were grown by slow evaporation solution growth technique using methanol as a solvent. The phases and functional groups of 2A5MPNB have been confirmed through powder X-ray diffraction and Fourier transform infrared (FTIR) studies, respectively. The optical transmittance window and the lower cut-off wavelength of the 2A5MPNB have been identified by UV–Vis–NIR studies. Dielectric and photoconductivity studies were also performed for the grown crystals. In order to analyze the mechanical strength Vickers hardness studies were taken for the grown crystal. The thermal behaviour was investigated by TG/DTA studies. NLO and laser damage properties were explored using Nd:YAG laser. Moreover, the quantum chemical calculations on 2A5MPNB have been performed by density functional theory (DFT) calculations using the B3LYP method with 6–311++G(d,p) basis set. The predicted first hyperpolarizability is found to be 14.45 times greater than that of urea and suggests that the title compound could be an attractive material for nonlinear optical applications.

1. Introduction

In this modern era, organic nonlinear optical (NLO) materials have acquired importance with the rapid development in the field of optoelectronics and advent of a large number of devices utilizing solid state laser sources. Since the advent of the laser in the 1960s, the application of nonlinear optics in optoelectronic and photonic devices grasped the attention of nonlinear optical materials. Especially, organic nonlinear optical materials exhibiting second harmonic generation are in great demand, due to their applications in optical switching, optical limiting, two-photon laser scanning microscopy, eye and sensor protection, optical signal reshaping and stabilizing fast fluctuations of laser power [1–6]. In recent years, the demand for optically active organic crystals has increased due to useful applications in the field of terahertz wave generation, photonics and electro-optics. The electronic susceptibilities of organic NLO materials are several orders of magnitude higher than those of inorganic materials. Furthermore, organic materials demonstrate the flexibility of molecular design and ease of device fabrication [7]. Polar and chiral organic molecules with π-electron conjugated moieties substituted by an electron donor group on one end of the conjugated structure and an electron acceptor group on the other end have increased asymmetric electronic distribution in both the ground and excited states; thus, their second order polarizability is increased. Hence, these molecules are expected to be leading candidates for fundamental and applied investigations.

Pyridine and acid (base-acid) are one of the promising pairs to form non-centrosymmetric crystalline arrangement and also they exhibit high NLO efficiency. Previously many efficient pyridinium-acid based crystals were grown and their properties were reported [8–11]. In this direction, Madhukar Hemamalini and Hoong-Kun Fun have reported [12] the crystal structure of 2-amino 5-methylpyridinium 4-nitrobenzoate. As this molecule crystallizes with the non-centrosymmetric crystal structure, we focused our interest towards the systematic studies on 2A5MPNB and the results obtained are discussed in detail. The studies here are reported for the first time in literature, to the best of our knowledge.

The present work is aimed to report the growth, structural, optical, electrical, mechanical, laser damage, powder SHG and phase matching studies of 2A5MPNB. Furthermore, quantum chemical calculations such as frontier molecular orbitals and hyperpolarizability have been calculated for the 2A5MPNB crystal.

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https://doi.org/10.1016/j.optlastec.2018.01.053
0030-3992/

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1st February 2019

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This is to Certify that Dr./ Mr./ Mrs./ Ms. KALYANI. M , RESEARCH SCHOLAR from GOVT. ARTS COLLEGE, COIMBATORE has presented / delivered a paper (Oral / Poster) / an invited talk / chaired a session / participated entitled PREPARATION AND CHARACTERIZATION OF $NiMnCo_3O_4$ THIN FILM FOR HIGH PERFORMANCE SUPERCAPACITOR ELECTRODE in the **National Seminar on Current Innovations & Future Perspectives in Nanoscience and Technology (NSNST - 2019)** organized by Department of Physics, Chikkanna Goverment Arts College, Tiruppur 641 602, Tamilnadu, India on February 01, 2019.

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Title of the Research paper : PREPARATION OF $FeCo_2O_4$ THIN FILMS ELECTRODES FOR SUPERCAPACITORS APPLICATIONS

Mode of Presentation : **Oral / Poster**

Dr. A. Kingson Solomon Jeevaraj
Organizing Secretary, NCN-2019

Mrs. J. Jayachitra
HOD of Physics

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ISSN No. : 2321-9653

IJRASET

International Journal for Research in Applied Science & Engineering Technology

IJRASET is indexed with Crossref for DOI-DOI : 10.22214

Website : www.ijraset.com, E-mail : ijraset@gmail.com

ISRA Journal Impact Factor : 5.947

45.98 INDEX COPERNICUS

THOMSON REUTERS Researcher ID: N-9681-2016

doi 10.22214/IJRASET crossref

TOGETHER WE REACH THE GOAL IMPACT FACTOR : 7.177

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It is here by certified that the paper ID : IJRASET21042, entitled

Electrochemical Performance of Mn Doped Co3O4 Thin Film Electrodes by Electrodeposition Method

by

Kalyani. M

after review is found suitable and has been published in Volume 7, Issue IV, April 2019

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Good luck for your future endeavors

By

Editor in Chief, IJRASET

TANSCHE Sponsored

National Conference on Modern Innovations and Perspectives on Emerging Interfaces in Physical Sciences and Technology (NCPST - 2020)

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Participated / Presented a Paper ELECTROCHEMICAL PROPERTIES OF CARBON COATED α-$NaFeO_2$

in the International Conference Organized by PG & Research Department of Physics and Chemistry, Morappur Kongu College of Arts and Science held on 21st January 2020.

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INDIAN HISTORY CONGRESS

80th Session
Kannur University, Kerala
28th-30th December, 2019

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This is to certify that **M. Jayachitra, AM-27836**, attended the Eightieth Session of the Indian History Congress at Kannur University, Kerala, 28th-30th December 2019, and presented a paper entitled '**Nilgiri under Hyder Ali and Tipu Sultan**' in Section III: Modern India.

Professor M.D. David
Sectional President
Indian History Congress

28th December 2019

Professor Mahalakshmi Ramakrishnan
Secretary
Indian History Congress

The Department of History

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One Day National Seminar

in Collaboration with

PANDIYANADU CULTURAL FOUNDATION, Madurai.

(Reg. No: 12/2015)

on

THE GLIMPSES OF ARCHAEOLOGY IN THE HISTORY OF TAMILNADU

CERTIFICATE

to

M. JAYACHITRA, Guest Lecturer in History For ~~his~~ / her participation / presenting a paper on Adittanallur - The Mohenjadaro of South India -

in the One Day National Seminar on **THE GLIMPSES OF ARCHAEOLOGY IN THE HISTORY OF TAMILNADU** organized by Department of History L.R.G. GOVERNMENT ARTS COLLEGE FOR WOMEN in collaboration with PANDIYANADU CULTURAL FOUNDATION on 24.01.2020.

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INDIAN HISTORY CONGRESS

80th Session
Kannur University, Kerala
28th-30th December, 2019

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This is to certify that **S. Maheswari, AM-27839**, attended the Eightieth Session of the Indian History Congress at Kannur University, Kerala, 28th-30th December 2019 and presented a paper entitled '**History of the Avinashi Lingeswarar Temple**' in Section II: Medieval India.

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(Reg. No: 12/2015)

on

THE GLIMPSES OF ARCHAEOLOGY IN THE HISTORY OF TAMILNADU

CERTIFICATE

to

S. MAHESHWARI, Guest Lecturer in History For his / her participation / presenting a paper on The Indus Valley Civilization And the Ancient Tamil Civilization

in the One Day National Seminar on **THE GLIMPSES OF ARCHAEOLOGY IN THE HISTORY OF TAMILNADU** organized by Department of History L.R.G. GOVERNMENT ARTS COLLEGE FOR WOMEN in collaboration with PANDIYANADU CULTURAL FOUNDATION on 24.01.2020.

RL

Co - ordinator

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Head of the Department

UNIVERSITY OF CALICUT

38th SOUTH INDIAN HISTORY CONGRESS

THIRTY EIGHTH ANNUAL SESSION

28, 29, 30 January 2018

Department of History, University of Calicut, Kerala

This is to certify that **Mrs. B. PUNITHAVATHI, RESEARCH SCHOLAR,NIRMALA COLLEGE FOR WOMEN, COIMBATORE** has attended the **38th South Indian History Congress** organised by the Department of History, University of Calicut, Kerala on 28,29,30 January 2018. It is also certified that he has presented the paper titled **GROWTH OF TOURISM IN THE WESTERN GHATS** in the conference.

Dr. K.Mohammed Basheer
Vice Chancellor

Prof. (Dr.) Sivadasan, P
General Secretary, S.I.H.C.

INDIAN HISTORY CONGRESS

80th Session
Kannur University, Kerala
28th-30th December, 2019

Certificate of Presentation of Paper

This is to certify that **R. Kaleeswari,** attended the Eightieth Session of the Indian History Congress at Kannur University, Kerala, 28th-30th December 2019, and presented a paper entitled '**Writing Environmental History of India**' in Section III: Modern India.

Professor M.D. David
Sectional President
Indian History Congress

28th December 2019

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Proceedings of the

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ICCM 2021

11th January 2021

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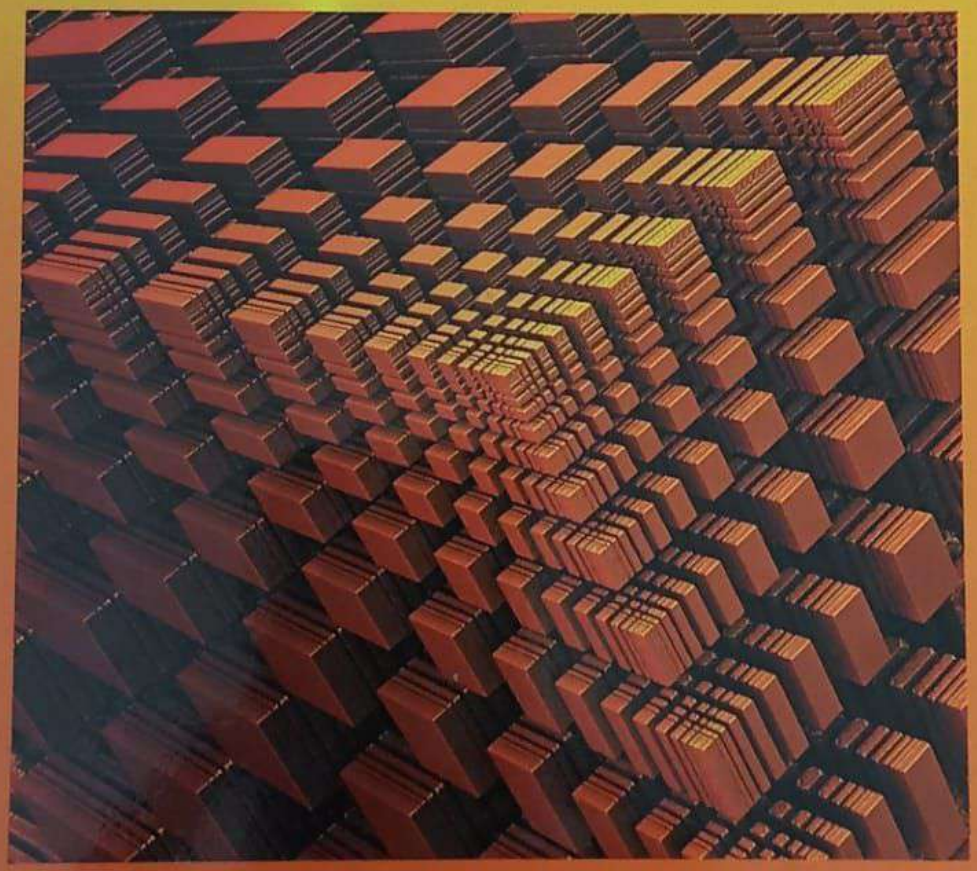

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Rathinam Techzone, Pollachi Road, Eachanari
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LIST OF PAPERS

On Nano pgrβ – Neighbourhoods in Nano Topological Spaces

S. Jayalakshmi[1] and A.Manonmani[2]

[1,2]Department of Mathematics, L.R.G. Government Arts College for Women, Tirupur 4, Tamilnadu, India.
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***Abstract*—**The purpose of this paper is to define and analyse the properties of Nano pgrβ- neighbourhoods, Nano pgrβ -interior, Nano pgrβ -frontier, Nano pgrβ -exterior, and to obtain the relation between some of the existing sets in Nano topological spaces.

***Keywords*—**Nano pgrβ -Interior, Nano pgrβ -Closure, Nano pgrβ -Neighbourhoods, Nano pgrβ -Frontier, Nano pgrβ –Exterior.

I. INTRODUCTION

IN 1970, Levine [1] introduced the concept of generalized closed sets in topological spaces. In 2013, Lellis Thivagar and Richard [2] established the notion of Nano topology in terms of approximations and boundary region of a subset of an universe using an equivalence relation on it and also defined Nano closed sets, Nano-interior and Nano-closure of a set and the weak form of Nano open sets namely Nano-α-open sets, Nano semi-open sets and Nano pre-open sets in Nano topological spaces. Revathy and Gnanambal Illango [7] made known about the nano β-open sets in Nano topological spaces. Recently A. Manonmani and S. Jayalakshmi [3][4] have introduced and studied about rβ-closed sets, pgrβ-closed sets, pgrβ- continuous functions and pgrβ-irresolute functions. Sathishmohan et al.[8] [9] gave the idea about Nano neighourhoods in Nano topological spaces. This motivates us to introduce and study the properties of Nano pgrβ-closed sets in Nano topological spaces.

II. PRELIMINARIES

Definition 2.1. [5] Let $\dot{U} \neq \emptyset$ be a finite set of objects called the universe and $\mathcal{R}$ be an equivalence relation on $\dot{U}$ named as indiscernibility relation. Then $\dot{U}$ is divided into disjoint equivalence classes. Elements belonging to the same equivalence class are said to be indiscernible with one another. The pair $(\dot{U}, \mathcal{R})$ is said to be the approximation space.

Let $P \subseteq \dot{U}$. Then,

(i) The lower approximation $L_{\mathcal{R}}(P)$ with respect to $\mathcal{R}$ is defined as

$L_{\mathcal{R}}(P) = \bigcup_{x \in P}\{\mathcal{R}(x): \mathcal{R}(x) \subseteq P\}$ where $\mathcal{R}(x)$ is the equivalence class of $x \in \dot{U}$,

(ii) The upper approximation $U_{\mathcal{R}}(P)$ with respect to $\mathcal{R}$ is defined as

$U_{\mathcal{R}}(P) = \bigcup_{x \in P}\{\mathcal{R}(x): \mathcal{R}(x) \cap P \neq \emptyset\}$ where $\mathcal{R}(x)$ is the equivalence class of $x \in \dot{U}$,

(iii) The boundary region $B_{\mathcal{R}}(P)$ with respect to $\mathcal{R}$ is defined as

$$B_{\mathcal{R}}(P) = U_{\mathcal{R}}(P) - L_{\mathcal{R}}(P)$$

Definition 2.2. [6] Consider the approximation space $(\dot{U}, \mathcal{R})$ where $\dot{U}$ is the universe and $\mathcal{R}$ is the equivalence relation on $\dot{U}$. Let $\tau_{\mathcal{R}}(P) = \{\dot{U}, \emptyset, L_{\mathcal{R}}(P), U_{\mathcal{R}}(P), B_{\mathcal{R}}(P)\}$ where $P \subseteq \dot{U}$. If $\tau_{\mathcal{R}}(P)$ satisfies the following axioms

(i) Both $\dot{U}$ and $\emptyset \in \tau_{\mathcal{R}}(P)$,

(ii) The union of the elements of any sub collection of $\tau_{\mathcal{R}}(P)$ is in $\tau_{\mathcal{R}}(P)$,

(iii) The intersection of the elements of any finite sub collection of $\tau_{\mathcal{R}}(P)$ is in $\tau_{\mathcal{R}}(P)$, then $\tau_{\mathcal{R}}(P)$ is a topology on $\dot{U}$ with respect to P called as the Nano topology on U with respect to P. The pair $(\dot{U}, \tau_{\mathcal{R}}(P))$ is called as Nano topological space. The elements of $\tau_{\mathcal{R}}(P)$ are called as Nano open sets in $(\dot{U}, \tau_{\mathcal{R}}(P))$. The complement of the Nano open sets are called Nano closed sets in $(\dot{U}, \tau_{\mathcal{R}}(P))$.

Definition 2.3. [2] Let $(\dot{U}, \tau_{\mathcal{R}}(P))$ is a Nano topological space with respect to P where $P \subseteq \dot{U}$. If $A \subseteq \dot{U}$, then

(i) The Nano interior of A is defined as the union of all Nano open subsets of A and is denoted by $\aleph\text{Int}(A)$. That is, $\aleph\text{Int}(A)$ is the largest Nano-open subset of A.

(ii) The Nano closure of A is defined as the intersection of all Nano-closed sets containing A and is denoted by $\aleph\text{cl}(A)$. That is, $\aleph\text{cl}(A)$ is the smallest Nano-closed set containing A.

Definition 2.4. Let $(\dot{U}, \tau_{\mathcal{R}}(P))$ is a Nano topological space with respect to P where $P \subseteq \dot{U}$. If $A \subseteq \dot{U}$, then A is said to be

(i) Nano semi-open [2] if $A \subseteq \aleph\text{cl}(\aleph\text{Int}(A))$

(ii) Nano pre-open [2] if $A \subseteq \aleph\text{Int}(\aleph\text{clt}(A))$

(iii) Nano semi pre-open [7] (or $\aleph\beta$-open if $A \subseteq \aleph\text{cl}(\aleph\text{Int}(\aleph\text{cl}A))$)

ISBN 978-93-89105-57-5 © 2021 Published by Coimbatore Institute of Information Technology

A Note on Continuous functions in Topological Spaces

ICCSPAM2021
TOP-10

R. Vijayalakshmi[1] and V. Thiripurasundari[2]
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ABSTRACT

Recently we introduced $\hat{g}\pi$ -closed set in topological spaces. The aim of this paper is to introduce a new class of continuous function called $\hat{g}\pi$ continuous function in topological spaces and also discussed their basic properties.

Min-Max pgrβ-continuous and Max-Min pgrβ-continuous functions in Topological spaces

ICCSPAM2021
TOP-11

S. Jayalakshmi and A. Manonmani
Department of Mathematics, L.R.G. Government Arts college for women,
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ABSTRACT

In this paper we introduce a new class of minimal pgrβ-closed sets, maximal pgrβ-open sets, minimal pgrβ-open sets and maximal pgrβ-closed set in a topological space. Also, minimal pgrβ-continuous function, maximal pgrβ-continuous function, minimal pgrβ-irresolute function, maximal pgrβ-irresolute function, Min-Max pgrβ-continuous functions and Max-Min pgrβ-continuous functions in Topological spaces and some of their basic properties are studied.