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2D/2D nitrogen-rich graphitic carbon nitride coupled Bi_2WO_6 S-scheme heterojunction for boosting photodegradation of tetracycline: Influencing factors, intermediates, and insights into the mechanism

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A MATHEMATICAL ANALYSIS OF A CHEMICAL REACTION ON A MHD MICROPOLAR FLUID FLOW

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Abstract:

The goal of this research is to investigate the micropolar fluid behaviour of a steady MHD heat and mass transfer flow over a stretched surface under Newtonian heating (NH), constant wall temperature (CWT), and constant heat flux (CHF) boundary conditions. This paper looked at heat generation and absorption as well as destructive and generative chemical reactions. The controlling nonlinear partial differential equations are turned into dimensionless ordinary coupled nonlinear differential equations using the similarity technique. The modified Homotopy analysis method is adapted to solve the dimensionless equations analytically.

Keywords:

MHD channel flow, micropolar fluid flow, dimensionless velocity profile, micro rotation profile, temperature profile, concentration profile, modified Homotopy analysis method.

1. Introduction

In the last decade, researchers have discovered that the flow across a stretched surface has a significant impact on the flow and heat transfer characteristics of a micropolar fluid. Because of its numerous applications in countless engineering and geophysical domains, convection heat transfer in fluid flow is a phenomenon of enormous interest from both a theoretical and practical standpoint. Over the last few decades, combined free and induced convection over a stretching surface has been extensively researched from both a theoretical and experimental standpoint.

The impact of a magnetic field on free convection heat transport on a vertical plate was studied by [2]. [3] investigated natural convection flow of an electrically conducting fluid across a vertical plate. [4] to [9] have investigated the flow and heat transfer characteristics of a stretching sheet in the presence of a uniform magnetic field. The flow in the experiments above was totally generated by a stretching sheet saturated in a quiescent fluid. [10] investigated boundary layer

A mathematical study of a MHD asymmetric flow between two parallel porous disks using Homotopy analysis method

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Abstract

The non-linear differential equations governing the MHD asymmetric flow of a conducting fluid between two porous disk has been solved using Homotopy analysis method. Semi-Analytical expression for velocity profile are obtained. The result are discussed graphically for varying the governing parameters.

Keywords:
MHD channel flow, porous disk, asymmetric flow, dimensionless velocity profile, Homotopy analysis method.

1. Introduction

In the recent days, the study of the (Magnetohydrodynamic) MHD flow of a conducting fluid between two porous disks grasped the attention of scientists and engineers for its vital role in the applications in various branches of industries and engineering such as MHD generators, MHD pumps, accelerators, electrostatic precipitation, polymer technology, Petroleum industries, purification of crude oil, plasma studies, nuclear reactors, geothermal energy extraction, the boundary control in the field of aerodynamics and blood flow problems. Based on the applications, a variety of mathematical models have been formulated to study the behaviour of the flow. The MHD flow of a second grade fluid through a porous medium was studied by [2] and [3]. The radiation effects of Maxwell fluid in a channel with porous medium was later discussed by [4]. Heat transfer effect of a laminar flow through parallel porous disk was examined by [5]. Heat generation / absorption on hydromagnetic flow with heat and mass transfer over a flat surface was investigated by [6]. Many studies on the hydromagnetic flow of a conducting fluid in the presence of magnetic field through the porous medium was made successfully by [7]-[14]. A fourth-grade fluid flow was illustrated by [15].

Considering various aspects of the problem, [1] deals with the study of the (Magnetohydrodynamic) MHD flow of a conducting fluid between two porous disks . [1] performed the illustration and obtained governing differential equation for velocity in dimensionless form. In this paper the non-linear differential equations obtained by [1] are solved analytically using HAM and the solutions are graphically compared with the numerical solution.

A Novel Convolution Block-Based Contour Texture Analysis Model for Palmprint Recognition System

Abirami Balasubramanian[1*], Krishnaveni Krishnasamy[2]

Abstract

The detection of human elements is essential for securing digital data in an IoT World. It can be accomplished utilizing different methods. The palmprint recognition of individuals is providing more security through the recognition of their left or right palms compare to other biometric traits. Our research work is proposed a novel system for enhancing the accuracy of security in biometric technology. A novel Convolution Block-Based Contour Texture Analysis Model for Palmprint Recognition (CBCTPR) system is proposed. To accomplish this system, Two Dimensional-Palmprint Region of Interest (2D-PROI) image is pre-processed and Contour Pre-processed 2D-PROI image (CPI) is created, and extracting the texture features using Block-Based Contour Fractal Dimension (BCFD) approach. In the BCFD approach, CPI is subdivided into 16 × 16 blocks, and apply Probabilistic Box-Counting (PBC) algorithm on each block to fetch the texture features. This research experiment is performed on the Multi-Spectral 2D-PROI database of PolyU, derived from Hong Kong Polytechnic University in Hong Kong. Finally, Extracted texture feature values are put into the proposed BCFD-CNNNet to perform the classification and captured the genuine person authorization at 98.75% of identification accuracy.

Key Words: Biometric Technology, Block-Based Contour Texture analysis, Palmprint recognition system, Region of interest, Texture features, Fractal Dimension, Probabilistic Box-Counting

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Introduction

Biometric technologies are used for distinguishing an individual in view of the physiological and behavioral characteristics of humans [1]. Palmprint recognition is a biometric confirmation strategy in view of the benefits of ease of use, environment flexibility, and discriminating ability compared with other conventional biometric traits [2]. An entire palmprint recognition system involves pre-processing, feature extraction, feature matching, and decision-making phases [3]. Palmprint consists of lots of unchangeable textures and line characteristics. Extraction of texture and line characteristics is a vital process to gain information on palmprints which is used for authorization. It can be extracted using image processing techniques. Texture Analysis [4] cites the portrayal of locales in an image by their surface content depicted in terms of rough, smooth, sleek, or bumpy. [5] In a general sense, texture alludes to the surface qualities and appearance of an object given by the size, shape, thickness, density arrangement, and extent of its rudimentary parts. The separation of texture features is utilizing several strategies. [6] [7] One most usable strategy is the model-based texture approach. It has a low computation time compared to other approaches. [8] Measurement of fractal dimension is useful for analysis and classifies the texture image efficiently. [9] Model-based methods take out the basic qualitative properties of the texture.

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A Novel Deep Supervised Contour Fractal Dimension Analysis Model

Abirami Balasubramanian ✉ & Krishnaveni Krishnasamy

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Abstract

A novel palmprint recognition system (PRS) using deep supervised learning (DSL) classifier is proposed in this research work. To divulge the novelty, a deep supervised contour fractal dimension analysis model for palmprint recognition (DCFPR) is put forward. That has a novel region-based contour fractal dimension (RCFD) feature extraction approach and a deep supervised Learning (DSL) classifier approach for acquiring the higher recognition and identification accuracy rate. To accomplish the RCFD approach, traced all the edges/contours of 2D palmprint region of interest (2D-PROI) image using Canny edge detection algorithm and then split into several regions. At each region, fractal dimension (FD) and the slope value (S) are computed in an idiosyncratic manner using the box-counting procedure and then accumulate all FDs and Ss of all regions to create a distinctive feature vector. Classify this feature vector using deep supervised learning (DSL) classifier approach to authenticate the genuine person of the taken palmprint at a higher accuracy rate. In this research, the multi-spectral 2D-PROI image database derived from PolyU, Hong Kong Polytechnic University, Hong Kong. The proposed model has been examined and evaluated with various metrics and found with 98% of authentication accuracy.

Keywords

Palmprint recognition system | Deep supervised learning classifier | Region-based contour fractal dimension | Canny's edge detection algorithm | Box-counting | Fractal dimension

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A STUDY OF NON-PERFORMING ASSETS IN STATE BANK OF INDIA

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ABSTRACT

Banking sector is the fast growing sector of any nation. To day, banking sector is becoming more complex. With the advent of the modernisation and automation, the ease of obtaining loans and advances has increased. There are many new products available in the market to advance loans. The business gets accelerated with the bank loans and as a result, economic position gets enriched. On the other hand, while the loans are not repaid, it questions the income and performance of the bank by itself. While the bank's loan helps the development of an industry, when the loans and advances become a nonperforming asset, it creates a negative impact on the bank's credibility and performance.

INTRODUCTION

Finance is the life blood of every activity. It is the basic for socio-economic growth. It acts as a catalytic agent, so it is a great necessity. The role of finance in the economic development of a country is recognized. To meet this growing need of finance, the banking system was strengthened during the early period of independence in India. This is the core of the money market in economy. The banks are the most important segments of the financial sector. Generally, banks collect money from those who have spare money or who try to save it out of their income and lend this money out to those who require it. This mechanism of providing finance is a highly useful necessity in any community.

In the modern era, the process of globalization has mainly its huge influenced on the Indian banking industry. In the post liberalization period, there was an ardent need to bring about structural changes in the Indian banking system so as to make it economically viable and competitively strong. Therefore, the Government of India set up a High Level Committee with Mr. M. Narasimham, a former Governor of RBI, as chairman to examine all respects relating to the structure, organization, functions and procedures of the financial system. Based on the recommendations of the Narasimham Committee, the first phase of Financial Sector Reforms was initiated in 1991. Even though these reforms pump a vibrant action in the banking sector,

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A STUDY ON DIRECT MARKETING WITH SPECIAL REFERENCE TO AMWAY PRODUCTS

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Abstract

Today the geological support of promoting has been traded by our requirements for substantially more practical, quantifiable and solid approaches to dealing with client's. Brands are presently attempting to connect with clients in socially nuanced ways, and taking on direct advertising appears to be the most pragmatic way to deal with get it going. In the new heading of advertising, the best possibilities are recognized, found and convinced, bringing about augmenting the two deals as well as benefits. Direct showcasing attempts to develop and take advantage of an immediate connection between the vendar and its possibility. Direct showcasing happens when organizations address clients through a large number of channels, including mail, email, telephone, and face to face. The consequences of such missions are promptly quantifiable, as a business can follow the number of clients have answered through a message's source of inspiration. In present situation of digitalization, direct promoting is utilized by advertisers to foster cozy relationship with every clients to accomplish the faithfulness of clients. The reason for this study was to investigate direct showcasing as the best type of advertising.

Catchphrases: Direct promoting, Customer relationship, Effective

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A STUDY ON PERFORMANCE APPRAISAL SYSTEM IN HLL LIFECARE LTD, TRIVANDRAM

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ABSTRACT

Human Resource (or personnel) control, with inside theexperienceof havingmattersaccomplishedviahuman beings, is an importanta part ofeach manager`s responsibility, however many businessesdiscover it fineto set upa expertdepartment to offer an professionalcarrierdevoted to making sure that the human useful resourcecharacteristic is done efficiently. “People are our maximumprecious asset” is a cliché, which no member of any senior controlgroupmight disagree with. Yet, the truthfor plentybusinesses are that their human beingscontinue to be valued, beeducated and be utilized. Once the worker has been selected, educated and motivated, he's then appraised for his overall performance. Performance Appraisal is the step in which the Management reveals out how powerfulit's been at hiring and settingpersonnel. If any troubles are identified, steps are taken to talk with the worker and

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AN EMPIRICAL STUDY OF INVESTORS' PERCEPTIONS OF VARIOUS INVESTMENT AVENUES IN TAMILNADU

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ABSTRACT

In the 21st century of the digital era, due to globalization and economic liberalization lot of business expansions, industrial development and infrastructure changes and growth, an increase in foreign investment and personal financial assets are created rapid growth in investment and which makes a passionate situation for each and every investor who wants to take part in taking a risk in investments, gaining knowledge and capacity to save money and invest in the stock market, gold, real estate, insurance, post office, Mutual funds, and others similar different investment opportunities accessible in India for of small investors. There are very few studies that have explored investors' perspectives in the field of equity, mutual fund and other avenues. However, the investors' perception in Tamil Nadu is yet to be explored, and this empirical study is an attempt to examine the investors' perception of various investment avenues in Tamilnadu. For this study, Primary data using simple random sampling through questionnaire structured questionnaire was used to collect data as well as secondary data from a wide range of literature from various journal publications were utilized. Descriptive statistical methods such as demographic analysis with simple percentages Mann Whitney and Kruskal-Wallis tests were used to test the study's objectives. The results emphasized that the age plays a vital role in investor's perception and high-income investors prefer to invest only in Gold and Bank deposit for safety and liquidity investment reasons. The research would benefit academics, market researchers, institutional investors, traders, distributors, and other potential investors.

***KEYWORDS*:** Gold, Gold ETF, Investment Options, Investors' perception, Mutual Fund.

I INTRODUCTION

Financial markets are vital to a country's economic development. They facilitate the process to utilize scarce resources by transferring them from savers to borrowers, so boosting the nation's investment activity. The most important role of contemporary finance is the effective deployment of money. It entails making decisions on the firm's long-term financial commitments. A country's economic growth is essentially determined by the savings of its residents. Investing funds in a range of possibilities helps the country flourish. Investing is the practise of putting one's money into assets with the hope of earning more money or rising in value over time. It is not a game, but a serious matter that might have a substantial impact on investors' future success. Which of the possibilities is picked is determined by the needs and requirements of each investment. Each investment has unique characteristics such as return potential and risk. Because the future is unknown, one must assess how much risk he or she is willing to take, given that higher returns are predicated on accepting more risk. Before investing, the investor must weigh several investment options in terms of risk, return, term, convenience, liquidity, and so on. Even if a person does not select specific assets, such as stocks,

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AN INTUITIONISTIC FUZZY TOPOLOGICAL TM-SYSTEMS

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Abstract. In 2010, Tamilarasi and Megalai introduced a new class of algebras called as TM-algebras. In this paper, discuss the notion of an Intuitionistic fuzzy topological TM-systems .

AMS Classification: 08A72, 03E72, 03F55

Key words : BCK/BCI Algebra,TM-Algebra,Fuzzy Topology

1. Introduction

In 1996, Y.Imai and Iseki [17] introduced two classes of algebras originated from the classical and non-classical propositional logic. These algebras are known as BCK and BCI algebras. It is known that the notion of BCI-algebra is a generalization of BCK-algebras in such a way that the class of BCK algebras is a subclass of the class of BCI –algebras [18]. In 1986, K.T.Attanassov introduced the notion of Intuitionistic fuzzy set [12]. Recently in 2010, Tamilarasi and Manimegalai introduced a new class of algebras called TM-algebras [23].

In 1965, L.A.Zadeh [25] introduced the notion of fuzzy sets, to evaluate the modern concept of uncertainty in real physical world. The theory of fuzzy topological spaces is developed by Chang [14], Wong [24] , Lowen [19] and others.

In [1], we studied Fuzzy Topological subsystem on a TM-algebra. In [2], we studied $L-$ Fuzzy Topological TM-system. In [3], we studied $L-$ Fuzzy Topological TM-subsystem. In [4], [5] we studied Fuzzy Supratopological TM-system, Fuzzy $\alpha-$ supracontinuous functions. In this paper, discuss the notion of an intuitionistic fuzzy topological TM-systems and investigate some simple properties

2. Preliminaries

In this section we recall some basic definitions that are required in the sequel.

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Antibacterial Activity of Cadmium Stannate Nanoparticles Synthesized by Chemical Precipitation Method

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Abstract:
The removal of bacteria from water is an extremely important process for drinking and sanitation systems, especially against bacteria and fungi. Cadmium Stannate (Cd_2SnO_4) is a peculiar and promising material, that received much attention from scientific perspectives and industries for its excellent structural, optical and electrical properties. In this present work, cubic phase Cd_2SnO_4 nanoparticles have been synthesized by the chemical precipitation method. XRD, FESEM, EDAX, FTIR, PL and UV analysis have been performed to study the structural, surface morphological, elemental composition and optical properties. The antibacterial activities of the nanoparticles were carried out for Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) by using zone inhibition method. The XRD results confirm the formation of a cubic structure with a particle size of 46 nm. FESEM image shows the cubic-like structure of the nanoparticle. The absorbed peaks from EDAX spectrum confirm the presence of Cd, Sn and O elements. The formation of absorption bands in the range of 500–1200 cm^{-1} is attributed to the metal-oxygen stretching of Cd-O and O-Sn-O. The transmittance value was measured as 76% from the UV graph. The optical band gap was measured as 2.4 eV from Tauc's plot. The photoluminescence spectrum reveals the presence of multiple emission bands in the UV-Vis region. The antibacterial activities confirm Cd_2SnO_4 nanoparticles have great potential against gram-positive and gram-negative bacteria and can be used effectively to remove pathogens and bacteria from contaminated water.
Key Words*:Cd_2SnO_4 nanoparticles, XRD, FESEM, EDAX, FTIR, Antibacterial activity.*

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I. INTRODUCTION

The application of nanomaterials in water and wastewater treatment has drawn wide attention, due to their small sizes and large specific surface areas, nanomaterials have high mobility [1], strong adsorption capacities, and reactivity [2]. In addition, heavy metals [3], organic pollutants [4], inorganic anions [5], and bacteria [6] have been reported to be successfully removed by various kinds of nanomaterials. The antimicrobial efficiency of metal oxide nanoparticles depends on the particle size, presence of light, the composition of the aqueous medium used in assay *etc*. Metal oxide nanoparticles are found to be the good inhibitors to bacterial strains [7]. One of the members of the ternary oxide family, Cadmium Stannate (Cd_2SnO_4) is an n-type semiconductor with bandgap values around 2.6 - 3.2 eV, high carrier density ($\sim 10^{21} cm^{-3}$), high mobility ($\sim 100 cm^2V^{-1}s^{-1}$) and low absorption, these impressive optical and electronic properties mold them to use in several applications, such as lithium-ion batteries, solar cell and photocatalysis, water splitting, gas sensor, *etc*.. [8-12]. Cd_2SnO_4 forms two different crystal structures, the cubic phase at low temperature (up to 750 °C) and the orthorhombic phase at high temperature *i.e*., above 1000°C [12]. Cd_2SnO_4 nanoparticles were synthesized using several methods such as solution combustion method [11], hydrothermal [10], and chemical precipitation method [13] sol-gel [14] *etc*.

Hence, in this present work, we have made an attempt to develop cubic phase Cd_2SnO_4 nanoparticles by the chemical precipitation method. Further, the antibacterial activities of the nanoparticles were carried out against gram-positive *Staphylococcus aureus*and gram-negative *Escherichia coli* by using the Zone inhibition method. To the best of my knowledge, no reports were available in the literature which explores the antibacterial activity of Cd_2SnO_4 nanoparticles against gram-positive *Staphylococcus aureus*and gram-negative *Escherichia coli* for wastewater treatment.

APPERCEPTION OF ENDURANCE THROUGH VERSIFICATION IN GITHA HARIHARAN'SI HAVE BECOME THE TIDE

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Abstract
Differences and divisions in native people and culture are encountered as a primary element in postcolonial discourses. The actual difficulty lies between highlighting various images and identifying the flexibility of the dissemination of dominant ideologies. Postcolonialism presents a distorted picture of differences between the ideological and material representation of the society that reshaped the structures of human knowledge. The present research article titled "Apperception of Endurance through Versification in GithaHariharan'sI Have Become the Tide" portrays the endurance of Dalits over centuries through the fusion of poetry with fiction using postcolonial theories. The suppression of Dalits and the treatment of the other and their voice against the oppressed continue to confound the lives of many in independent India.
Keywords: *dalits, poetry, identity, struggle, endurance, violence, resistance*

Introduction

Recent Indian fictions are obsessed with the ideology of functioning of binaries highlighting the native and the other and the alterity in the postcolonial independent India. The thought of the 'other' and redefining their identity is preoccupied with many questions. Are humans same or different? Are we overemphasizing the binary between the native Indians? What should be our tactics to dismantle the cliché of hybridity of identities?

Materials and Methods

The writers are not only determined by their countries' history, beliefs, or class but also by their social experience of different measures. Githa Hariharan in *I Have Become the Tide* meticulously recorded the self-representation of insiders against power and reconceptualize the social and political domination of postcolonial discourses and theories which are indebted to criticize how colonialism has affected the civil society. It locates resistances, polarity and conflicts of the oppressed natives against the power.

Interpretation and Discussion

The innate state of the human mind can be developed only by the discussion of social power and supremacy. The virtues of historical, social and cultural rationality and cohesion confer the identity with the subjects of self and the society. The deep realization of self (i.e.) body and soul is a space of splitting which is caught between demand and desire.

…the question of identification is never the affirmation of a pre-given identity, never a self-fulfilling prophecy – it is always the production of an image of identity and the transformation of the subject in assuming that image. The demand of identification – that is, to be for an Other – entails the representation of the subject in the differentiating order of otherness. *(Culture 64)*

The philosophical and the anthropological views of the division of human identity can be seen in the division of culture. Resistance is an effect of dominating discourses since it is achieved as a result of disavowal and power. These discriminatory practices

…do not simply or singly refer to a 'person' or a dialectical power struggle between self and the other, or to

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Association Between Demographics and Financial Literacy of Women

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Abstract
Financial literacy is fundamentally spreading the awareness of good money and management practices. It includes all currency transactions made by a person, such as income, expenses, savings, loans, and investments. Financial literacy is a process of making sense of and indulgent financial issues and situations. In the present study, authors have presented an association of demographic factors towards financial literacy among women in Vizianagaram, Andhrapradesh. The sample size of 540 women from various areas of Vizianagaram has been incorporated for the research. A structured questionnaire designed on a 5 point Likert scale has been used based on a simple sampling method. The association between independent variables, i.e., demographic factors, is investigated by applying One-way Anova for hypothesis testing. The findings revealed that the financial literacy of women has a moderate association with demographic factors.
Keywords: Financial Literacy, Women, Demographic Factors, Vizianagaram.

Introduction

Financial literacy is about education and understanding of various financial areas, including topics related to managing personal finance, money and investment. Financial literacy is generally related to managing personal budgets, taking proper and efficient decisions related to one's finances such as investment, purchasing or investing in real estate, education for their children and saving for the future. It also involves knowledge about calculating simple and compound interest, managing debt, techniques related to savings and spending, and the proper use of funds. Lack of financial knowledge can lead to poor financial decisions, which will hurt a person's financial situation. Financial literacy is a way for people to raise awareness of various concepts in finance, financial markets and financial products such as stocks, bonds, mutual funds, and make appropriate decisions to improve their financial status and avoid financial instability. A combination of awareness, attitude and information about financial products and services can take proper and good decisions related to finance. Financial literacy indicates an awareness of financial products. Financial literacy depends on how one manages his own money and how efficiently one utilises financial resources for the growth and welfare of oneself, his business and family as a whole. The Organization for Economic Co-operation and Development (OECD) and the International Network on Financial Education (INFE) define financial literacy as: "A combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing".

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universities and other affiliated colleges to install the ICT facilities and generate a digital environment.

2. ICT IN ACADEMIC LIBRARY SERVICES

Information has played an important role in all societies since the dawn of civilization. However, in recent years its increase in volume and accuracy as well as greater access, have significantly elevated its value in all aspects of social life. The world is undergoing an Information Communication Technology (ICT) revolution, a revolution that has enormous socio-economic implications for the developed and developing countries. Science and Technology have undergone revolutionary changes in the recent past. The new information and communication technologies are among the driving forces of globalization. They are bringing people together, and bringing decision makers with unprecedented new tools for development. However, the gap between information 'have' and 'have-nots' is widening, and there is a real danger that the world's poor will be excluded from the emerging knowledge-based global economy. Information and Communication Technologies form part of the functions of today's complex society. Without this, the present society would find if self in inarticulate chaos, devoid of direction and technology floods us with information and entertainment. The influence is tremendous in decisions of government, leap over national frontiers and stimulate trends in society especially in the field of education. ICT comprises a diverse set of technological tools and resources to create, disseminate, store and manage data and information.

3. REVIEW OF LITERATURE

Olaniyi, recommends among others that government should encourage the use of ICTs among the poultry farmers in the area and in Nigeria at large through its inclusion in the agricultural extension Programme curriculum of different states. Hue and Jalil (2013)[2] stated in the field of education is to meet the ever-growing demands of modern life and the exponential growth of technological advancement, educators will invariably need to creatively find ways of incorporating ICT into their curricula. Bozdoğan and Özen (2014)[3] further suggest that the perceived use of computers,

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Awareness Study of Personal Financial Planning among the Households in Sattur Town, Virudhunagar District, Tamil Nadu

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Abstract - **"How is that people are motivated to go to a doctor but not motivated to go to a financial counselor, if individuals are ultimately responsible for their own financial health" (Bowditch, 2005). The above quote touches an important aspect of individual financial planning behavior i.e., the lack of motivation to engage in personal financial planning. This observation prompted the researcher's interest in studying the individual financial behavior as personal financial planning is becoming increasingly important in academic world as well as in practical life. Financial awareness prepares an individual with the ability to understand, monitor, and use the financial resources effectively to enhance the well-being of one's own self and also the economic security of the family. The understanding of financial needs allows one to know the financial structure and the related financial literacy level. The main objective of the study is to assess the awareness of personal financial planning among households in Sattur town. The questionnaire administered in this study measures the level of awareness about preparing financial planning and knowing the economic and social benefits of the same. The survey examines the respondents' awareness about personal financial planning. The researcher prepares three questions to measure the level of awareness on respondents' knowledge, skills and their views on socio economic benefits. To examine the range of awareness among households of Sattur town, three items are chosen viz, awareness on personal financial planning, perception levels, economic and social needs and their response was tabulated. The research concluded that though the study in the area of personal financial planning has recognized that general education significantly increases the investment, income and retirement savings, it may not prepare one with sufficient skill and knowledge for taking investment decisions. Only financial education at early stages of life i.e., at the school or college level, helps in promoting personal financial planning of households.**
Keywords: **Personal Financial Planning, Individual Planning, Saving, Investment Decision**

I. INTRODUCTION

The relationship between personal financial planning and economic growth has received consideration as an interesting area of research study for social scientists throughout the world. An extensive financial plan cannot only increase the quality of life, but also increase the satisfaction by reducing unsureness about future needs and possessions. The benefits of personal financial planning are as follows.

1. Increased efficiency in obtaining, employing, and protecting financial resources throughout one's lifetime.
2. Improved control of financial affairs by evading surplus debt, bankruptcy and the need to depend on others for economic safety and security.
3. Enhanced personal relationships which results from effectively communicated and well-planned financial decisions.
4. Freedom from financial worries by focusing on anticipated future expenses and attaining personal economic goals.

A wide conducted research on personal financial planning is imperfect without evaluating the awareness levels of the sampled population. Correspondingly, knowledge of saving schemes, insurance service, retirement plan, investment planning, estate planning and other related aspects may not be sufficient for the current study. Individuals must know the way or process of personal financial planning together with its associated benefits in order to get rewards in future.

The present study aimed at measuring the awareness levels of sampled respondents on various aspects of personal financial planning. Similarly, the complication in the personal financial planning process forces investors to plan their savings with at most care and caution. Hence, people should be conscious of both the traditional and innovative financial products.

Financial awareness prepares the individual investors with the ability to understand, monitor and use the financial resources effectively to enhance their well-being as well as the economic security for the self, family and one's business. The knowledge of financial needs enables one to know the structure and related literacy at various stages.

The ability to frame financial choices that are compatible with preferences is restricted by someone's ability to gather and process information. Lack of knowledge of financial planning results in a household's decision of not participating in financial markets.

Bioactive potential of invertase by yeast *Saccharomyces cerevisiae* from the honey bee gut: isolation and characterization

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This article has been updated

Abstract

The speedy growth of human population, the issues arising out of pollution, demand of invertase yield and dumping of wastes from agro-industry have been influenced to find new solutions for microbial enzymes. In this study, an attempt was made to produce the invertase by yeast isolated from honey bees. Influence of various process parameters like nutritional sources and environmental conditions was studied using waste material. The enzyme was precipitated by using the acetone to get the product for further experimental analysis. Subsequently, it was carried out for further purification by Sephadex G-50 column chromatography and dialysed. At that moment, optimization of culture conditions for the yield of invertase with agro waste was determined by process parameters. It was followed by the immobilization of microbial cells for increasing the yield of invertase by various matrices. In order to check the bioactive potential of invertase, the bread was prepared with and without the amendment of enzyme. The existing result could be supportive to future researchers for industrial applications of microbial invertase by immobilization approach.

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BIODIVERSITY IN RAMGARH AREA OF GORAKHPUR EASTERN UTTARPRADESH, U.P.

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INTRODUCTION

Biodiversity establishes different assets where upon families, networks, and people in the future depend for meeting their occupations. Individuals are particularly connected with the plant realm for its endurance from the earliest starting point of its appearance on this planet (Elizabeth and Dowdeswell, 1995). India is one of the super biodiversity-rich countries on the planet where the therapeutic plants are essential for our custom that is even regarded today. The principle conventional frameworks of medication in India incorporate Ayurveda, Siddha, Unani, and Homeopathy. 75% of the therapeutically significant plant species in India fills in practically wild condition (Laloo et al., 2006; Kannan and Jeeva, 2008). The WHO characterizes customary medication as approaches, wellbeing practices, information, and fusing plant-based drugs which are applied to treat, analyze, and forestall infections (WHO, 2003). Since days of yore, antiquated individuals for the most part rely upon natural solutions for the treatment of illnesses and issues (Singh et al., 2003).

Flower variety gives food, medication, and grain and has vital monetary and socio-social worth all through the world [Maity D. et al., 2004]. These plants are either wild or developed [Panskus AB, et al., 2013]. Of every one of these plants, consumable and therapeutic plants specifically assume a significant part in human existence [Akpabio UD, et al., 2013]. They give essential food and medication to nearby networks [Dahlberg AC et al., 2009, Kumar S et al., 2013]. Indeed, even in the advanced time, generally rustic and ancestral networks who live near the woodland rely upon plants for their day by day food and medical care needs [Sen S et al., 2011, Sahu CR et al.,2013]. Flower variety is straightforwardly relative to substance variety (bioactive mixtures), as reflected in the customary information on the native people groups and this space of science is known as "ethnobotany," or now and again ethnopharmacology [Catarino L et al.,2016, Sadeghi Z et al.,2014]. The World Health Organization (WHO) has assessed that as much as 80% of the total populace relies upon conventional medication for their essential medical care prerequisites [Singh A., 2013].

Flower variety isn't just rich in or close to the backwoods or country regions, yet it is likewise wealthy in little fixes of metropolitan regions. These regions assume an essential part in adjusting contamination and other ecological variables in metropolitan conditions. Remembering this, an endeavor has hence been made to archive the helpful greenery in and around the "**Ramgarh Taal** "space of Gorakhpur in India and its ethnobotanical potential.

MATERIAL AND METHODS

Study area

Locale Gorakhpur topographically arranged in the north-east "Tarai" area of U.P, India and lies between 26.50-27.90 N and 83.40-84.260 E at a height of 95 meter above ocean level. There are numerous impermanent and private water collections of shifting size around here. The investigation region Ramgarh Taal is an enormous, shallow, enduring eutrophic lake arranged at 26044'9" N and 83024'16" E eastern side of the Gorakhpur town. The precipitation shifts extensively from one year to another. The storm downpours begin during June and reach a conclusion in September yet may persevere till October. The base temperature goes down to 6ºC in the period of January and greatest up to 43ºC in the long stretch of June.

Map of study area (Ramgarh Taal area)

Enumeration of floristic diversity

In the current examination "Ramgarh Taal" studied double a year, viz., April – June and November-January and plant test have been gathered from more than 20 arbitrarily choosen destinations in various season. During the overview, plants happening in various zones are gathered, Photographed, and recognized. Gathered plants

later related to the assistance of herbarium and meeting with specialists. Every species was classified along with its plant name, nearby/regular name, and sort of the plant species.

RESULT

The consequence of plant variety of "Ramgarh Taal" Shrubs incorporates X types of blossoming plants, X genera having a place with X families. Among the X species, X species has a place with dicotyledons and X species has a place with monocotyledons. The most predominant family in the current investigation region is X with X species (X %). Close to that X (Family name) and X(Family name) involve X species (X%), Amaranthaceae incorporates X species (%), Lamiaceae contains X species (%), and Verbenaceae accepts X species (%). The point by point examination of the greenery of present investigation and their therapeutic qualities in an alternate region is addressed in Table and Figure. All the got data were utilized for treating various diseases.

DISCUSSION

India is blessed with a rich natural variety with about 12% of the worldwide plant abundance. Nonetheless, almost 33% of the complete plant types of India are endemic. In the current examination, among the different groups of blooming plants in India, the prevailing ones are Orchidaceae, Leguminaceae, Gramineae, Rubiaceae, Euphorbiaceae, Acanthaceae, Compositae, Cyperaceae, Labiatae, and Urticaceae. Besides, we can likewise recognize potential destinations where such uncommon and important therapeutic plants were found and still accessible as local area rationed zones or all the more explicitly restorative plant protection zones (Kala, 2005; and Singh et al., 2012). There is a pressing requirement for preservation of these plant species as a significant number of them can obscure remedies for current sicknesses. Thus, the aftereffects of the current investigation cleared a pathway for the botanist and other scientist for the maintainable usage of the normal assets. This examination gives the further extent of exploration on the organic properties of the restorative plants and augmentation exercises needed to foster the use of ethnomedicinal plants for the general public.

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BSE 30 Listed Companies Share Prices and Their Impact on Investor's Decision Making

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Abstract
The paper study about COVID 19 on the 30 BSE listed companies to find the effect of the pandemic on the share price. India's financial markets are witnessing high fluctuation due to the fall in global markets. The data was analyzed by taking the stocks' daily share price, and dividing them into two stages: Pre-COVID 19 crisis stage and During COVID 19 crisis stage. The study used investment analysis tools such as Beta to know the stocks' sensitivity toward the market. Alpha is used to understand the returns that the investors would get more than the market return, and event a study was conducted to find out the set hypothesis. Investors' opinions were collected using set questionnaires of information regarding selecting stocks for investment and the pandemic effect. Other essential information was collected from the investors who regularly trade in the stock market daily. The study concluded that different opinions from the investors would lead to fluctuation in share price in the stock market.

Keywords: *BSE, COVID -19, Decision Making, Event Study, Investors' Behaviour.*

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I. INTRODUCTION:

One of the most critical sectors for raising capital is the stock market; it has a history of developing the economy. A stock market is a place where stocks, otherwise called shares, commodities are bought and sold and help the investors make better investment decisions. Making financing inequity brings vast returns, which will lead to capital appreciation. Behavioural finance and financial econometrics have an area that studies the relationship between trade volume and volatility, which shows that investors' trading activity affects the stock market volatility; this shows the essential implications on investors' regularity. Before any Investor chooses for security exchange, the primary thing that strikes each investor's brain is well-being, security and the search for the most extreme return from the ventures on value shares. The fundamental consideration of value among investors is better to yield (Uncommonly in the event of profit and capitalization), higher liquidity and choices to begin an exchange with minor speculation.

Volatility is a technique to measure the fluctuations in share price, standard deviation and simple moving average method. It also describes the unpredictable movement in share price, economic factors, interest rate and other government and fiscal policies. In the year 2019 December, the whole country woke up to the news illness, which was later declared COVID -19 and got spread worldwide in no time. The pandemic COVID 19 affected the world's economy, and India was also one of those countries; due to the lockdown announced by the government of India, everything came to be stagnant in this busiest nation. The global market economy collapsed, the prices for all goods and services became low, and the unemployment rate increased. India has a solid stock market that reacts well to the global situation. The first COVID-19 case was reported in India on January 30, 2020, and the government declared a lockdown on March 24 2020. There was a gap of 53 days, and the virus got spread to the population easily; there would be a chance if the government had declared the lockdown earlier, the spreading of the virus to the people would be less. To know the COVID 19 impact on BSE companies and find risk and return from stock investment, the calculation of Beta and Alpha was used. The event study analysis was used to find the coefficient (to see the variation from one data to another). T-test (was used to find any difference between pre-COVID and during COVID-19) and probability (to know the higher return or lower return based on the historical data in both periods). Primary data was collected from the investors who regularly trade stocks to understand the investors' decision-making.

RESEARCH ARTICLE

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செவ்விலக்கியங்களில் காட்டும் விழாக்கள்

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Ceremonies Showing in Classical Literature

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ABSTRACT

In primitive times, humans who wandered independently in their habitats without worrying about shelters needed to adapt their lifestyles to protect themselves from other life forms and to obtain the factors they needed to survive. People who had been living separately came together and started living in ethnic groups. The ceremony was a tool for the man who was destined to live like this out of fear of survival and to associate himself with his ethnic groups. And this festival was a factor in the evolution of this ethnic group into a society. Used as a tool in the early stages, the festival later evolved into a part of depicting the traditions and culture of a human-based society headed by a distinct ethnic group. In the course of time, this festival has become a reflection of the living arrangements of the people of that time and the materials used, customs and social systems depending on their environment. This article describes the events that took place from the beginning to the end of the festivals celebrated in Classical Literature.

Keywords: Classical Literature, Festivals, Ethnic Group, Events

முன்னுரை

ஆதிகாலத்தில் கிடைத்ததை உண்டு, உறைவிடங்களைப் பற்றி கவலைப்படாமல் தான் வாழ்ந்த வாழிடங்களில் தனித்தனியாக திரிந்த மனிதர்கள், பிற உயிர்களிடமிருந்து தன்னைக் காக்கவும், தான் வாழத் தேவையான காரணிகளைப் பெறவும் தன் வாழ்க்கை முறையை மாற்றி அமைக்க வேண்டியச் சூழல் அவர்களுக்குத் தேவைப்பட்டது. தனித்தனியாக திரிந்து வாழ்ந்த மனிதர்கள் கூடி ஓர் இனக் குழுக்களாக வாழ ஆரம்பித்தார்கள். அவ்வாறு வாழத் தலைப்பட்ட மனிதன் உயிர்அச்சத்தின் காரணமாகவும், தன் இனக் குழுக்களுடன் தன்னை இணைவித்துக் கொள்ளவும் ஒரு கருவியாக இருந்தது விழாவாகும். மேலும் இவ்வினக்குழு சமுதாயமாக பரிணாம வளர்ச்சி பெற இவ்விழா ஒரு காரணியாக இருந்தது. ஆரம்பக் காலக் கட்டங்களில் ஒரு கருவியாக பயன்படுத்தப்பட்ட இவ்விழா பின்னாளில் தனித்தனியாக இனக்குழுவாகத் தலைப்பட்ட மனிதர்கள் சார்ந்த சமுதாயத்தின் மரபு மற்றும் பண்பாட்டின் மரபுகளைச் சித்திரிக்கும் ஒரு பகுதியாக உருபெற்றது. காலப் போக்கில் இவ்விழா அக்கால மக்களின் வாழ்விடங்களின் அமைவின் பிரதிபலிப்பாகவும், அவர்களின் சூழல் சார்ந்து பயன்படுத்திய பொருட்கள், பழக்கவழக்கங்கள் சமுதாய முறைமைகள் ஆகியவற்றை அறிந்து

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Classifying Microarray Gene Expression Cancer Data Using Statistical Feature Selection and Machine Learning Methods

S. Alagukumar & T. Kathirvalavakumar

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Abstract

Objective: A breast microarray data is a repository of thousands of gene expressions with different strengths of each cancer cell. It is necessary to detect the genes which are responsible for cancer growth. The proposed work aims to identify a statistical test for extracting the differentially expressed genes from a microarray gene expression and a suitable classifier for classifying the gene as diseased and control genes. Method: Cancerous genes are identified by six statistical tests, namely Welch test, analysis of variance (ANOVA) test, Wilcoxon signed rank sum test, Kruskal–Wallis, linear model for microarray (LIMMA), and F-test using their p-values. The identified cancer genes are used to classify cancer patients using seven classifiers, namely linear discriminant analysis (LDA), K-nearest neighbor, Naïve Bayesian, linear support vector machine, support vector machine with radial basis function, C5.0, and C5.0 with boosting technique. Performance is evaluated using accuracy, sensitivity, and specificity. Result: The microarray breast cancer dataset of 32 cancer patients and 28 non-cancer patients is considered in the experiment. Microarray contains 25,575 numbers of genes for each patient. When LIMMA test is used to extract differentially expressed cancer genes and KNN is used for classification, the maximum classification accuracy 100% is obtained.

Keywords

Microarray | Breast cancer | Gene expression data | Statistical test | Classification

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Covid-19 Impact on Consumer Buying Behaviour: A Study of the Gold Jewellery Market in Tamilnadu

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ABSTRACT
The COVID-19 pandemic presents the greatest test the world has faced. This pandemic is a historic challenge for any economy to overcome as they have no prior preparation. Lack of testing kits, insufficient ventilators and community spread has forced countries to impose indefinite shutdown that has made major markets to suffer, the consumer faced unforeseen challenges to deal with the abrupt change in buying behaviours. The purpose of this research is to contribute to understanding the influence of the COVID-19 outbreak in Tamilnadu on consumer gold jewellery purchase behaviour. Consumer preferences fluctuate according to requirements, wants, choices, and fashion. Gold is a sign of success, power, and riches in many civilizations. Based on the foregoing, client buying habits. The survey indicated that females aged 26-40 make up the majority of investors. Most customers are self-employed and make very little money, but they invest it in gold, especially gold jewellery. They acquire gold with their own funds. During the epidemic, the bulk of consumers switched from monthly to annual purchases. Price, Quality, Trustworthy/Safety, Advertisement, Brand, Transparent, Convenient easy, Transparent, Family/Friends suggestion and Shop Display are 10 aspects that influence while purchasing gold jewellery. The study will assist to identify customer preferences for jewels during a pandemic and investigate different essential measures to boost the jewellery market's economy.
KEYWORDS: Buying Behaviour, COVID-19, Factors influence, Gold Jewellery, Investment.

Date of Submission: 05-03-2022 Date of Acceptance: 21-03-2022

I. INTRODUCTION

Gold is a very unique precious metal with which humanity has a deep and personal history. To Indians, gold is more than a precious metal. Since time immemorial, Indians have considered gold as a symbol of purity, luxury, wealth, status, beauty, affection, and good fortune. This brilliant yellow metal, unlike any other, elicits strong emotional responses in humans. Historically, gold has been seen as a safe investment, akin to liquid cash, and has been used as risk collateral. Purchasing gold jewellery is an integral part of our culture, and it plays a crucial role in all aspects of our life, including birth, marriage, health, house construction, festivals, and religious rites. Women in India, regardless of religious affiliation, like wearing gold jewellery. Gold jewellery is the preferred wedding present for close relatives of the bride and groom. Farmers are particularly fond of jewellery, with gold sales surging following a prosperous agricultural season. There were several theories regarding the impact of various types of jewellery on health, and it was worn to ward against particular maladies such as smallpox. The application of gold to the nose was intended to provide protection against colds. While "Rudraksha beads" were believed to lower blood pressure, valuable stones were believed to have a positive effect on one's health and disposition. Jewelry has been associated with a number of health and well-being benefits. As a result of this, India's gold market is one of the largest and fastest growing in the world in terms of consumption of gold jewellery.

The globe is currently battling the century's largest pandemic, called "COVID-19," which is being fuelled by the new corona virus SARS-CoV-2. The illness, which was originally identified in December 2019 in Wuhan, Hubei Province, China, has spread globally, causing severe respiratory discomfort in susceptible individuals. The World Health Organization (WHO) declared the COVID-19 outbreak a pandemic in March 2020. WHO has asked countries worldwide to act swiftly to treat COVID-19 and safeguard human life. The WHO suggested staying at home, using face coverings or masks, maintaining social distance, and adhering to

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Customer Perception towards Core Banking Services in Virudhunagar District

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ABSTRACT

Banking is now no longer confined to the branches were one has to approach the branchin person, to withdraw cash or deposit a cheque or request a statement of accounts. In the present day competitive banking atmosphere, banks recurrently assess their services and products for providingsuperior services and innovative products to their customers. At the same time, the demand for modern services is continuously mounting among all the segments of customers. The banks are using new and modern means for not only to absorb but also to hold the customers and attain competitive advantage over their rivals through making customers satisfied and loyal. The findingsexplicate that customers of banks are satisfied with internet banking, on-line banking, electronic transfer, core banking, transfer and utility payment services.

Key Words: Customer, Bank, Satisfaction, Core banking Service.

INTRODUCTION

Today, all banks basically offer the same types of services and facilities to customers. The banker who wants to compete with others has to depend more on the efficient services and to coordinate relationship with his customers. The only factor that distinguishes one bank's service from the others is the "Customer Satisfaction" relate with the services rendered by the bank. It is the most important factor that influences the customers' choice of their bank. The success of banking generally depends on customer satisfaction with new technological services rendered by the banks.

The banking industries are mostly customer driven and their survival in the competitive environment largely depends on new technological services provided by them. Technology plays a vital role in improving the quality of services provided by the banking sectors. One of the technologies which really brought information revolution in society is the Internet technology and it is rightly regarded as the third wave of revolution after the agricultural and industrial revolutions. The advent and adoption of the Internet by the banking industry has removed the constraint of time, distance and communication, making the globe truly a small village. The financial sector being no exception, numerous factors such as competitive cost, customer service, increase in education and income level of customers and so on influence banks to evaluate their technology and assess their electronic commerce and Internet banking strategies.

In recent time, the concept of core banking is growing rapidly. The core banking provides system or service in while; the bank customer can avail of service at any other branch of same bank and can make a transaction. In core banking system, all other branches are connected to main branch. Consequently, in the result of any bank customer can make transaction at any other branch. In the era of information technology, banking profession is rising therefore it cannot enlarge without information technology at the same time as banking sector rising therefore banking cannot stay away from using information technology. Bank is supposed to be in competition by using modern technology. In that public sector banks have quickly expanded their branches. Therefore the concept of core banking system comes in survival and that is why every bank has adopted core banking system.

Generally, all branches of the bank are connected to central information system. For all banks, central information system is an operation at all central level transaction online. These all transactions are related to general information system, therefore it is called the core banking, and the general information system is very essential facility at every bank. In central information system at main branch has very details of transaction at the level of bank. Therefore, it is very useful information to support system network central solution and implements instant service availability. It is central information system not working to avoid problem of other branches transaction. This service is made available through disaster

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DATA SCIENCE IN BUSINESS FOR CUSTOMER ACQUISITION, BETTER MARKETING, INNOVATION AND ENRICHING LIVES

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1.1 INTRODUCTION

The 21st century will be ruled by data. Data Science has become an indispensable part of many businesses and industries. It provides valuable insights into customer behavior that can lead to increased conversions, more detailed market analysis for competitive advantage in pricing strategies or product development, improved operational efficiency, and minimized risk exposure through accurate forecasting models. The emergence of disruptive technologies like IoT, digital media platforms, smartphones, artificial intelligence, big data analytics, blockchain, and quantum computing has ushered in an era where Data Science will be central to organizational success. Data Science has critical applications across most industries. Organizations, big and small, need Data Science to make decisions, analyze market trends, minimize losses and maximize profits. Data-driven insights cannot only radically transform businesses but also help target new markets, address customer pain points, boost revenue and much more. As such, an ever-increasing number of businesses are focusing on capturing, interpreting, and being informed by data.

Research shows that companies and organizations are heavily investing in data-driven businesses. A part of their investment is directed towards technology. The next generation of

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Decomposition of Various Graphs in to Prime Graphs

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Abstract
Abstract: In this paper we define prime decomposition and prime decomposition number $\pi_p(G)$ of a graph. Also investigate some bounds of $\pi_p(G)$ in product graphs like Cartesian product, composition etc.

Keywords: Decomposition, Prime graph, Cardinality.

1. Introduction

A decomposition of G is a collection $\psi_p = \{H_1, H_2, ...H_r\}$ such that H_i are edge disjoint and every edges in H_i belongs to G. If each H_i is a prime graphs, then ψ_p is called a prime decomposition of G. The minimum cardinality of a prime decomposition of G is called the prime decomposition number of G and it is denoted by $\pi_p(G)$.

2. Prime Decomposition

In this section we define graceful decomposition of a graph $G(V,E)$ some and investigate some bounds of graceful decomposition number in $G(V,E)$.

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Disparate structural changes in the titanium dioxide thin film coated on the *p*-type Si and porous silicon textures after gamma irradiation

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DREADFUL AND DOUGHTY TRAVERSE IN ERNEST HEMINGWAY'S THE OLD MAN AND THE SEA

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Abstract
The nautical fiction contains the story of a hero who attempts an adventure in the ocean or sea. The novel The Old man and The Sea possess the quality of the nautical fiction. The Novel is written in 1952 and it is considered as a remarkable novel of Hemingway. It is a simple story on the surface, but it is a tale with much deeper message and impact that transcends time and place. The story deals with an epic struggle between an old experienced fisher man and the greatest catch of his life. This paper describes how the protagonist of the novel suffers in the hands of natural disasters like the storm, starvation and dehydration. This paper also highlights how far a human being struggles for his livelihood amidst torment and also explains the conditions of fishermen who suffer endlessly in order to survive in the world. Apart from the sufferings and torments a fisherman exists by overcoming his miseries of hardships. It mainly deals with positive determination and self interfaces to go ahead in the life. It also focuses on the valiant and meaning life of the protagonist of the novel.

Keywords: *doughty, traverse, pervasive, harpoon, gaff, tiller, repercussion*

The nautical fiction comprises the story of a hero who attempts an adventure in the ocean or sea. The settings of nautical fiction vary, including merchant ships, liners, naval ships, fishing vessels, life boats, along with sea ports and fishing villages.The development of nautical fiction follows the development of the English language novels.

Ernest Hemingway is considered as the Nautical Fiction writer. He has a passion towards making adventure and taking risks in his life. His experiences in sea make him to record in the form of writings. Most of his works are based on his experiences faced during his voyages and fishing. The huge success of *The Old Man and The Sea*, published in 1952 was a much needed vindication. Philip Young comments:

Hemingway, taking a view of that failed novel which occasionally over rode his concern for his sea story, went way out and hooked his great prize, a book to keep a man all winter, but then the critics ate away at it until there was nothing left. He was still the master of many tricks and still up to bringing in the great novel. (26)

The most significant aspect of the novel deals with the environment of Santiago who lives with a struggle and pain.

We can't always choose our circumstances but we can choose how we respond to what life throws at us, and there is power when we realize our ability to alter our destiny. (Grylls 278)

The novel begins with the situation that Santiago has been without catching a fish for eighty four days. On the eighty-fifth day he catches a very big Marline. He struggles for three days to kill that fish. After killing the fish he ties it at the side of the boat as the fish is bigger than the boat. While returning towards harbour due to the smell of marline's blood a group of sharks are attracted towards the dead fish. They eat the whole flesh of the Marline. In the end of the story after a fierce fighting, Santiago returns to the harbour only with the big carcass of the fish Marlin.

The environment of the fisherman Santiago is found to be difficult in his place. Santiago seems to have sympathy towards the birds and animals on the sea. Santiago seems to have sympathetic feelings towards all creatures he meets during histime on the sea. He regards the flying fish as his principal friends on the ocean. He is also sorry for the turtles that are killed by other fisherman. He does not like to kill turtle because turtle's heart beats for an hour after it has been butchered. The old man thinks that his heart too is like that of turtle. The old man is not like a commoner who has no feelings for animals and consider it as worthless as compared to human beings.

Man struggles against the forces of nature with all the strength at his command in order to assert his existence.

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E – CRM

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Abstract:

E-CRM (electronic client relationship the board) is an inference from CRM methods which affected direct showcasing innovation and call Center to advance hugely made items and administrations to little sub-fragments of market. At the point when CRM strategies are fused in online business climate it becomes E-CRM which includes building a solid and manageable client relationship by utilizing Internet. It is a technique which is simply founded on Internet and programming advancement, it expects to make fundamental coordinated programming suite to manage a wide range of client related issues like client administrations, deals and showcasing field support. The fundamental pieces of E-CRM are to zero in on building new client base, division of high esteemed clients, improving the productivity of existing client and augment the worth and life of beneficial clients.

Keywords: E CRM, E-CRM, Intelligence, quantitative and subjective approaches, innovation.

Research Article

Eco-friendly green synthesis of silver nanoparticles using *Luffa acutangula*: synthesis, characterisation and catalytic degradation of methylene blue and malachite green dyes

Rajamanickam Rajasekar, Radha Thanasamy, Michael Samuel, Thomas Nesakumar Jebakumar Immanuel Edison & Natarajan Raman

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ABSTRACT

In this study, catalytic-degradation of dyes such as methylene blue (MB) and malachite green (MG) was carried out by using silver nanoparticles (AgNPs), obtained by adopting the flower extract of *Luffa acutangula* (LA). The biogenic synthesised LA-AgNPs were characterised by using UV-Vis spectroscopy, Fourier-transform infrared spectroscopy (FTIR), DLS (dynamic light scattering) with zeta potential analysis, X-ray diffraction (XRD) and high-resolution transmission electron microscopic(HR-TEM) analyses. The typical surface plasmon resonance peak of LA-AgNPs was observed at 428 nm, as confirmed from UV-Vis spectrum. The formation of LA-AgNPs was observed through colour transformation from pale yellow to dark-brown due to the reduction of Ag^{+}. Synthesised LA-AgNPs displayed spherical shape and face-centred cubic structure with an average size of 10–30 nm. The effects of various parameters such as initial extract concentration, time and time process were studied. The degradation reactions of MB and MG are found to follow the Langmuir–Hinshelwood mechanism with a pseudo-first-order kinetic model. Biogenic synthesised LA-AgNPs showed good degradation ability to reduce the MG and MB with $NaBH_4$.

KEYWORDS: *Luffa acutangula* | silver nanoparticles | dynamic light scattering | dye degradation

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Ecofriendly synthesis of silver nanoparticles using *Heterotheca subaxillaris* flower and its catalytic performance on reduction of methyl orange

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Effect of doping nickel/cobalt ions on the structural and photocatalytic efficiency of magnesium manganese oxide materials for the environmental applications

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Journal of Materials Science: Materials in Electronics

Aims and scope →

Submit manuscript →

A. Banu, B. Filip Jones, V. Muthuraj, Kadarkarai Govindan, P. Senthil kumar, M. Sasikumar, M. Thamilselvan, B. Vidhya, S. Rajesh & A. Sakunthala

Abstract

The excessive use of the antibiotics like norfloxacin and their residue is a serious threat to the environment. Although photocatalysis method of removing antibiotics is considered as an efficient method, again the materials used for the above purpose should be environmentally benign and earth abundant in nature. Hence exploration of new materials and enhancing the efficiency of materials for photocatalytic degradation of the above antibiotic become an important topic of investigation. Inducing oxygen vacancies in an environment-benign compound like $MgMn_2O_4$ through low concentration of transition metal ion doping and their advantageous changes in optical properties are favorable for the photocatalytic application. In this regard, the changes in the structural and optical properties of the $MgMn_2O_4$ compound, by doping with Ni/Co ions is explored. It is found that the nickel doping shows a high photocatalytic degradation of norfloxacin as 90–95% within 90 min under the irradiation of UV–Vis light, which is higher than the bare and cobalt ion-doped compound. This is due to the more number of oxygen vacancies as analyzed from XPS, high light absorption, and more charge separation retention characteristics, as per UV–VIS and PL studies, respectively. The $MgNi_{0.5}Mn_{1.5}O_4$ compound shows a high rate constant value of $9.25 \times 10^{-4}\ M^{-1}\ s^{-1}$ and high reusability up to four cycles and could be utilized as the efficient photocatalytic materials for wastewater remediation.

Journal of Water Process Engineering
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Efficient photocatalytic degradation of sulfasalazine and reduction of hexavalent chromium over robust In_2S_3/Nd_2O_3 heterojunction under visible light

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Evaluation of antioxidant and cytotoxicity activities of polyphenol extracted from brown seaweed *Sargassum tenerrimum* biomass

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Biomass Conversion and Biorefinery

Aims and scope →

Submit manuscript →

Shunmugiah Mahendran, Subbiah Sankaralingam, Senthurpandian Muthuramalinga Sethupathi, Durairaj Kathiresan, Mahalingam Muthumani, Loganathan Kousalya, Selvam Palpperumal & Balasundaram Harinathan

Abstract

The polyphenol compound is extracted from *Sargassum tenerrimum* with various bioactivities including antibacterial and antioxidant activity and MTT assay for cell cytotoxicity. The total phenolic content was 69.12 ± 0.24%. The *S. tenerrimum* polyphenol was found to phytochemical constituent's presence of flavonoids, saponins, tannins, phenolics, alkaloids and steroid. The antibacterial activity of polyphenol presented significant inhibition against ten human pathogen bacterial cultures such as *Proteus mirabilis*, *Klebsiella oxytoca*, *Escherichia coli*, *Bacillus cereus*, *Streptococcus pyogenes*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Vibrio cholerae*, *Salmonella typhi* and *Bacillus subtilis*. The in vitro antioxidant activity and MTT assay revealed that the polyphenol has anticancer activity against HeLa cells. The polyphenol compound was characterized through HPLC.

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FACULTY PERCEPTIONS TOWARDS ONLINE TEACHING IN ARTS AND SCIENCE COLLEGES DURING PANDEMIC PERIOD IN VIRUDHUNAGAR DISTRICT

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INTRODUCTION

COVID -19 -A novel Corona virus disease is spreading around the world, many countries have ordered the closure of all educational institutions. Educational institutions have come to the point where they need to protect their students from the viral manifestations that exist in the highly socializing student community. In early February 2020, schools were closed only in China and some affected countries due to rising pollution. However, in mid-March, nearly 75 countries announced that they were operating or closing educational institutions. As of March 10, one in five student dropouts worldwide due to COVID-19 school and university closures. According to UNESCO, by the end of April 2020, 18.86 countries had implemented nationwide closures, which would affect about 73.8% of the total enrolled students (UNESCO, 2020). Although locking and social distance is the only way to slow the spread of COVID-19 by breaking the spread chain, closing educational institutions has affected a large number of students.

As schools and colleges are closed indefinitely, educational institutions and students are examining ways to complete their recommended curricula within the timeframe set according to the academic calendar. These activities have certainly caused difficulties, but they have also sparked new examples of educational innovations using digital interventions. This is a silver lining in a dark cloud considering the sluggish pace of reforms in educational institutions, which continues with thousands of old lecture-based approaches in teaching, rooted institutionalism and obsolete classrooms. Nonetheless, COVID-19 is a stimulus for global educational institutions to take creative approaches in a relatively short announcement.

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Female Dystopia and Reinvigoration in Amitav Ghosh's *The Circle of Reason* and *The Hungry Tide*

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Abstract:

Amitav Ghosh is an evident writer of post colonialism. In his books, he deals with bundle of characters. Most of them are female characters. This paper makes an attempt to focus on ghosh's female characters who face the problem of dystopia and also explore how strive hard to overcome their problems and get reinvigorated in his two novels *The Circle of Reason* and *The Hungry Tide.*

Keywords: dystopia, reinvigoration, incarnation, patriarchy.

Women are a finesse gender in this society. They are surviving in the world of restriction. Whatever they do they may have some restriction. In India, people advise their female children who are studying or working to come home as earlier as possible. It means before sun set they have to get back home. But the same people don't give any advice like this to their male child. The patriarchal society has framed different rules and regulations for male and female. Some people still believe that the boy is an asset to their family because girl has to leave their family after marriage. So, they don't consider female child as an asset of their family.

Marriage makes unreasonable demands on woman. Pramod K Nayar rightly points out in his book *Postcolonial Literature an Introduction* that "in the Hindu context, notions of chastity, service to the husband,

Financial Literacy Among Working Women in Unorganised Sector, Sivakasi

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Abstract- Financial literacy may be understood as the capability of an individual to understand the financial terms and concepts, be aware about financial products and services and apply that knowledge for their financial wellbeing. A financial literate individual has the potential to develop a relationship between his financial requirements and the best financial product suitable for him accordingly. In olden days, women were not given any right to take any important decision. Now, everything has changed. Women are educated; they are allowed to work and to take financial decisions. Though women are allowed to take financial decisions, they don't have enough knowledge about various financial alternatives. Women do not have financial knowledge and awareness about various income tax and regulatory bodies. Hence, the present study is undertaken to understand the awareness level of working women in the study area. Financial literacy is a foremost issue in today times, the people are more appealing to earn income but they are not serious about their investment decision and saving allocation. Through the financial literacy, they are able to take investment decision properly. The conclusion of this paper is that women should be more knowledgeable about the investment avenue since they are generally depends on their spouses or other family members. However they are focus on the some investment avenue viz: Bank and Post office Fixed Deposits only. Due to improper knowledge about the shares, Mutual Funds and other investment alternatives, they cannot able to take investment decision in such kind of alternatives confidently.

Keywords : Strategy, financial, educated, empowered, investment

INTRODUCTION

Financial literacy has gained universal recognition all over the world. Even the fact that India is having a large population, a fast-growing economy with a national focus on inclusive growth and an urgent need to develop a vibrant and stable financial system; it is all the more necessary to quickly formulate and implement the national strategy. Financial education or financial literacy has assumed greater importance in the recent years. Women traditionally were primarily responsible for the home and daily maintenance activities, which often include household budgeting and bill paying. Women's lack of knowledge and confidence with regard to money management and investment programs impacts their ability to reach their financial potential. The basic principles of investing are the same across all gender, but women do not look at financial matters in the same way as their counterpart does. Women who are empowered and educated must utilize tools and resources to reach their financial potential.

Financial literacy may be understood as the capability of an individual to understand the financial terms and concepts, be aware about financial products and services and apply that knowledge for their financial well being. A financial literate individual has the potential to develop a relationship between his financial requirements and the best financial product suitable for him accordingly.

Women empowerment is achieved only when women are educated and financially literate and independent (Noctor et al., 1992). Financial literacy is the combination of awareness, knowledge, skill, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial well-being. A basic knowledge of financial concepts and the ability to apply numeracy skills in a financial decision. Women's role towards their economic empowerment and prosperity of the world will become more crucial in the near future. Hence, there is a greater need of economic empowerment through financial literacy, positive financial attitude and

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Flower decorated rod-like Pd @ MnO_2 nanocomposite: Focus on photocatalysis, Rietveld refinement analysis and electron density distribution analysis

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Fractional Hartley Transform on G-Boehmian Space

Rajakumar Roopkumar and Chinnaraman Ganesan

ABSTRACT: Using a special type of fractional convolution, a G-Boehmian space $\mathcal{B}_\alpha$ containing integrable functions on $\mathbb{R}$ is constructed. The fractional Hartley transform (FRHT) is defined as a linear, continuous injection from $\mathcal{B}_\alpha$ into the space of all continuous functions on $\mathbb{R}$. This extension simultaneously generalizes the fractional Hartley transform on $L^1(\mathbb{R})$ as well as Hartley transform on an integrable Boehmian space.

Key Words: Fractional Hartley transform, Fractional convolution, Boehmians.

Contents

1. Introduction

Hartley introduced a Fourier-like transform in 1942, which is called Hartley transform (see [7,11]). Like the fractional Fourier transform (FRFT) [21], many integral transforms have been generalized to the corresponding fractional integral transforms. In particular, fractional Fourier cosine transform (FRFCT), fractional Fourier sine transform (FRFST) and fractional Hartley transform (FRHT) were defined and used extensively in signal processing [4,24].

In [14], Mikusiński, J. and Mikusiński, P., introduced Boehmian space, which in general, consists of convolution quotients of sequences of functions. In [15], an abstract Boehmian space $\mathcal{B}$ is constructed by using a complex topological vector space G, $S \subset G$, $\star : G \times S \to G$ and a collection Δ of sequences satisfying certain axioms. As many of these Boehmian spaces contain the respective domains of various classical integral transforms, the research on Boehmian space includes extension of integral transforms to larger domains. For example, we refer [1,2,3,6,29,5,9,10,12,22,23,25,26,27]. Meanwhile, various versions of Boehmian spaces are introduced with new assumptions or slightly weaker assumptions than that are used in the general construction of a Boehmian space given in [15], by many authors [8,13,17,18,19]. Most recently, the G-Boehmian space is introduced in [9] as a generalization of the Boehmian space and the Hartley transform is extended to a suitable G-Boehmian space. In the present article, we introduce a special type of fractional convolution to construct a G-Boehmian space $\mathcal{B}_\alpha$ containing the space of integrable functions on $\mathbb{R}$. The fractional Hartley transform (FRHT) is extended consistently as a linear, continuous injection from $\mathcal{B}_\alpha$ in to the space $C(\mathbb{R})$, of all complex-valued continuous functions on reals.

This paper is organized as follows. In Section 2, we recall fractional Hartley transform, the general construction of a G-Boehmian space and some of their properties. In Section 3, we shall prove all the preliminary results required for the construction of the G-Boehmian space $\mathcal{B}_\alpha$. In Section 4, we provide the extended FRHT on this G-Boehmian space and investigate its properties.

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Green synthesis, characterization and applications of TiO_2 nanoparticles using aqueous extract of *Erythrina variegata* leaves

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Green synthesis is a simple, non-toxic, economical and eco-friendly approach for the synthesis of nanoparticles (NPs). The implementation of new technologies has led to the new area of nano revolution which unfolds the role of plants in bio- and green synthesis of nanomaterials. The plant extracts employed are neem, lemon grass, aloe vera, Indian gooseberry, etc., focusing on the green chemistry principles. In the present work, NPs of titanium dioxide (TiO_2) were synthesized using an aqueous extract of *Erythrina variegata* leaves as a capping agent. The leaf extract was utilized as a reducing agent for the conversion of metal precursors into metal-oxide NPs. *E. variegata*-mediated TiO_2 NPs were characterized by UV–Vis absorption spectroscopy, Fourier transform infrared spectroscopy, X-ray diffraction (XRD), energy-dispersive X-ray spectroscopy and morphological studies were conducted by scanning electron microscopy. The UV–Vis absorption spectrum showed an absorption band at 317.6 nm, which supports the formation of TiO_2 NPs. The optical band-gap energy was determined to be 2.35 eV. Further characterization by XRD supported the crystallinity and purity of the synthesized TiO_2 NPs. These NPs may have effective dye degradation ability. The green-synthesized TiO_2 NPs exhibited interesting photocatalytic efficacy on methylene blue dye under UV irradiation (using a multi-lamp photo reactor) and antibacterial activity against pathogenic organisms like *Streptococcus*, *Staphylococcus*, *Escherichia coli* and *Pseudomonas aeruginosa*.

Keywords: Antibacterial activity, *Erythrina variegata*, green synthesis, nanoparticles, photocatalytic efficacy, titanium dioxide.

IN the last few years, nanoparticles (NPs) have gained importance in the scientific field due to their typical size, shape, surface area and technological applications like electrical, optical, magnetic, catalytic, biomedical and antibacterial activities which cannot be achieved by their bulk counterparts[1–9]. Several traditional synthetic methods have been developed by various research groups to synthesize NPs using physico-chemical methods[10,11].

NPs are defined as a cluster of atoms between 1 and 100 nm in size that behave like a whole unit with respect to all their properties[12]. NPs are one of the most important gifts of science in the modern era. Nanotechnology mainly deals with the synthesis of NPs of variable size, shape, chemical composition and their potential use for the benefit of humanity[13]. The preparation of NPs can be done under three main conditions: (i) choice of environment-friendly solvent medium, (ii) reducing agent and (iii) a non-toxic material for their stabilization[14]. NPs are the building blocks of the next generation of technology with applications in several other fields[15].

Nanotechnology is an important branch of science. It deals with the synthesis and development of various types of NPs in sizes ranging from 1 to 100 nm (ref. 16). It has been noted that the physical and chemical properties of any material change when its size decreases to nanoscale[17,18]. The characteristics depend on certain traits such as size, particle distribution, morphology and high surface/volume ratio[19]. Metal-oxide NPs have gained attention for their potential applications in optoelectronics, nanodevices, nanoelectronics, nanosensors, information storage and catalysis[20]. Various metal-oxide NPs have been implemented in a wide range of applications. They can be used as catalysts in reduction, oxidation electrocatalysis, photocatalysis and gas-phase reactions[21].

Green synthesis is eco-friendly and manufactures stable and multiuse nanomaterials which involves on the action of biomolecules and works as a reducing and capping agent without toxicity, and supports the ease in manufacturing. The physical and chemical techniques are cost-effective and they involve the usage of instruments or chemical agents. Another limitation is low stability, contamination with residuals of agents and less compatibility in the pharmaceutical and cosmetics industry[22,23]. Moreover,

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Heterogeneous advanced oxidation processes over stoichiometric ABO_3 perovskite nanostructures

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Impact of *Camellia sinensis* Iron Oxide Nanoparticle on Growth, Hemato-biochemical and Antioxidant Capacity of Blue Gourami (*Trichogaster trichopterus*) Fingerlings

Published: 24 February 2022
Volume 201, pages 412–424, (2023) Cite this article

Biological Trace Element Research

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Prema Paulpandian, Ibrahim Sulaikal Beevi, Beena Somanath, Ramesh Kumar Kamatchi, Balaji Paulraj & Caterina Faggio

Abstract

The effect of green tea (*Camellia sinensis*) iron oxide nanoparticles (nano-Fe) on the effectiveness, growth, antioxidant capacity, and immunological response of *Trichogaster trichopterus* (Blue gourami) fingerlings was investigated. UV–Visible, Fourier Transform Infrared, Scanning Electron Microscopy, Energy Dispersive X-ray, X-ray diffraction, Dynamic Light Scattering, and Zeta Potential spectroscopy were used to evaluate the biologically synthesized nano-Fe. Characterization revealed the hexagonal and spherical morphology with an average diameter of 114 nm. Six different experimental diets were supplied to the fish in duplicate for 60 days. The first diet served as a control (no nano-Fe supplementation), whereas the remaining five diets contained nano-Fe at concentrations of 10, 20, 30, 40, and 50 mg/kg (D1 to D5). The results indicated that fish fed a nano-Fe diet at a concentration of 40 mg/kg had improved growth performance, biochemical constituents, hematological parameters, and antioxidant activity in *T. trichopterus*, implying that it might be used as a vital feed supplement in ornamental fish culture.

Impact of Covid 19 on E - Commerce in India - A Study with Special Reference to Sivakasi taluk of Virudhunagar District

Dr. J. Vimal Priyan
Head, Department of Commerce (CA) SF, V.H.N.S.N College (Autonomous), Virudhunagar, TamilNadu, India

Abstract **- The Covid-19 situation is bound to have many consequences for consumers, but many retailers have mixed opinions of the severity of Covid-19 and its impacts. One study by Digital Commerce 360 including a survey of 304 retailer shows that when asked what impact they believe the Covid-19 will have on their e-commerce business, 32% believed that it would go down somewhat while 30% answered that they think it would go up somewhat. The study, furthermore, states that online retailers are still continuing to adapt to the continuous changing environment that the Covid-19 outbreak causes. Digital Commerce 360 has a Top 100 list of retailers based on their global e-commerce sales and as of March 23, 62 of the retailers from the list have closed physical stores due to the pandemic.**

Index Terms **- E-Commerce, pandemic, customer, covid.**

INTRODUCTION

The worldwide spread of the COVID-19 pandemic has disrupted how people buy products and services and how they perceive e-commerce. The standardized lockdown rules across India and the growing hesitation among consumers to go outside and shop for essential goods have tilted the nation towards e-commerce. Consumers have switched from shops, supermarkets, and shopping malls to online portals for the purchase of products, ranging from basic commodities to branded goods.

India's e-commerce industry will grow 84 per cent to $111 billion by 2024 as it gains from demand created by the coronavirus pandemic's impact. The 2021 Global Payments Report by World pay FIS, a financial technology product and services provider, tracked trends in 41 countries to find that digital commerce accelerated during the pandemic. India's e-commerce market will be driven by mobile shopping, projecting it to grow 21 per cent annually over the next four years. Digital wallets (40 per cent) followed by credit cards (15 per cent) and debit cards (15 per cent) were the most popular payment methods online in 2020. According to IBEF (India Brand Equity Foundation), the market opportunities for online commerce in India are expected to touch $200 billion by 2026 from $30 billion in 2017. The report also states that the Indian e-commerce industry is expected to overtake its US counterpart to become the second-largest market for e-commerce in the world by 2034. The researcher analysed the impact of Covid – 19 on E-Commerce in Sivakasi Taluk of Virudhunagar District.

SCOPE OF THE STUDY

- This study is to have a clear incite about the impact of COVID-19 on e-commerce market in Sivakasi.
- This study finds out the important factors, which influence the effective use of e-commerce. The study has also identified various problems faced by the e-commerce customer in the study area and offer suitable suggestions.
- The study has been confined to Sivakasi Taluk of Virudhunagar District in Tamil Nadu.

REVIEW OF LITERATURE

"Ashok Panigrahi, Ranjan Upadhyaya, Pramod Raichurkar", 2016 in their research paper "E-commerce Services in India: Prospects and Problems" found that India is showing tremendous growth in E-commerce and the future does look very bright for E-commerce in India. They suggested that India needs to promote E-commerce business to develop rural India by developing effective communication to map value

In silico and biological exploration of greenly synthesized curcumin-incorporated isoniazid Schiff base and its ruthenium complexes

Original Research | Published: 03 October 2022
Volume 34, pages 1115–1132, (2023) Cite this article

Structural Chemistry

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Porkodi Jeyaraman, Samuel Michael, Raman Natrajan & Anto Arockia Raj Adaikalam

Abstract

In the present investigation, ultrasound-mediated three Knoevenagel condensates have been prepared from biologically active curcumin and different aldehydes. Curcumin Schiff bases have been prepared by reacting these Knoevenagel condensates with isoniazid. Ruthenium Schiff base complexes are synthesized and octahedral geometry of these complexes are confirmed by various analytical techniques like elemental analysis, molar conductive measurements, and spectroscopic techniques like UV–Vis, FT-IR, NMR, EPR, and ESI mass. Moreover, optimized geometry and DFT calculation have been done using Gaussian 09 W software and the quantum mechanical calculation of these complexes is also performed. Pharmacokinetic behavior of the synthesized compounds is examined using SWISS ADME, PASS online, and molinspiration online software. Based on this, in vivo and in vitro pharmaceutical investigations are carried out and it is found that all the complexes possess potent biological activity than the ligand. All the synthesized compounds are docked against 1BNA and 4fm9 colon cancer receptors. Interestingly, intercalative binding efficacy of the synthesized compounds is confirmed by using UV–visible absorption titration and viscosity measurements against CT-DNA.

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Industrial crops in India for using an emollient – A review

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Abstract

India is one of the world's seventeen mega-biodiversity countries. In India have seventy percent areas covered by more than 45,500 plant species and nearly 6500 native species which are still used in the health care products by traditionally. More than 53 plants were used for an emollient which were reported by various researchers. The 53 plant species with have emollient properties belongs to the twenty three different families. Especially, more than 19 plant entire parts with emollient property. The present review discussed the plants with emollient properties and cultivation status in India.

Keywords: Plants; Emollient; moisturizer; NMFs; Cosmetics; Indigenous plants

Introduction

Emollient is used as moisturizer to treat the skin dryness, scaly, irritation, skin itchiness etc. Our human body covered by skin approximately 1.7m2 for control the water loss crated by various environmental and physical factors. Water dehydration creates the skin dryness, scaly, irritation, rashes, skin itchiness and sometimes skin burns. Human body obtained naturally Sebum, stratum corneum intercellular lipids, and natural moisturising factors (NMFs) are compounds that regulate the evaporation of water by environmental conditions. Environmental factors such as

INFORMATION LITERACY SEARCH SKILLS OF CBSE SCHOOL STUDENTS IN DINDIGUL DISTRICT TAMILNADU

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ABSTRACT
This study aimed to collect information on CBSE secondary school students' search skills. This study displays and elaborates on analysing information literacy search skill among school pupils, learning about users' favourite search engines, and determining if the school librarian provides introductory library sessions. The results also show that many students use Google search engines to refresh their knowledge more frequently than others, indicating a dearth of search proficiency among school pupils. The current study argues that librarians should help students enhance their information literacy abilities not only in the cluster of schools engaged in this paper, but also in schools across India and elsewhere.
Keywords: Information, information literacy, search skills, CBSE, school students.

INTRODUCTION
The ability to identify, access, search for, assess, and apply information in a variety of circumstances is known as information literacy (IL) (ALA, 1989). For students to efficiently sift through and select pertinent and trustworthy information that they obtain from the Internet, television, newspaper, and other sources for their academic work, they must be information literate. Understanding IL's educational impact and, consequently, its efficacy in equipping our children with future-ready abilities, as well as studying methods to improve it, are crucial.
Additionally, only a tiny percentage of pupils would be able to create effective search strategies utilising Boolean operators, evaluate the reliability of a source, and distinguish between citations and reference sources (Lad brook and Prober, 2011). Universities and other educational institutions serve a crucial role in the training and development of human resources, and the libraries and information centres inside these institutions play a crucial part in the growth of information.
students' literacy abilities Information literacy is defined by CILIP (2005) as understanding when and why information is needed, where to look for it, and how to evaluate, use, and share it ethically.
Thus, an information literate person must have an understanding and know when:Information is needed

- How to find information
- The need to evaluate results
- How to work with or exploit results
- Ethics and responsibility of use
- How to communicate or share your findings

Understanding information literacy requires that one recognises a need for information and that information is required, why information is required, what and how much information is required, what type of information is required, any associated time, access, or other constraints, as well as the knowledge that information is available in a variety of formats in various other media.

SCOPE OF THE STUDY
The purpose of this study was to investigate the use of information search skill by theschool students of Central Board of Secondary Education School Libraries in Dindigul city, Tamilnadu. The samples of this study were covered 25 students in each school.
If specifically focused on the following objectives:

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Intrusion detection and prevention in Cloud using Edge intelligence

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Abstract. Cloud computing is a booming technology used by IT organizations since it provides all types of services based on pay per use model. Security and privacy is the major concern of clouds. IoT devices are resource constrained devices, and are unable of securing and defending themselves, and can be fluently negotiated and compromised. Thus, it is important to take up proper schemes for authentication and control access to assure the overall security for IoT devices, their communications, and their data. Accessing the IoT devices using cloud is increasing. Also the authentication scheme must be reliable, scalable, and secure against known attacks and threats. Cloud and IoT need to follow stringent security mechanisms to detect its anomalies. Intrusion detection system (IDS) is used to analyse the intruder attack on the cloud. We emphasise the use of anomaly based intrusion detection techniques to prevent the intruder attack. Edge intelligence is the combination of AI and Edge Computing; it enables deployment of machine learning algorithms to the edge devices where the data is generated. It has the potential of providing artificial intelligence to any person and every organization at any place.

Keywords. IoT, Authentication, Cloud, Security, IDS, Edge Intelligence, Edge Computing

1. Introduction

Authentication is the process of certifying an identity by which a set of given credentials are checked against stored data in a database or authentication server [1]. The various threats to cloud are by attacks such as Denial of Service, Distributed Denial of Service, network sniffing, cross-site scripting, IP spoofing, man-in-the-middle attack

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REVERBERATIONS IN INDIAN ECONOMY POST COVID-19

Dr Rajani B Bhat
Dr Anu L

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Investigation of COVID-19 impact on mental health and lifestyle pattern of adolescents

Jeevarathinam A.[18], *Dr. M. Kannan*[19]

Abstract

COVID-19 was caused by coronaviruses, a group of viruses belonging to the family of Coronaviridae. In March 2020, COVID-19 was declared a pandemic by World Health Organisation (WHO), leading to a lockdown globally. During the global lockdown, the government restricted people's movements and instructed them to stay home safely. This social distancing hindered the existing human relation. The lockdown also severely affected the food security, education, employment, physical and mental of the population worldwide. As the lockdown measures begin to ease, there is a requirement to understand people's experiences during the lockdown period. The research aims to examine the effect of COVID-19 on daily life, mental health and the education of college-going adolescent boys and girls. Globally, adolescents may appear less at risk for COVID – 19 symptoms, but the pandemic period disturbed their life in another way. This study is quantitative. The questionnaires were prepared to collect data from college students (both boys and girls) to understand the effect of COVID - 19 pandemic on the well-being of their mental health and lifestyle through online mode. The study result revealed that the pandemic negatively impacts adolescents' education, mental health, and lifestyle. This study also helps to understand lifestyle modifications in adolescents' lives. It also revealed the factors that influence adolescents' anxiety, fear, and stress. The study results suggested a need to develop preventive measures to address adolescents' mental health.

Keywords: Adolescents, COVID-19, Mental health, Physical activity

Introduction

COVID-19 originated in Wuhan, China, and as the prevalence of human-to-human propagation intensified, the World Health Organization (WHO) declared

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Isolation and purification of phycocyanin pigments from *Spirulina* sp. biomass and evaluation of its anticancer and antioxidant potential

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Biomass Conversion and Biorefinery

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Shunmugiah Mahendran, Subbiah Sankaralingam, Pandiaraj Maheswari, Pandian Annalakshmi, Jeyaraj Pandiarajan, Parthasarathy Seethapathy, Balasundaram Harinathan, Selvam Palpperumal, Natarajan Yasothkumar & Sakthivel Venkatesh

Abstract

The occurrence of various diseases like cancer, cardiovascular, aging, and other associated problems are due to the frequent consumption of carcinogenic chemicals added food along with related activities. Our present investigation is focused on anticancer and antioxidant profiling of phycocyanin pigments isolated from *Spirulina* sp. The candidate species was identified by 16S rRNA analysis and the pigment was extracted through lysozyme enzyme treatment. The purification of pigment was performed by ammonium sulfate precipitation, dialysis, and DEAE-Cellulose-52 chromatography using an acetate buffer at pH 5.10. The in vitro antioxidant and antibacterial activity of phycocyanin exhibited proficient scavenging role. MTT assay revealed that the phycocyanin flaunted anticancer activity against HeLa cells (human cervical cancer cells). The physiochemical characterization of phycocyanin was done through TLC, FT-IR, and GC-MS to reveal the structural backbone of biomolecules. These findings introduce phycocyanin extracted from *Spirulina* as a potentially useful anticancer and antioxidant agent and can also provide a new path for the future researchers to combat diseases such as cancer and cardiovascular.

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JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

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MAHATHMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME AND EMPOWERMENT OF RURAL WOMEN IN SRIVILLIPUTTUR TALUK

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**** Dr. J. Vimal Priyan, Head, Department of Commerce (CA) SF, V.H.N.S.N College, Virudhunagar, Tamilnadu, India**

Abstract

Poverty and unemployment are two acute problems common to most of the countries. India is not an exception in this regard. Attainment of higher economic growth is not possible without efforts at employment generation and income augmentation. The population of India is more vulnerable due to socio-economic backwardness. Due to lack of adequate gainful employment opportunities they become excessively dependent on agricultural sectors which add further fuel to the fire. India has a long history of work fare schemes, in which the central and state government works towards livelihood security in rural areas by providing employment. The country's previous policies and employment schemes outreaches and fails to address the issues and have no significant impact so far. Therefore, the world's biggest Employment Guarantee Act aimed directly for improving rural livelihood is Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). In the study area, women workers are benefitted individually under this scheme because they are able to earn independently, spend some money for their own needs, contribute in family expenditure etc. They are also unaware of the scheme. If the Government Authorities take initiates to develop the scheme, women workers are highly interested to work under this scheme.

Keyword : Employment, poverty, rural areas, household business

Introduction

In India, there are still illiterate and poor village women financially dependent on their family members, even though they are hardworking and have their own abilities to be financially self-dependent. Still, they are denied a decent and deserving job and financial support to start their own household businesses. Poverty and unemployment are two acute problems common to most of the countries. India is not an exception in this regard. Attainment of higher economic growth is not possible without efforts at employment generation and income augmentation. The population of India is more vulnerable due to socio-economic backwardness. Due to lack of adequate gainful employment opportunities they become excessively dependent on agricultural sectors which add further fuel to the fire. India has a long history of work fare schemes, in which the central and state government works towards livelihood security in rural areas by providing employment. The country's previous policies and employment schemes outreaches and fails to address the issues and have no significant impact so far. Therefore, the world's biggest

Mathematical Statistician and Engineering Applications
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MHD Mixed Convection from a Horizontal Plate Embedded in a Porousmedium with a Convective Boundary Condition

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Article Info
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Abstract
The heat and mass transfer from a horizontal plate embedded in a porous medium experiencing a first-order chemical reaction and exposed to a transverse magnetic field was studied using an analytical approach. A convective boundary condition is used instead of the commonly used conditions of constant surface temperature or constant heat flux, making this study unique and the results more realistic and practically useful. The momentum, energy, and concentration equations are solved analytically and thoroughly tested as coupled second-order ordinary differential equations. Graphic representations of the effects of Biot number, thermal Grashof number, permeability parameter, Hartmann number, Eckert number, Sherwood number, and Schmidt number on velocity, temperature, and concentration profiles are provided. The local temperature is proportional to the temperature of the plate surface.

Keywords: local skin friction; MHD flows; Horizontal plate.

Article History
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Revised: *25 October 2022*
Accepted: *14 November 2022*
Publication: *21 December 2022*

1. Introduction

The study of hydromagnetic boundary layer flow with heat and mass transfer over a vertical surface embedded in a porous medium is important in many engineering situations, such as concurrent buoyant upward gas-liquid flow in packed bed electrodes [1, 2], sodium oxide-silicon dioxide glass melt flows [3, 4], reactive polymer flows in heterogeneous porous media [5, 6], electrochemical generation of elemental bromine in porous electrode systems [7, 8], and the manufacture of intumesc Moreau's book [6] contains a comprehensive survey of magneto-hydrodynamic studies and their technological applications. Several interesting computational

Modified Leader Algorithm for Under-Sampling the Imbalanced Dataset for Classification

S. Karthikeyan & T. Kathirvalavakumar

Conference paper | First Online: 27 August 2021

Part of the Lecture Notes in Networks and Systems book series (LNNS,volume 213)

Abstract

Data classification with a standard classifier automates the manual classification process in many fields. In a two-class dataset, when the number of samples in one class is more in number than the other class, namely, imbalanced, then the performance of a classifier gets degraded due to the limited availability of the training instances in a particular class. To overcome the problems with the imbalanced datasets, a new under-sampling method has been proposed with the baseline idea of an incremental clustering technique. Clusters are formed from the sum of features of the instances instead of finding distance between patterns. Representatives of the clusters are average of the instances of the cluster. Proposed algorithm has the ability to solve the problems than the existing under-sampling approaches with k-means algorithm and leader algorithm. The results produced through the proposed algorithm work better during the classification with good accuracy and reduced misclassification rate in both major and minor classes.

Keywords

Imbalanced data | Under-sampling | Incremental clustering | Leader algorithm

Microchemical Journal
Volume 183, December 2022, 107959

Molecular imprinting synthetic receptor based sensor for determination of Parkinson's disease biomarker DJ-1

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Environmental Research
Volume 206, 15 April 2022, 112282

Nano Ag@bioactive microspheres from marine sponge *Clathria frondifera*: Fabrication, fortification, characterization, anticancer and antibacterial potential evaluation

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NEED FOR PERSONAL FINANCIAL PLANNING – A STUDY AMONG THE YOUTH OF VIRUDHUNAGAR TOWN

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ABSTRACT

According to the study of the Technical Group on Population Projections, 2020, established by Ministry of Health and Family Welfare, the youth population in India comprises 27.2% of the country's overall population in 2021 and 23.2% of the population in Tamilnadu. The capability of the youth to accumulate assets and save money is extremely important in the age range of 20-30 years, as they move towards their adulthood age and begin to accept their financial obligations and determine their long term financial goals. Unfortunately, a lot of youth lack formal or informal guidance with regard to financial matters. As a result, they might not be ready to make wise financial decisions. Therefore, financial capability is much crucial as youth are increasingly facing higher levels of debt. Lack of proper personal financial plan for the future creates the risk of not having enough money to live and retire comfortably and safely. Lack of financial stability brings stress and strain and lowers the standard of living. However, the male and female youth population in India have distinct financial goals, which create the need for different methods towards the components of personal financial planning in order to achieve these goals. The components of the present study include budget preparation, investment planning, debt management, saving-spending management, insurance planning and tax planning. The disparity in current financial situation in relation to all of these factors clearly shows that in order to build wealth, the male needs support in managing his funds, while the female must engage in high-risk, high-return investment opportunities. This shall help the financial planners and individuals to understand well that a common personal financial plan irrespective of the gender will not result in the accomplishment of financial goals and so there arises a need for separate and different personal financial plans for both male and female youth of Virudhunagar.

Key Words: Finance, Money Management, Personal Financial Planning, Savings, Virudhunagar, Youth.

Environmental Research
Volume 212, Part A, September 2022, 113185

Noble metal nanoparticles (M_x = Ag, Au, Pd) decorated graphitic carbon nitride nanosheets for ultrafast catalytic reduction of anthropogenic pollutant, 4-nitrophenol

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ONLINE SOCIAL BOOK MARKING IN USING LIBRARY

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Dr. **G. Amudha, *Librarian VHNSN College, Virudhunagar*

Abstract

The future of the education system will restructure through information communication technology (ICT), whic comprehensive approach to innovate education systems, methods, and management. The new paradigm of ICT in edu is smart services, which enhances the education efficiency, effectiveness, and productivity. This article explores the conn of social book marking and tagging. Online Social book marking helps librarians, not only in providing the library p with better and faster access to information but also with more reliable and well-organized information. Article sho uses of online social book marking in library, what is bookmarking and tagging, advantages of these technological

Keywords: Social Bookmarking, Tagging, Deliious, Library book marking, Web 2.0,

Introduction

Wikis, blogs, and RSS feeds are known and used widely. Now there's another hot Web-based tool for academic use called Social bookmarking. Social bookmarking allows multiple users to save their favourite sites, articles, and even podcasts on the Web-instead of saving it inside your browser it makes them accessible from home, academic library, or anywhere with Internet access. It's quickly becoming a popular way for faculty and students to store, classify, share, and search links, all of which are gathered by many users.

What is Social Bookmarking?

Everyone have their favourite websites that are used frequently or may find some websites very useful that they wish to save for future reference. It is a known fact that the lengthy and complicated URL addresses need not be written down in a traditional way. In order to save that link or address, the practice followed is to save the links in one's own browser. With traditional bookmarking within a web browser, one of the restrictions faced is the bookmarks in the computer can only be accessed by the particular user. It takes a meticulous process to share the bookmarks and resources with others. One of the methods of sharing like emails are inefficient as it takes time and energy of the sender. This is where social bookmarking takes saving websites to the next level. Social bookmarking has developed as a social software tool that allows users to submit, classify, localise and share their bookmarked web pages to a central site where they can be located and 'tagged' by other users. It is a process that is used by people to organise, arrange, maintain and reserve links on website pages. Tags then provide the user the ability to insert keywords to distribute content to other sites on the internet.

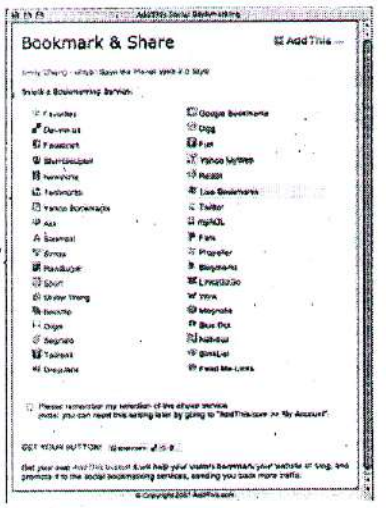
The Educational Benefits of Social Bookmarking

Recently, social bookmarking has become very popular in education. Many teachers complete and handout reading lists for students to use in their assignments; this would be simplified and made more accessible by using a link to an online version of the teacher's preferred lists electronically through a social bookmarking site. Similarly, staff can create an electronic bank of researched and, more impor reviewed and verified web links for students to acces a VLE or the institution's website central to an insti library or learning resource. So what makes this t bookmarking unique? What are the advantages of th how can it help the process of teaching and lea Considering the tiresome experiences encountered in s a recommended reading list to your students and findi some of the resources are no longer available, bookmarking would be a better process to f Recommended online resources in course booklets, by of the dynamics of the Internet, are often no available. This is both frustrating for the teacher a students. Bookmarking can solve this problem.

Making Social Bookmarking Easy

Add This

Add This is a free tool that allows websites and to spread their content across the web by making for visitors to bookmark and share content to their fa social bookmarking tools. It also has analytics to hel understand how and where their content is being s Most websites and blogs now have social bookm buttons often at the bottom of their sites, to easily your favourite tool or multiple tools.



OPINION OF ENTREPRENEURS ABOUT DIGITAL MARKETING
(A study with special reference to Virudhunagar district)

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Introduction

Marketing refers to any activities that a company uses to promote its products and services to improve its market share. In order to be flourishing, marketing requires a mixture of advertising savvy, sales, and the skill to deliver goods to end-users. Traditionally, companies focused on marketing through print, television, and radio. Although these options still present today, the increase of the internet led to a move in the way companies reached consumers. Hence digital marketing came into play. Digital marketing became trendy with the advent of the internet in the 1990s. Entrepreneurs shape the economy by creating new wealth and new jobs and by creating new products and services. One of the major objectives of developmental policies in India is to provide employment to millions of unemployed rural youth. Hence this study attempts to analyse the opinion of entrepreneurs about digital marketing.

Key words: Digital marketing, Entrepreneurs, Digital marketing channel

Introduction

Marketing refers to any activities that a company uses to promote its products and services to improve its market share. In order to be flourishing, marketing requires a mixture of advertising savvy, sales, and the skill to deliver goods to end-users. Traditionally, companies focused on marketing through print, television, and radio. Although these options still present today, the increase of the internet led to a move in the way companies reached consumers. Hence digital marketing came into play. The term digital marketing refers to the use of digital channels to promote products and services in order to get in touch with consumers. It involves the use of websites, mobile devices, social media, search engines, and other similar channels. Digital marketing became trendy with the advent of the internet in the 1990s.

Entrepreneurship refers to the act of setting up a new business or reviving an existing business to take advantages from new opportunities. Thus, entrepreneurs shape the economy by creating new wealth and new jobs and by creating new products and services. One of the major objectives of developmental policies in India is to provide employment to millions of unemployed rural youth.

Photocatalytic Dye-Degradation and Antibacterial Activity of Undoped and Fe Doped Cd_2SnO_4 Nanoparticles towards Environmental Applications

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Abstract

The chemical precipitation approach, which uses KOH as a reducing agent, was used to synthesize the undoped and Fe-doped Cadmium stannate (Cd_2SnO_4) nanoparticles. By using X-ray diffraction (XRD) analysis, the structural characteristics of the synthesized nanoparticles were investigated. By using a field emission scanning electron microscope (FESEM), UV-Visible (UV-Vis), and Photoluminescence (PL) analysis, surface morphological and optical properties were examined. The degradation of Methylene Blue (MB) in the presence of Cd_2SnO_4 and Fe-doped Cd_2SnO_4 nanoparticles as photocatalysts has been reported for testing photocatalytic activities. Fe-doped Cd_2SnO_4 and Cd_2SnO_4 nanoparticles have been shown to

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Pharmaceutical Nanobiotechnology for Targeted Therapy pp 281–312 | Cite as

Porphysomes and Porphyrin-Based Nanomaterials for Drug Delivery System

Arumugam Murugan, Pon Janani Suguman, Chunchana Kuppe Renuka Prasad Ravikumar, Natarajan Raman, Hardeo Singh Yadav & Ponnusamy Thillai Arasu

Chapter | First Online: 19 October 2022

Part of the Nanotechnology in the Life Sciences book series (NALIS)

Abstract

Porphyrin is an organic molecule with the properties of protracted electronic structure with π-conjugation, extreme molar absorption to near-infrared spectrum from the visible region, supreme oxygen quantum yields with singlet state, and chemical flexibility. The nanoparticles of porphyrin and its derivatives have been developed for drug delivery systems which are one of the popular fields in pharmaceutical chemistry. Porphyrin nanomaterials condensing to different drug delivery variables have been utilized to enhance delivery features due to the properties that allow immune tolerance, specific targeting, better hydrophilicity, and lengthy tissue lifetime. This chapter has reviewed the drug delivery properties of nanomaterials of porphyrin with biological applications for photodynamic treatment.

Keywords

Nanomaterials Porphyrin Inorganic Porphysomes Drug delivery Self-assembly

Portrayal of Female Characters in Tim Winton's *The Riders*

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Abstract:

Tim Winton is an Australian writer who loves to explore the concept of masculinity and femininity in a world where the idea is being reinvented. In portraying his characters, hecontradictstypicalideologieslurking behind gender and family relationship roles. *The Riders* is a novel that conveys contradictory messages about women.This research paper focuses on the portrayal of the female characters in *The Riders* and to move further with this theme, the Australian social and cultural context has also been taken into consideration. The purpose of this research paper is to analyse the three female characters with a view to identify the messages on femininity conveyed in the novel.There is an insight into gender in a world where men can cry and women can have a life that theyprioritize over maternal roles.

Keywords: stereotypes, identity, patriarchal society, female ambiguity, disappearance

Tim Winton is an Australian writer whose male characters often challenge the traditional idea of masculinity. This research paper focuses on the portrayal of the female characters in *The*

Production, characterization, and feed supplement applications of phytase enzyme from *Aspergillus tubingensis* isolated from Western Ghats soil

Original Article | Published: 09 June 2022
(2022) Cite this article

Biomass Conversion and Biorefinery

Aims and scope →

Submit manuscript →

Shunmugiah Mahendran, Subbiah Sankaralingam, Pandiaraj Maheswari, Ramsingh Raja Dhivya, Durairaj Kathiresan, Santhanakrishnan Karthikeyan, Subramanian Sivasangari Ramya, Parthasarathy Seethapathy, Balasundaram Harinathan & Selvam Palpperumal

Abstract

The present investigation is designed for the characterization and application of phytase from *Aspergillus tubingensis* by solid state and submerged fermentation techniques practice. Different parameters such as carbon source, nitrogen source, pH, mineral concentration, temperature, inoculum size, and inducer concentration were employed for the optimization of phytase and the maximum production was recorded in optimum condition. Afterwards, it was carried out for purification process by column chromatography using Sepharose gel extraction. Then, the enzyme was blended with fish feed at varying concentrations and their results showed that the phytase acted as an important growth factor for the growth improvement of fish. It was concluded that the phytase from fungal origin has played an important role to stimulate the fish growth without any side effects or any other complications. Hence, the upcoming research works should focus on the improvement of fish feed production with high quality achieved by low cost to increase our economic value.

UGC CARE LISTED, JOURNAL OF THE ASIATIC SOCIETY, ISSN.0368-3308

Echoes of Anguish and Resistance of Women in Postcolonial Writing

Vol. LXII No.2 2022

Editors
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THE ASIATIC SOCIETY
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Psychological Torment of Sethe in Toni Morrison's *Beloved*

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Postcolonialism can be considered as the aftermath of colonialism or a study of an impact that colonialism has left in a society or in an individual's mind.Slavery was predominant in America in the 17th and 18th centuries people were kidnapped from the continent of Africa, forced into slavery in America and exploited to work as indentured servants and labor in the production of crops. It was mainly dominant in the Southern part of America where umpteen numbers of slaves were employed in different parts of a white household. Many escaped the clutches of slavery and ran towards the North where there was tolerance and freedom. Only a very few succeeded in their journey with great a struggle.

The novel *Beloved* by Toni Morrison deals with slavery and its aftermath through distinctive characters. Toni Morrison focuses more on mental trauma that a slave undergoes in his/her treatment. Slavery can haunt a person's mind forever. The character Sethe from *Beloved* is an excellent example of that. She was mentally traumatized by some events that happened in her life. When she was a slave, she was abused sexually, and she was nearly beaten to death by her owner which left a scar which never healed both in her body and in her mind. As the novel progresses we can see the traces of slavery haunting her mind and her suffering in accordance to her past life as a slave.

Algal Research
Volume 64, May 2022, 102693

Quorum quenching action of marine red alga *Halemenia durvillei* on biofilm forming Gram negative bacterial isolates from contact lens

R. Boominathan [a], Sandhanasamy Devanesan [b], Mohamad S. AlSalhi [b], A. Balasubramanian [a], Isam Zuhair Alkhalid [c], Parameswari Paul [e], A.J.A. Ranjit Singh [d]

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Issue 18, 2022

Previous Article | Next Article

From the journal:
New Journal of Chemistry

Rational design of ruddlesden–popper phase Mn_2SnO_4 for ultra-sensitive and highly selective detection of chloramphenicol in real-life samples

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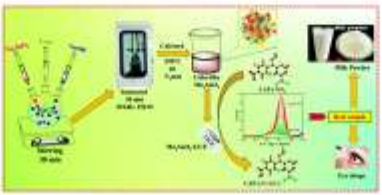
Author affiliations

Abstract

A novel metal stannate (Mn_2SnO_4) nanocube electrocatalyst with an outstanding sensing capability and electrochemical properties is established by an ultrasonic assisted technique. A variety of physicochemical and electrochemical methods were used to characterize the structural, surface morphological and electrochemical properties of Mn_2SnO_4. We then observed the analytical behaviour and applications of Mn_2SnO_4/GCE for the determination of chloramphenicol (CAP) by using various voltammetric techniques. The effects of the experimental conditions, such as the amount of modifier, sample concentration, scan rate and pH, on the peak current of CAP were studied. The proposed Mn_2SnO_4/GCE sensor shows a higher cathodic current in response to a wide dynamic linear range of 0.04–437.18 μM and superior electrocatalytic activity with an appreciably lower detection limit (0.0194 μM) and good sensitivity (0.1648μA μM^{-1} cm^{-2}), which were determined from differential pulse voltammetry (DPV). The practical applicability, such as repeatability, stability and reproducibility towards CAP, exhibits acceptable results. Consequently, the as synthesized Mn_2SnO_4 modified sensor might be a potential candidate for the determination of CAP in milk powder and eye drop analyses and the results are noticeable.



Separation and Purification Technology
Volume 303, 15 December 2022, 122298

Rational design of single tungsten/cobalt atom oxide anchored on the TiO_2-rGO: A highly efficient electrocatalyst for water splitting and photocatalyst for decomposition of pharmaceutical pollutant

Karuppaiah Selvakumar [a], Tae Hwan Oh [a], Yueshuai Wang [b], Antony Muthu Prasanna [c], Muthuraj Arunpandian [d], Thangarasu Sadhasivam [a], Ponnusamy Sami [c], Meenakshisundaram Swaminathan [d]

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REFLECTIONS ON INDIAN YOUTH IN CHETAN BHAGAT'S WHAT YOUNG INDIA WANTS

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Abstract
The strength of India is primarily dependent upon its youngsters and their capabilities. They are believed to be the pillars of the future of the nation. It is possible only if they are brought up with good morals and ideas. With the increasing number of educated people in India, It is evident that the country would prosper. It is the educated youth who determine the advancement of India. Not all educated youth are wealthy; many of them struggle without jobs, and many are immersed in the internet for pastime and engage in wrongdoing. This exposes them to plenty of stress at an early age.There are two different types of people living in modern India, followers of tradition and followers of Western culture that value the heritage of India. This paper explores the lifestyles of young people and also gauges the transition of an individual into an active adult citizen of the nation from the perspective of ChetanBhagat'sWhat Young India Wants.
Keywords: *Indian education, unemployment, corruption, responsibility*

The strength of India is primarily dependent upon its youngsters and their capabilities.Their skills have become indispensable to other countries as well. The westerners are interested in preferring the youth of India for vital responsibilities in other countries and for leadership in offices there.Foreign nations try to recruit talents of their youngsters as India does, to ensure the prosperity and future of their nation. The rise of Indians did not happen overnight, they have achieved this developmentby following the good principles of many leaders.Swami Vivekananda, who has played a major role in the development of the youth of India, eloquently said, "Youth is the best time.The way in which you utilize this period will decide the nature of coming years that lie ahead of you" (life11.org).ChetanBhagat, in his book *What Young India Wants*, explores the lifestyle of youth in India and the problems faced by them.

Education is a vital and a basic need for people from all walks of life. All young people must realizethe importance of education. There are also those who go to western countries for education. Children and young people should have access to quality, only then the needs of the country could be met. Gandhi said that villages are the backbone of the country. Similarly, the progress of the country will gradually progress only when the rural youth also get proper education. A lot of money is spent on education. But the question of quality education also arises. This is why rich people send their children to study abroad. There is corruption in education in India. Because of this, there are talented young people who are unable to cope with the corruption in education and sports. Bhagat describes, "When you have corruption in education, you have potholed minds. We are destroying an entire generation by not giving it access to the world-class education it deserves" (126). Indian youths long for world-class education. Only then they think that the needs of the country could be met. Even if the new education policy comes into existence, they expect free education without corruption. Colleges should also be in the hands of good people. Bhagat explains, "Good people must be incentivized to open colleges" (126).

Today's youth are really confused about which policy to follow and which leader to follow. There are different religions in India. Each religion has its own specialties. Each religion has different sects, which is what Bhagat compares, "there are many Indias within India" (4). The youth want freedom. It also could be discussed as the influence of western culture, but they also on the other

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ROLE OF KAIVALYA SCHEME IN KOTTAYAM AND IDUKKI DISTRICTS OF KERALA WITH SPECIAL REFERENCE TO DIFFERENTLY ABLED SELF EMPLOYED

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Abstract

Differently Abled Persons constitute around 3.4% of the population of Kerala. Isolated by the main stream, these people lack education, don't have regular employment and mostly below the poverty line. Living with disability limits a person in actively participating in economic and social activities. These barriers restrict them to compete equally with others in the society, especially in the case of employment. Right to Equality is a Fundamental Right under the Constitution of India. So, it is duty of the Government to enrich these Differently Abled Persons and bring them at par with rest of the society. Govt. through its various schemes tries to develop this socially excluded minority group. Persons with Disabilities Act was passed by the Parliament in December 2016, for the upliftment of Physically Disabled Persons. Majority of the disabled population in the state lives in poverty. Self-employment is the best solution to uplift them socially and economically. In this paper the researchers evaluate the performance of Kaivalya scheme, the self-employment scheme for differently abled by the Govt. of Kerala.

Key Words

Self-employment, Differently-abled, Kaivalya scheme, Entrepreneurship

1.1 INTRODUCTION

The first announcement to protect the rights of people with disabilities, and prevent their exploitation was issued by Kautilya during the Maurya dynasty between the 4th and 5th centuries. The ancient Greeks and Romans viewed the disabled population as a burden on society and were treated atrociously. They even killed disabled babies. They believed that the disability is due to the wrath of God, so these individuals should be

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RELATION BETWEEN RESOLVING SET AND DOMINATING SETS IN VARIOUS GRAPHS

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Abstract

In a graph $G = (V, E)$, the code of vertex v with respect to the ordered set $W = \{w_1, w_2, w_3, \ldots, w_k\} \subseteq V(G)$ is defined by $C_w(v) = (d(v, w_1), d(v, w_2), d(v, w_k))$. The set W is so-called a resolving set for G if different nodes have different codes with respect to W. A resolving set having a minimum number of nodes is a minimum resolving set or a basis for G. The (metric) dimension $G = (V, E)$. is the quantity of nodes in a basis for $G = (V, E)$. In this

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SEXUALITY, ALTERNATING GENDER INCONGRUITY AND TRAUMATIC EXISTENCE: A COMPARATIVE STUDY OF LAXMI'SME HIJRA *ME LAXMI AND LIVING SMILE VIDYA'SI AM VIDYA*

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Abstract
In Indian society transgender is viewed as a menace. Though in the past they acclaim reputable and reputed positions, their present status is in the extinct of existence. They suffer because of ostracism, oppression and hypocritical untouchability. Recently, in literary spaces there a few transgender personalities who pen their traumatic and suffocating experience of existence through their autobiographies. It has attracted the international attention for preserving and upholding their rights. Vidya and Laxmi are the Hijras from two different parts of India the former from Tamilnadu and later, Maharastra. They have penned their life stories in the form of autobiographies entitled as I am Vidyaand Me Laxmi me Hijra. They talk about their trials and tribulations in Indian society through their writing. Apart from Me Laxmi, Me Hijra, Laxmi also penned Red Lipstick. This paper is a form of exploration into the life of the transgenders in Indian society. This analysis is a comparative study of the life of two transgenders which can have universal appeal.
Keywords: *Transgenders, Discrimination, Androgynous, cross dressing.*

Globalization has vehemently impacted on the life of people and invariably changed the modes of living, belief system and social access. Even our identities are forged. People have become more materialistic and have built castles around them. The face to face communication is diminished and the technological gadgets have replaced the traditional ways of human communication. Technology has improved and impoverished the standard of living. Even in such times there are some discrimination on the basis of caste, gender, race, class, an etc.

In India it is very common to notice beggars in the streets and ostracism of people based on caste, religion, gender class and race. There are ample evidences whereby one can witness some men in women's attire are begging in the bazars by clapping their hands, sometimes they call men for sex work, sometimes they fight among themselves and sometimes they are assaulted. These people form the part and parcel of our society but their very existence is threatened and their existential rights are derived by the general public due to their gender binary nature. They are identified as transgender. "Transgender" is a term, used to denote a person whose sense of gender identity or physique may not coincide with their sex, assigned during their birth. Transgender often shortened as "Trans" is an umbrella term, which includes gender binary persons—transmen, transvestites, cross dressers, transsexual. The term transgender was coined by Virginia Prince, a pioneer in the cross dresser movement in United states in 1970. Beasley, in this connectionobserves: " The term transgender refers to those who reject their socially assigned gender and refuse to place themselves in men and women gender binary"(4). Transgender reject their

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SHAPING THE FITNESS VISION OF INDIA THROUGH DANCE

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ABSTRACT

Reading is to the mind, what dance is to the body. Dancing regularly is rewarding the body with the release of feel-good Endorphins and strength. Dance and healthy eating can help make our life more diverse and interesting. People often seek creative ways to be physically active and remain healthy in their daily life. To get out of the boredom of daily routine one should stop sticking to the same exercise routine all the time. Throughout multiple lockdowns, many people had to adjust to how and where they dance and exercise. From this, a new mental notion that one can dance, and exercise anywhere has continued to rise. The fitness mindset that craves flexibility and convenience is apparent as well as the awareness that fitness can be for everyone. Exercise includes various forms of activities like running, cycling, swimming, dancing, sports and yoga. This article focusses on the various forms of dance fitness routines which have taken avatar in recent times.

Keywords: Stress Reliever, Endorphins, Dance Movement Therapy (DMT), Mood Swings, Depression

Stress is the foremost culprit in numerous health issues in recent decades. It is the physical and mental response of our bodies to life's challenges. Overcoming stress and leading a stress-free life is the prime task in this modern world. Yoga, Meditation and Aerobic workouts have gained popularity in recent times as they prove to be effective stress reducers. Another recent development is the Dance therapy which has come to vogue. Dance has the magical ability to eliminate and reduce stress from everyday life. Dancing is the most refreshing and effective way to mitigate stress. This paper endeavours to create awareness on Dance fitness as a significant stress reliever and how it facilitates people to achieve their ideal body image, their confidence and happiness. This article also highlights the importance of a fit and healthy physique as the very basic of a stress-free life.

On the occasion of National Sports Day, PM Narendra Modi launched a nation-wide Fit India Movement to encourage strengthening physical health by setting goals for everyday. This movement had been announced on August 25 during his Mann Ki Baat address. The physical and mental health situation in India is sadly regressing. While several initiatives have been launched to reverse this, it is important to remember that

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SHILLONG AS 'A CONTEXT AND A CHARACTER' IN ANJUM HASAN'S *LUNATIC IN MY HEAD*

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Anjum Hasan gives a peek into Shillong in the very first page of her debut novel *Lunatic in My Head*. From the dull and dreary weather that weighs down on its residents, who hardly venture out of their house, to the multi-cultural society that Shillong is and in spite of the tension caused by it, people still not wanting to let it go, makes the town "a context and a character in itself." (Johny ML, *Artconcerns.com*, Aug 2008) The novel "is the reflection of the soul of the place through the eyes of three characters." (Rehman, *hindustantimes.com*, Feb 17, 2011)

As one of the lead characters in the novel, Firdaus Ansari takes a walk after a rain-washed afternoon in Shillong, the pine trees around her drip "slow tears" (LMH, 9) and film posters turn mushy. The town is almost always rainy or misty. So the environment is generally lethargic. Hasan herself has admitted "I can't remember what I did with my youth except wait for something to happen, write bad poetry and laugh." (Singh, *jaiarjun.blogspot.com*, Dec 23, 2007) The youth in *Lunatic in My Head*, are indecisive and do not think much about the future "waiting for many years now for someone or something to show them the way." (LMH, 66)

Shillong takes over the novel. It is not only the place in which the novel is set in. It is a character that lives with the people. The town has become a trap not only for Hasan's lead characters, Firdaus, Aman and Sophie, but also for almost everyone who live there. "Shillong did that to people […] – preserved them in its Shillong-flavoured timelessness – the same rumours, the same gossip, the same petty jealousies. The scale of the town corresponded to the scale of people's imaginations." (LMH, 66) Hasan says that it might be due to people from different parts of the country living together in this town. "They didn't fit and they hadn't noticed…." (Singh, *jaiarjun.blogspot.*com, Dec23, 2007) Like the Das family – the wife, a Punjabi and husband, a Bengali – who moved here due to social ostracism, the Moondy family, who are basically from Uttar Pradesh, Aman's friends, Bodha, a Bengali, Ribor, a Khasi (the majority tribe in Shillong), Sarak Singh, the Bhojpuri *aloo-muri* vendor, Elsa Lyngdoh, the kind Khasi landlady and Max, the militant Khasi. Nobody wants to leave Shillong. But the co-existence of the Khasis and the dkhars [meaning outsiders in the local language] has been quite an issue for a long time. Due to this and the lack of opportunities in this small town, many people have been forced out of it.

Firdaus, Aman and Sophie – all dkhars – though they were born and brought up in Shillong, feel they do not belong there. "Firdaus found that she longed for Shillong even as she lived there, even though she had lived there all her life." (LMH, 101) So, even though she has her grandfather living with her and a steady boyfriend, Ibomcha, a carefree Manipuri youth, she still feels lonely in the town. And one thing she does not like about the town is gossip. Her colleagues at college discuss their private issues without any inhibition. Discussions on cheating husbands and repulsion for tribals annoy her. Even Aman hates this, "how rumours got trapped in the webs of their own creation and hardened into petty little things that everyone know but no one acted on." (LMH, 19) He could not do much about the happenings in Shillong either and matters concerning his own life. With his books and notes lying open on the table and his favourite rock star's faded picture on the wall "The room reflected him back to himself." (LMH, 68) He wants to leave the town and do something with his life, but something stops him from doing it – "the town's clear night air, cold and spiked with the smell of wet pine trees. This town, he thought, longingly." (LMH, 65) He remains this way until he is forced to leave. Aman is never treated differently, as an outsider, by his friends. But he is still not sure of his place in Shillong, "an encroacher, a permanent guest of the hills-people, or someone who belonged here because he had never lived anywhere else? (LMH, 36)

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Social Imbalance and Seclusion in Delores Phillips's *The Darkest Child*

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Abstract

This paper aims to bring out the element of 'Segregation' in *The Darkest Child* by Delores Phillips. Racial Segregation was one of the major events that happened after the emancipation of slaves in America. The black people in different parts of America who were given freedom were forced to move to certain areas that were being allotted for them to live. The American society didn't consider the black people as equals, and they made a distinction between them and the blacks in every way possible. This study focuses on the life of the black people who were demeaned and deprived of all opportunities during the time of segregation.
Keywords: segregation, discrimination, African American, Negroes, white people

Segregation in other words can be called as 'Jim Crow Laws' which were introduced as 'Black Codes in postcolonial America. The word 'Jim Crow Laws' comes from a character that was played by Thomas Dartmouth Rice in the play "Blackface Minstrelsy". The character 'Jim Crow' was represented as a buffoon, which heightened the negative stereotypes of African Americans, and the word 'Jim Crow' became a derogatory word to represent the black people. After Emancipation Proclamation the African American people were subjected to a set of codes named as the 'Black Codes'. The Black Codes were enacted to replace the social controls of slavery that had been removed by the Emancipation Proclamation. The main objective of this law was to control the African Americans and continue White supremacy. These set of rules or laws forced the black people to remain under the rule of the whites even though they were free.

Racial segregation was the main objective of Jim Crow Laws, the word "segregation" meansto set something or someone apart from others. In the Southern part of the United States the African American people were forced to move to certain areas that were allotted for them to live. They were not allowed to attend the schools that the white children went to, not allowed to drink in public water fountains. They weren't allowed to get respectable jobs in the society, they were seen as less and not equal to the white people. Each and every public space from parks to transportation, restaurants and many other places had a distinction mentioned as 'for colored people'. These rules and regulations made the Black people secluded from the White people and they were discouraged and demeaned in every part of their life.

The novel *The Darkest Child* by Delores Phillips is set during the time period of segregation in Pakersfield, Georgia in 1958. The novel traces the social condition of the African Americans during the time of segregation. The novel revolves around the family of Rozelle Quinn and her children and about their social condition and how they are affected by

PALEOBOTANY

Southeast Asian Dipterocarp origin and diversification driven by Africa-India floristic interchange

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The evolution and diversification of ancient megathermal angiosperm lineages with Africa-India origins in Asian tropical forests is poorly understood because of the lack of reliable fossils. Our palaeobiogeographical analysis of pollen fossils from Africa and India combined with molecular data and fossil amber records suggest a tropical-African origin of Dipterocarpaceae during the mid-Cretaceous and its dispersal to India during the Late Maastrichtian and Paleocene, leading to range expansion of aseasonal dipterocarps on the Indian Plate. The India-Asia collision further facilitated the dispersal of dipterocarps from India to similar climatic zones in Southeast Asia, which supports their out-of-India migration. The dispersal pathway suggested for Dipterocarpaceae may provide a framework for an alternative biogeographic hypothesis for several megathermal angiosperm families that are presently widely distributed in Southeast Asia.

Many of the megathermal angiosperm families that constitute major components of today's tropical rainforest, such as Annonaceae, Combreteaceae, Ebenaceae, Myristicaceae, etc., show disjunct pantropical distributions. The colonization and diversification of megathermal angiosperms in Southeast Asian tropical forests is believed to be influenced by their ancient origin in Africa and out-of-India dispersal (*1*–*4*). However, the limited number of molecular studies and the sparse fossil record of megathermal angiosperms from the Cretaceous of Africa (*1*) and the Paleogene of India (*4*, *5*) provide insufficient information to conclude their ancient African origin or that India aided their dispersal and diversification in Asian tropical forests. Here, we present fossil pollen data from the family Dipterocarpaceae that suggest their African origin during the mid-Cretaceous and subsequent dispersal to Southeast Asia.

Dipterocarpaceae are a pantropical, obligate megathermal angiosperm family comprising more than 500 species grouped into three subfamilies with an intercontinental disjunct distribution: Monotoideae in Africa, Madagascar, and South America; Pakaraimaeoideae in South America; and Dipterocarpoideae in the Seychelles, India, and Southeast Asia (*6*). A specific combination of morphological and ecological characteristics determined the ecological success of Dipterocarpoideae and enabled them to out-shade the canopy of other tree families, which led to their dominance in the mature forests of Southeast Asia (*6*). These characteristics include ectotrophic mycorrhizal association, specific pollinators, mast fruiting overcoming seed predation, protective resin in multicellular secretory ducts, poorly nutritious and resinous unpalatable leaves for many herbivores, and plagiotropic followed by orthotropic branching patterns in trees. Dipterocarps have been the major source for timber extraction across Southeast Asia over the past 50 years, which has led to their overexploitation and has left many formerly superabundant species critically endangered.

We present eight fossil pollen types, extracted using the standard palynological techniques (*7*), referable to five living genera of the subfamily Dipterocarpoideae (*Dipterocarpus*, *Dryobalanops*, *Shorea*, *Vateriopsis*, and *Vatica*) and one genus of the subfamily Monotoideae (*Monotes*) (Fig. 1 and figs. S1 to S4) from the Maastrichtian of Sudan and the Paleocene and early Eocene of India (Fig. 2, appendix S1, and table S1). These are combined with the secobicadinane biomarkers of dipterocarps retrieved from the Late Cretaceous sediments from central India (fig. S5), phylogenetic analysis (*8*–*13*) of pollen (fossil and extant) morphology, and DNA sequence data of 54% of the known Dipterocarpaceae species to do the following: (i) trace the origin and evolution of the family; (ii) define the role of climate and dispersal pathways, including movement of the Indian Plate during the Late Cretaceous–early Paleogene in the diversification of the family; and (iii) resolve the paleobiogeographic history of lowland dipterocarp rainforests in Southeast Asia.

The pollen of the subfamily Dipterocarpoideae is distinctive in being tricolpate, with very long colpi reaching almost to the poles, and with exine consisting of a thin basal layer, except in *Vateriopsis* and allied genera, with a much thicker outer, sculptured layer. The columellae and frequently grooved or crenelated ridge-bearing tectum of the outer layer fuses into a tilioid structure, except in the tribe Shoreae (*14*). Pollen of most species of Dipterocarpoideae are smaller than 35 μm, whereas *Dipterocarpus* pollen ranges from ~50 to 100 μm. The diagnostic characteristics of *Dipterocarpus* pollen can mostly be seen in light microscopy (LM), whereas the identification of other genera also requires scanning electron microscopy (SEM) examination. No other plant family exhibits the combination of tricolpate configuration, absence or reduced endexine, and tilioid exine structure (table S2). By contrast, the subfamily Monotoideae pollen is tricolporate with the ektexine forming a fairly coarse tilioid structure (*14*). Phylogenetic analyses based on pollen morphological characters confirm the placement of seven of the eight fossil taxa within five extant genera of Dipterocarpoideae, namely *Vateriopsis*, *Dipterocarpus*, *Dryobalanops*, *Vatica*, and the three different *Shorea* sections—Anthoshorea, Parashorea, and Rubroshorea (figs. S6 to S8)—and the remaining one fossil taxon was placed within the genus *Monotes*, belonging to subfamily Monotoideae (figs. S6 to S8). The fossil pollen types represent five clades of Dipterocarpaceae based on our molecular phylogenetic analyses and previously published phylogenetic literature (*15*) (Fig. 3B, table S1, and appendix S2).

The discovery of fossil pollen with clear affinity to the subfamilies Dipterocarpoideae and Monotoideae from the Maastrichtian of Sudan and the Paleocene of India refutes frequent references to the unreliability in determination of fossil dipterocarp pollen (*16*). The previous skepticism largely stems from the fact that there are abundant records of Dipterocarpoideae leaves and woods from the Indian Neogene (*17*) but very few from the Late Cretaceous and Paleogene. This disparity most likely relates to many factors, including differences in the depositional setting. Other factors to bear in mind are (i) the possibility that the earliest phase of evolution of the family may have involved a long period of mosaic evolution and (ii) early macrofossils may not have borne anatomical features recognizable as Dipterocarpaceae.

The presence of pollen comparable to that of *Monotes* in the late Paleocene and early

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SPACE SAVING FURNITURE AS A SMART SOLUTION FOR 2BHK APARTMENTS

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Abstract

Urbanization growth and marketing prices compel citizens into less space, due to increase in population the appearance of small flats and houses came into being. In cities many people live in small flats and homes. Many apartments fail to provide spaces with quality and comfort. Growing migration to cities leads to the growing of vertical housings and small apartments. Therefore, living in a small space necessitates minimalist and space-saving furniture solutions to sustain human wellbeing. This necessitates the amendment in space saving furniture solutions which gives full advantage of these reduced spaces while still achieving greater comfort, usability, and order in these spaces.

This research paper contributes to the factors that influence the purchase of space saving furniture on the space efficiency of apartments, through a survey that was conducted randomly among 500 respondents residing in apartments in Tirupur and Coimbatore through purposive sampling technique. This study finds that most participants have difficulties with their small spaces and supported the idea that space saving furniture can be a smart solution for their problems.

Key Words : Minimal Space, Furniture, apartments, 2bhk apartments.

1.1 INTRODUCTION

In India there is a domination of middle class people and owning a own house seems impossible. It is also a known fact that majority of middle class people live in cities. These cities face problems with continuous population growth, but human desires and wants are unlimited. Urbanization growth and marketing prices

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Statistical Inference Through Variable Adaptive Threshold Algorithm in Over-Sampling the Imbalanced Data Distribution Problem

S. Karthikeyan & T. Kathirvalavakumar

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Part of the Advances in Intelligent Systems and Computing book series (AISC,volume 1404)

Abstract

Classification of an imbalanced data is a major problem in many real-time systems. Classifiers classify the majority class samples with lesser misclassification and the minority class samples with more misclassification. The biased decisions of a classifier are due to the less availability of samples in the minority class. To solve this problem, new re-sampling method for over-sampling is proposed. The synthetic samples for the minority class are generated by statistically analysing the features of a minority class samples. Here, the samples are generated in double the number of minority samples to reduce its misclassification. It helps the classifier to have a balanced focus on majority and minority classes. The samples over-sampled through this approach are compared against the over-sampling approaches such as SMOTE and ADASYN. The results obtained through the proposed work show better classification accuracy and reduced misclassification rate in both majority and minority classes. Result is evaluated using the statistical evaluation metrics. It is also observed that over-sampling with the proposed approach is better for the small and medium imbalanced ratio datasets.

Keywords

Imbalanced data | Over-sampling | Classification | Statistical methods | SMOTE | ADASYN

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Statistical Inference Through Variable Adaptive Threshold Algorithm in Over-Sampling the Imbalanced Data Distribution Problem

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Abstract

Classification of an imbalanced data is a major problem in many real-time systems. Classifiers classify the majority class samples with lesser misclassification and the minority class samples with more misclassification. The biased decisions of a classifier are due to the less availability of samples in the minority class. To solve this problem, new re-sampling method for over-sampling is proposed. The synthetic samples for the minority class are generated by statistically analysing the features of a minority class samples. Here, the samples are generated in double the number of minority samples to reduce its misclassification. It helps the classifier to have a balanced focus on majority and minority classes. The samples over-sampled through this approach are compared against the over-sampling approaches such as SMOTE and ADASYN. The results obtained through the proposed work show better classification accuracy and reduced misclassification rate in both majority and minority classes. Result is evaluated using the statistical evaluation metrics. It is also observed that over-sampling with the proposed approach is better for the small and medium imbalanced ratio datasets.

Keywords

Imbalanced data | Over-sampling | Classification | Statistical methods | SMOTE | ADASYN

Sustainable architecting of Co_2SnO_4/CE-BN-based electrochemical platform for highly selective and ultrasensitive detection of 2-nitroaniline in life samples

Original Paper | Published: 22 September 2022
Volume 189, article number 390, (2022) Cite this article

Microchimica Acta

Aims and scope →

Submit manuscript →

Chellapandi Bhuvaneswari, Karuppaiya Palpandi, Natarajan Raman & Sundaram Ganesh Babu

Abstract

A novel binary heterogeneous electrocatalyst, Co_2SnO_4, decorated on chemically exfoliated boron nitride sheets (CE-BN) with an exceptional capacity to detect electrochemical properties has been prepared by the simple hydrothermal method. The structural, surface morphology and electrochemical characteristics of Co_2SnO_4/CE-BN were characterized using a range of physicochemical and electrochemical techniques. Various voltammetric approaches were used to observe the analytical behaviour and applications of Co_2SnO_4/CE-BN/GCE for the determination of 2-nitroaniline (2-NA). The whole experiment is operated in the potential range from 0 to − 1.0 V *vs* Ag/AgCl (sat. KCl). The impact of operational factors on the peak current of 2-NA was investigated, including the pH, sample concentration, modifier amount and scan speed. With an estimated differential pulse voltammetry detection limit of 0.0371 µM and excellent sensitivity of 1,35 µA μM^{-1} cm^{-2}, the produced sensor, Co_2SnO_4/CE-BN/GCE, revealed high electrocatalytic activity (DPV). The system is more practical and sustainable due to its repeatability, stability and reproducibility with respect to the results achieved for detection of 2-NA. The synthesized Co_2SnO_4/CE-BN-modified sensor may thus be a likely choice for the detection of 2-NA in actual water sample analysis.

Synthesis of benzoimidazoquinazolinone and indolylxanthenone derivatives using Keggin-type heteropoly-11-molybdo-1-vanadophosphoric acid supported on Montmorillonite K-10 clay as catalyst: a green approach

Published: 25 October 2022

Volume 48, pages 5029–5044, (2022) Cite this article

Research on Chemical Intermediates

Aims and scope →

Submit manuscript →

Antony Muthu Prasanna, Murugan Kumaresan, Karuppaiah Selvakumar, Meenakshisundaram Swaminathan & Ponnusamy Sami

Abstract

Biologically as well as medicinally important two different organic scaffolds, viz. benzimidazole and quinazoline, are present in the class of heterocyclic compounds called benzimidazoquinazolinone. Similarly, indolylxanthenones are the compounds containing two important organic moieties such as indole and xanthene. In this work, a new green protocol for the synthesis of benzoimidazoquinazolinone and indolylxanthenone derivatives was attained under environmental-friendly solvent-free condition through a simple one-pot three-component condensation reaction. This condensation was achieved by using 10% heteropoly-11-molybdo-1-vanadophosphoric acid ($H_4[PVMo_{11}O_{40}]$)-loaded Montmorillonite K-10 clay material (PVMoK-10) as an efficient heterogeneous catalyst. The identification and characterization of the derivatives were done by physical as well as spectral techniques. Synthesis of ten derivatives of benzo[4,5]imidazo[2,1-*b*]quinazolin-1(2*H*)-one and two derivatives of 9-(1*H*-indol-3-yl)-2,3,4,9-tetrahydro-1*H*-xanthen-1-one was successfully achieved using this protocol. A tentative reaction mechanism has also been proposed for the synthetic plans.

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THE CULTURE-POWER EQUATION: A READING OF ARUNI KASHYAP'S *THE HOUSE WITH A THOUSAND STORIES*

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ABSTRACT: A society's identity is ascertained by what is called its culture – customs, rituals, art forms, etc. A society cannot be established without these. But it becomes important to discuss who established these practices and on what basis it was done. It is also mandatory to discuss if all the people in a society benefit from these practices. If a society's culture is established only to benefit a few people, those few must be in a position, where nobody can question them. The circumstances in which a group of people are able to assume a position of power over others, have to be analysed. It would also help to explore how the oppressed people react to the situation. As power transfers from one party to another when situations change, how each party behaves in different situations will also be studied in this paper. To traverse this subject Aruni Kashyap's novel, *The House with a Thousand Stories*, has been chosen.

Keywords: culture, power, society, patriarchy, relationships

Culture determines a society's unique identity. Author and critic, David Oswell quotes from the English cultural critic, Raymond Williams' book *Culture and Society* that in the late 19th century, culture "came to mean 'a whole way of life, material, intellectual and spiritual'. (1958: xvi)" People want to sustain their culture to protect their identity. But who determines the culture of a particular society? Is every party in a community included in determining the culture? Who insists that a particular practice be implemented as culture? Does this implementation have anything to do with power? Are power and culture related? Oswell says in his book *Culture and Society: An Introduction to Cultural Studies*,

> ... the analysis of the lived cultural experiences of particular groups of people can be conducted with no reference at all to questions of force, domination and exclusion. And yet, to a large extent cultural studies has insisted that power is central to understanding culture.

How then, are culture and power related? What has power got to do with culture? Culture may concern seemingly insignificant and spontaneous activities. But "… the most mundane experiences and forms of expression involve decisions being made, actions taken and outcomes realised (Oswell)."

Every community is comfortable with its general culture. Every community wants to protect its cultural identity. But only a few are able to assert it. These few have the power to control the actions of others. This power may come from money, social status, gender, etc. At home or outside home, the powerful decide the everyday behaviour, practices and relationships of those around them. "Much discussion of these issues in cultural studies has focused on the relation between culture and the dominant social and political institutions that support and reproduce structural inequalities (Oswell)."

In a conservative society, the man takes over the role of implementing culture. The woman behaves according to the rules of culture determined by men. Similarly, a community that has a higher social status tends to decide the behavioural patterns of others in the society. It is in this context that Aruni Kashyap's *The House with a Thousand Stories* has been chosen for study.

The novel revolves around Pablo, a teenager, who has come to Mayong, to attend his aunt's wedding. This is not the first time he is spending time with his extended family. He had come before four years to attend his uncle, Bolen's funeral. Bolen is Pablo's father's first cousin and his best friend. After his death, Pablo becomes friends with Mridul, Bolen's son. Apt to the title, the house has seen and lived with thousand stories. Stories have happened before and are happening at present, because of the people living in the house: Bolen's elderly mother, his widowed wife, Onima, their son Mridul, Bolen's younger brother, Mukut and his family, their unmarried younger sister, Moina, a younger brother, Prasanto, and

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THE EFFECT OF PANOPTICON ON YOUNG FACEBOOK USERS
(With special reference to the selected undergraduate students of SRNMCollege)

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ABSTRACT
This paper entitled "The Effect of Panopticon on Young Facebook Users" intended to study the effect of surveillance on Social Networking sites, especially, Facebook. Its objective is to find the extent of awareness and activities of the young students while using Facebook. It is mandatory tounderstand the surveilling nature of SNS and the effect of the Panopticon. The SNS has both advantages and disadvantages. The teachers need to have proper knowledge and awareness to educate their students.

Keywords: Panopticon, Social Networking Sites, Facebook, Surveillance

Social Networking Sites are internet-based tools that are meant for facilitating communication and relationships. They can be used for exchanging content with one another. SNS has been more prevalent among the generations like Millennials, Generation Z and Generation Alpha. There are more sites available for Social Networking - Facebook, Twitter, Instagram, Whatsapp, YouTube, WeChat, Tumblr, Skype, Line, Snapchat, Pinterest, Linked In, Telegram, Reddit, Myspace, Flickr, Quora and the list goes on. The users have accounts on nearly 10 sites. Their day starts and ends on these Social Networking Sites. It is a kind of addiction to this generation without any age or gender difference.

Initial social networking websites on the Internet started in the form of general online communities like Theglobe.com in the year 1995, Geocities, another popular website in the year 1994 and Tripod.com that was released in 1995. Most of these primal groups stressed bringing communities together to exchange information with each other through their chat rooms and encouraged their users to share personal data and thoughts through personal web pages. Security is built into every Facebook product, and it offers several security features, such as login alerts and two-factor authentication, to help the user add an extra layer of protection to his or her account. The user can also review and update security settings at any time. The user can use the Privacy Checkup to review and adjust his/her settings to make sure to share with whom they want. It recommends regularly checking the audience for profile information and posts.

Facebook can be used through various devices which have Internet connectivity, such as personal computers, tablets and smartphones. The user has to reveal his/her information in the application after registering. It enables to share the text messages, photos and multimedia contents either with his/her friends or public. There is a privacy setting to customize the preferences of the users to whom the posts have to be shared. It is possible to embed the other applications, join groups available or create groups.Marketplaces are available to buy or sell products and services, receive the updates of one's friends' activities and the pages followed by an user. Facebook said that it had 2.8 billion monthly active users as of December 2020, and Facebook was the most downloaded mobile app of the 2010s globally.

Facebook is confronting with various issues regarding the user policy, political manipulation and mass intrusion. It also affects the users' psychology by making them addicted to it. The negative aspects of it are spreading fake, conspiracy and hate news or content. It has been receiving accusations from the commentators for such negative

THE EFFECTS OF RACISM IN TONI MORRISON'S THE BLUEST EYE

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Abstract

African American literature is the body of literature produced in the United States by writers of African descent. It begins with the works of such late 18th-century writers as Phillis Wheatley. Before the high point of slave narratives, African-American literature was dominated by autobiographical spiritual narratives. The result is a literature rich in expressive subtlety and social insight, offering illuminating assessments of American identities and history. Although since 1970 African American writers, led by Toni Morrison, have earned widespread critical acclaim, this literature has been recognized internationally as well as nationally since its inception in the late 18th century. Morrison is one of the most significant writers of African-American Literature. She not only advocates the need for strong and healthy human bonding in African-American society as exemplified in her novel. She tries a reading that views the texts as an ethnic, cultural, and political response to the racist, sexist patriarchal, and capitalist oppression and domination of blacks. It demonstrates how the systems of oppression are sustained by using white supremacists and patriarchy. The Bluest Eye makes a scathing assault on the imposition of white standards of beauty on black women and the introduction of cultural perversion. It offers a critique of the dominant aesthetic that is internalized by way of the majority of the black community and attempts to deconstruct the male ethnicity which sports a hegemonic manage over the lives of black America. The Bluest Eye is a powerful expression of Toni Morrison's effects of Racism, ethnic cultural feminism, a critique of black poverty, powerlessness, and loss of positive self-image represented by Pecola who feels that blackness has condemned her to ugliness and neglect.

Key Words: *Literature, Slave Narrative, Identity, Racism, Cultural Feminism.*

Racism is a perception of the superiority of one race to another which ends up in discrimination and prejudice toward humans primarily based on their race or ethnicity. The lifestyles of African-American cloured people had been affected by racism. These so-called structures of social and psychological restrictions make colored people sense as inferiors. Toni Morrison has gained popularity internationally with the publication of her first novel "The Bluest Eye". This novel mirroring us the terrible effects for blacks personalizing the values of a white culture that rejects them and rejects them both directly and indirectly.Even though slavery is abolished legally through the difficult efforts of eminent leaders however nevertheless the African-Americans aren't taken into consideration as identical to whites. The Black people are looking to identify themselves with the white and their cultural approaches. Toni Morrison insists on Black cultural heritage and solicits African-Americans to be proud of their Black identity. This paper presents the nature of the colored people's struggle for their race and endurance in a predominantly multicultural post-colonial white America.

If there is a single exceptionality of African-American Women's literature, it is their authentic record of the thoughts and feelings of black women and experiences that make living conditions for African American women different than what men have written. A common scene in many of the black women's novels is the sharing of intimacies among the black women that can be trusted only by a kindred female spirit. African-American women writers explored the methods in which the shadow of slavery weighed upon their female protagonists' sense of themselves as women.

Morrison is one of the most significant writers of African-American Literature. She not only advocates the need for robust and healthy human bonding in African-American society as exemplified in her novel, but Sula (1974)however also, deals with the pain and agony caused by the African - American oppressor - the black male and the white racism. In an interview with Bennie Angelo, Morrison admits: "I feel personally sorrowful about black-white relations a lot of time" (March 10, 2004). She also talks about the Black experience: her singular concern with black women, the black community, black identity, black

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THE IMPACT OF COVID-19 ON THE GOLD SPOT AND FUTURES MARKETS IN INDIA: AN EMPIRICAL STUDY

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ABSTRACT

In many cultures, gold is a symbol of achievement, power, and wealth. India is a country with a diverse range of cultures and traditions. In India, gold investment is seen as a barometer of wealth. People frequently acquire gold for a variety of reasons, including weddings, festivals, and gift giving. The gold market is a critical component of the country's economic development. The COVID 19 or Coronavirus pandemic is the world's greatest test. Any economy, without proper preparedness, will have a historic struggle in overcoming this epidemic. It has a detrimental effect on financial markets worldwide. Due to the spread of coronavirus, all countries have declared a brief period of lockdown. Following the lockdown, the business markets gradually began to develop. With this backdrop, the goal of this research is to add to the knowledge of COVID-19's impact on the Indian gold spot and futures markets.

KEYWORDS: COVID-19, Gold Spot and Future Price, MCX, ADF, GARCH

INTRODUCTION

Gold is a very unique precious metal with a long and intimate history for humanity. Gold is more than a valuable metal to the Indians. Indians have regarded gold as a sign of purity, luxury, riches, rank, beauty, affection, and good fortune from time immemorial. Unlike any other metal, this beautiful yellow substance evokes intense emotional responses in people. Gold has historically been seen as a secure investment, comparable to liquid cash, and has been used as risk collateral. Gold jewellery is a vital element of our culture, and it is used in virtually every area of our lives, including birth, marriage, health, house construction, festivals, and religious ceremonies. Indian women, regardless of their religious background, like wearing gold jewellery. Gold jewellery is the ideal wedding present for the bride and groom's close relatives. Farmers are particularly fond of jewellery, with gold sales rising following a bumper crop. As a result, India's gold market is one of the world's largest and fastest expanding. India is the world's second-largest gold consumer, with annual gold demand of around 800-900 tonnes, and it plays a critical role in international markets.

The world is presently confronting the twentieth century's greatest epidemic, dubbed "COVID-19," which is being fuelled by the newly discovered coronavirus SARS-CoV-2. The ailment, which was first discovered in December 2019 in Wuhan, Hubei Province, China, has spread worldwide, causing severe respiratory discomfort in vulnerable persons. In March 2020, the World Health Organization (WHO) proclaimed the COVID-19 outbreak a pandemic. This introduced a new stumbling block. Consumer purchasing behaviour encompasses much more than a consumer's product acquisition strategy. Marketers place a premium on how consumers make purchases. This involves gaining an understanding of a customer's decision-making history (what, why, when, how much, and how frequently). Consumers are responsible for ensuring a secure buying experience during a pandemic. To prevent viral transmission, the WHO recommended remaining at home, using facial coverings or masks, keeping social distance, and following personal hygiene standards. This epidemic has had a profound effect on communities and economies around the world, influencing several facets of society in unique ways. In India, the authorities

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THE IMPACT OF COVID-19 ON GOLD SPOT PRICE VOLATILITY IN THE INDIAN COMMODITY MARKET

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ABSTRACT

COVID – 19 lockdown restrictions widely implemented across the globe to curb the spread of the virus have included travel prohibitions and border closures, stay-at-home and work-from-home orders, and extensive business closures; this virus panic affects entire economic and financial sectors. It leads to economic loss, especially for daily income earners from small-medium scale businesses and the global economy. This study intensely analyses the impact of the COVID – 19 on gold price volatility in the Indian Commodity market (MCX). By using historical Gold Spot price data of Multi Commodity Exchange (MCX) from June 1 2017, to June 30 2021 (1047 Daily observations). In this research article, the Augmented dickey-fuller test (ADF) has been used to check whether the data is stationarity in nature and Exponential Generalized Autoregressive Conditional Heteroskedasticity (EGARCH) has been used to formulate the model for price volatility. The results reveal that the data series is nonstationary. After the first order, it is stationary. It has a volatility clustering effect and the presence of asymmetric volatility in gold price due to the spread of COVID – 19. Also, observe that bad news tends to increase the volatility of gold returns more than positive news. As a result, an increase in COVID-19 cases (a poor news signal) would cause gold returns to become more volatile. The study's findings will help the investors, regulators, and policymakers to assess the impact of the COVID -19 pandemic on the price volatility of Gold to formulate appropriate policies and strategies to minimize the impact of COVID-19.

KEYWORDS: EGARCH, Gold Price, Indian Commodity Market, MCX, Price Volatility.

THE IMPACT ON GOLD SPOT AND FUTURES PRICES VOLATILITY DURING THE COVID-19: AN EVENT STUDY

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ABSTRACT
This paper investigates the volatility of the gold spot and futures prices during the COVID-19 pandemic period. Events affecting gold price volatility were selected using the Bai–Perron structural break test. The study period was divided into the first wave and second wave, for a sample period from 1st April 2020 to 31st March 2022. The results of the GARCH and T-GARCH modelling frameworks reveal that the returns series for the gold spot and futures demonstrate greater volatility spikes during the COVID-19 outbreak. The results during the COVID-19 outbreak confirm investors' view of gold as a safe-haven asset during periods of great uncertainty.

1. Introduction
During this pandemic, the global financial crisis began. The world's financial markets daily operations were interrupted. Because only vital goods were allowed to be exchanged on the financial markets, investors' interest in the gold market has risen drastically. Gold has become an essential component of investment diversification as a safe-haven commodity that holds its value even when stock markets generate negative returns. Because of its lack of link with other sorts of investments, gold is frequently regarded as a safe haven for investors during times of acute uncertainty and market collapse. Having this distinct volatility behaviour shows a distinct volatility behaviour in which gold price surges may signify past or future instability, signalling more volatility for gold prices. As a result, the price of gold has risen, attracting an increasing number of investors. On the other hand, economic and political factors have led to repeated financial crises in recent decades, resulting in increased volatility in financial markets. As a result, gold markets have seen significant price movements and hence increased volatility, prompting investors to become interested in analyzing and grasping this trend. Christie–David, Chaudhry, & Koch (2000) Stated that there are many macroeconomic announcements like GDP, CPI, and Unemployment rate by the government which will have an impact on gold and silver prices. "When information becomes available about a cataclysmic event – like a terrorist or military attack – investors often flee the market in search of safer financial instruments and panic selling ensues" Chen & Siems, (2004). The purpose of this study is motivated by a lack of studies focused on reexamining the phenomenon of gold spot and futures volatility during the COVID-19 outbreak represents an interesting period to include in our sample because coronavirus lockdowns were initiated throughout the world, increasing the fear of economic loss and stimulating the demand for gold as a safe-haven uniqueness of this market using GARCH modelling frameworks.

2. REVIEW OF LITERATURE
There is existing literature which will show that event study and its results, Why and Where to use GARCH models in financial data. Lean, Halim, & Wong (2005) this study, which looked at whether or not the Asian Financial Crisis will affect stock market returns or exchange rates, shows that there is a considerable influence in countries other than a limited number of them. Stock prices and foreign currency exchange rates are equally affected by financial crises. In the same case, Chauhan & Kaushik,

THEMATIC CONCERNS AND FICTIONAL TECHNIQUE IN ARAVIND ADIGA'S THE WHITE TIGER

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Abstract
This paper triesdiscoverexplore how AravindAdiga, in his novel titled 'The white tiger' defines the various diverse subject matters and technical concerns. The unconventional The white tiger is the narrative of a person named BalramHalwai , his fall shapes ethical values and his upward social movement through crime and corruption. The writer describes a contemptuous and demeaning picture of Indian society throughout the novel.Adiga projects Indian organisation as a warped system and one of the main issues is the functionary of a deceased societywhere political support, and monetary gain are deeply connected and define the playing ground of the depraved affluent. The present assessment of this paper effectively incorporates the social trouble in the novel.
Keywords: *social evil, modernization, materialism, social structure*

Introduction

Aravind Adiga is an Indian writer and Journalist. His debut novel the white tiger, won the 2008 man booker prize, and has been adapted into aNetflix original movie. The white tiger is the fourth Indian-born author town the Kiran Desai. The radical research, the comparison among Indian upward thrust as a current worldwide financial system leads the character, Balram, who comes from crushing rural poverty.

Balram Halwai narrates his life in a letter, written onseven consecutive nights and addressed to the Chinese premier, wen jiabao.In his letter, Balram existence how he, the son of a rickshawpuller, escaped an existence of servitude to erickshaw a hit businessman describing himself as an enterprener.Balram was born in a rural village inthe Gaya district, where he lived with his grandmother, parents, brother and extended family.He is a good studentbut is forced to leave school to help pay for his cousin's dowry and begins to work in a teashop with his brother in Dhanbad.While working there, he begins to learn about India's government and economy from the customer's conversations. Balram defines himself astheworst servant but a good listener and resolves to become a driver,

After learning how to drive, Balram identifies job driving Ashok, the son of laxmangarh's landlords. He takes over the job of the main driver, from a small car to a heavy-luxury described Honda city. He stops sending money back to his family and lacks respect his grandmother during a trip back to his village.Balram moves to new Delhi with ashok and his wife, pinky madam. Throughout theirlifetime in Delhi, Balram is exposed to extensive corruption, especially in the government.In Delhi, the contrast between the poor and the wealthy is made even more evident by their closeness.

One night pinky madam takes the wheel from Balram, which druck, hits something in the road and drives away; We are left to assume that she has killed a *child*.Ashok's family pressure Balram to confess that he had been driving along.Ashok becomes increasingly involved in bribing government officials for the benefit of the family coal business.Balram then decides that killing ashok will be the only way.

After killing Ashok, stabbing him with a broken bottle, and stealing the large bribe Ashok was carrying with him, Balram moves to Bangalore, where he bribes the police to help start his own taxi business. Just like Ashok Balram pays off a family whose son one of his taxi drivers hit and killed. Balram explains that his own family was almost

Review

Transition metal complexes incorporating lawsone: a review

Freeda Selva Sheela Selvaraj, Michael Samuel, Arunsunai Kumar Karuppiah & Natarajan Raman

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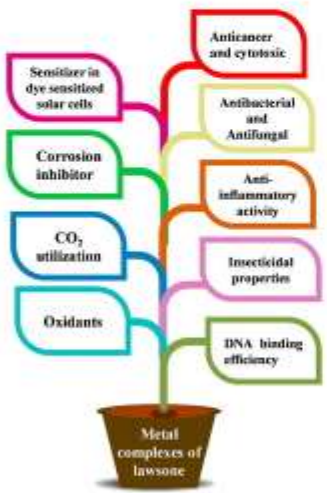
Researchers have renewed interest in naturally occurring compounds and their applications particularly in the pharmacological field with the goal of fewer side effects; lawsone is one among them. It is easily available and cost-efficient among the naphthoquinone family. Lawsone and its metal complexes are compounds with a wide variety of applications: especially it has promising biological activity. This review focuses on synthesis and applications, particularly in the biological field of a few transition metal complexes incorporating lawsone and its derivatives over the last two decades.



Keywords: Lawsone | transition metal complexes | anticancer and cytotoxicity | pharmacological activity | corrosion inhibitors

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Type 2 Diabetes Prediction from the Weighted Data

A. Suriya Priyanka, T. Kathirvalavakumar & Rajendra Prasath

Conference paper | First Online: 15 December 2022

Part of the Lecture Notes in Computer Science book series (LNAI,volume 13119)

Abstract

The world is struggled also with diabetes as the number of diabetic patients is increased rapidly. As the diabetes lead to create related critical diseases, more researchers are interested to predict the diabetes. This paper proposes a model for predicting the type 2 diabetes using KNN with the weighted trained data of the identified significant features. The weighted data is calculated from the probability of occurrence of a data in a neighborhood. Pima Indian Diabetes dataset is used in the experiment. The obtained result show that proposed method gives better result than the existing results in the literature.

Keywords

Prediction Type 2 diabetes Network pruning KNN Weighted data

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Ultrasonic assisted anchoring of Yb_2O_3 nanorods on In_2S_3 nanoflowers for norfloxacin degradation and Cr(VI) reduction in water: Kinetics and degradation pathway

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செவ்விலக்கியங்களில் இயல்பான காலங்களில் கால பகுப்பு

செ.வே. செல்வம்,

முனைவர் பட்ட ஆய்வாளர், தமிழியற்புலம், மதுரை காமராசர் பல்கலைக்கழகம், மதுரை
உதவிப்பேராசிரியர், தமிழ்த்துறை, வி.இ.நா. செந்தில்குமார நாடார் கல்லூரி, விருதுநகர், இந்தியா

கட்டுரைச் சுருக்கம்

செவ்விலக்கியங்கள் இயல்பான காலங்களில் கால பகுப்பு எவ்வாறு இருந்தது பற்றியும், இயல்பு என்பதன் விளக்கம் பற்றியும், இயல்பான காலங்களில் வாழிடங்களில் நடைபெற்ற நிகழ்வுகளைப் பற்றி ஆய்வுச் செய்யப்பட்டுள்ளது.

கருச்சொற்கள்

செவ்விலக்கியம், பொழுதுகள், பெரும்பொழுது, சிறுபொழுது, வாழிடங்கள்

ஆய்வு அணுகுமுறைகள்

இவ்வாய்வில் இயல்பான காலங்களை வரையறையைச் செய்து கூறும் போது விளக்க முறைத் திறனாய்வு அணுகுமுறையும், காலங்களைப் பகுத்து கூறும் போது பகுப்பாய்வு திறனாய்வு அணுகுமுறையும் காலங்களில் நிகழும் செயல்பாடுகளைப் பற்றி கூறும் போது படைப்பு வழி திறனாய்வு அணுகுமுறையும் பின்பற்றப்பட்டுள்ளன.

முன்னுரை

தமிழர்களின் பண்பாட்டினைப் பிரதிபலிப்பவனாகவும் பண்டைய கால மக்களின் வாழ்வியலை எடுத்துகூறும் கருவூலமாகவும் இருப்பவை செவ்விலக்கியங்கள் ஆகும். தினசரி வாழ்வு என்பது நம் வாழ்வியலில் மிக முக்கிய பதிவாகும். அதனைப் பற்றிய அக்கறைகள் நமக்குள் இருப்பதில்லை. முக்கிய நாட்கள் என்பது எதுவும் கிடையாது. எல்லா நாட்களும் முக்கியமான நாள்தான் என்பதனை அறிவுறுத்தவே இவ்வியல் ஆய்வின் காரணியாக அமைந்தது. இருபத்து நான்கு மணிநேரம் கொண்ட ஒரு நாள் நிகழ்வதற்கு காரணம் பூமி சுற்றுவதாகும் என்று வெளிநாட்டு அறிஞர்கள் கண்டுபிடித்தாக இன்றைய அறிவியல் கூற்று அமைந்தது. ஆனால் இதனை உண்மையில் பல் நூற்றாண்டுக்கு முன் நம் தமிழர் கண்டுபிடித்துள்ளனர். மனிதன் வாழ்க்கைக்கு இலக்கணம் வகுத்தவர்கள் தமிழர்கள் அந்த வாழ்க்கைக்கான இலக்கணத்தில் பொழுதினைப் பிரிக்க இயலாது. செவ்விலக்கியங்களில் வாழ்வியல் சம்பந்தமான கருத்துக்களை இலக்கியமாக வகுத்துக் கூறும் ஒவ்வொரு நிகழ்வுகளிலும் பொழுதுகள் காணப்படுகின்றன. செவ்விலக்கிய நிகழ்வுகள் எல்லாம் பொழுதுகளிலேயே

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A Novel Deep Supervised Contour Fractal Dimension Analysis Model for Palmprint Recognition

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ABSTRACT

A novel Palmprint Recognition System (PRS) using Deep Supervised Learning (DSL) classifier is proposed in this research work. To divulge the novelty, a Deep Supervised Contour Fractal Dimension Analysis Model for Palmprint Recognition (DCFPR) is put forward. That has a novel Region-based Contour Fractal Dimension (RCFD) feature extraction approach and a Deep Supervised Learning (DSL) classifier approach for acquiring the higher recognition and identification accuracy rate. To accomplish the RCFD approach, traced all the edges/contours of 2D Palmprint Region of Interest (2D-PROI) image using Canny edge detection algorithm and then split into several regions. At each region, Fractal Dimension (FD) and the Slope value (S) are computed in an idiosyncratic manner using the Box-Counting procedure and then accumulate all FDs and Ss of all regions to create a distinctive feature vector. Classify this feature vector using Deep Supervised Learning (DSL) classifier approach to authenticate the genuine person of the taken palmprint at a higher accuracy rate. In this research, the multi-spectral 2D-PROI image database derived from PolyU, Hong Kong Polytechnic University, Hong Kong. The proposed model has been examined and evaluated with various metrics and found with 98% of authentication accuracy.

Keywords: Palmprint Recognition System, Deep Supervised Learning Classifier, Region-Based Contour Fractal Dimension, Canny's Edge Detection algorithm, Box-Counting, Fractal Dimension.

1. Introduction

Biometric imparts a secured technique of substantiating identification [1]. Biometric Authentication and Identification systems (BAIS) are typically necessary to protect the emerging digital aspects of the IoT world. Accordingly, the benefaction of this research is to make adequate preparation for furnishing an optimal remedy for the following: a, To overcome the demands of users who are wanted to secure their e-information and worthy assets at low cost in a more truthful and opportune manner, b, To provide the finest security to our society from the unauthorized intruders' hacking. c, To provide a perfect solution to avert illicit access to digital information.

BAIS is a programmed real-time application of human identification which can be possible by acquiring; determining and scrutinizing the digital data of human corporeal and logical characteristics [2]. Researchers are exploring several biometric traits to earn the peculiar BAIS. However, many researchers are impleading their exploration into PRS due to its singularity, stability and high-performance characteristics [3]. The large space of the palmprint area includes principle lines and wrinkles which provide lots of unique information compared to the fingerprint area. Human palm print principle lines, and wrinkles can be treated as edges or contours for receiving the feature information. And those edges are not identical to each palm in a human hand. The Canny edge detection algorithm classifies the perfect set of edges of various sizes in an entire image [4].

Authors in [5] proposed segmentation-based fractal analysis to apply fractal model at low computation time compared to other techniques. Fractal dimension (FD) approach is considered as a widely applied descriptor, especially for analyzing the texture representation, in several fields like the signature recognition, palmprint recognition written identification etc [6],[7]. Authors in [8] stated that the fractal-based feature extraction technique has been proved as the agreeable approach in a computer-aided diagnosis system with a huge dataset. In 1983, Mandelbrot introduced fractal geometry to define fractals as the sets of self-identical. Fractal dimension is a ratio that describes the asymmetry and the difficulty of the stochastic models, indicating the pattern changes feature at the various scale [9]. The Box-counting algorithm is the most progressive and straightforward technique to measure the fractal dimension of the image [10],[1]. It works well for both linear and nonlinear fractal images and derives the deformity patterns on the surface of the images [11],[12].

A set of feature vectors is created and stored for identification and recognition processes by the DSL classifier algorithm which is the sub-area of Artificial Intelligence (AI) technology. Authors in [13] proved that feed-forward neural network with Back-Propagation achieved the higher authentication precision of 99.99% compared to other machine learning techniques used in this paper. Authors in [14] showed that the deep learning method has yielded higher recognition rate for palm print images. Machine learning algorithms forecast the outcome in higher accuracy using anterior knowledge of content. Nevertheless, massive datasets are not learned thoroughly in the machine learning algorithms that cause the lack of limpidity, interpretability in the decision-making. To overcome these drawbacks, researchers have extended their view

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Honeycomb Nb_2O_5/RGO wrapped on MoO_3 nanorods for visible light-driven degradation of sulfasalazine and ciprofloxacin in water

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Highlights

- Nb_2O_5-RGO/MoO_3 nanostructures prepared using hydrothermal synthesis coupled with ultrasonic synthesis.
- Optimised nanocomposite shows improved activity towards CIP and SSZ.
- RGO function as a charge conduction bridge between Nb_2O_5 and MoO_3.
- Nanocomposite display remarkable stability and recyclability.
- Charge transfer mechanism and identification of SSZ degradation intermediates presented.

Abstract

Document details - Valorization of almond shell biomass to biocarbon materials: Influence of pyrolysis temperature on their physicochemical properties and electrical conductivity

Carbon Trends

Volume 9, October 2022, Article number 100214

Valorization of almond shell biomass to biocarbon materials: Influence of pyrolysis temperature on their physicochemical properties and electrical conductivity(Article)(Open Access)

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Abstract

Agricultural wastes are presently being used as animal feed or incinerated, yet they have the potential to become eco-friendly, value-added products. Converting agricultural waste into biocarbon material is one of the current advancements in their valorization. Biocarbons exhibit a wide range of application potential. The physical and chemical properties of biocarbons produced from agricultural feedstock differ based on pyrolysis conditions, in which the pyrolysis temperature plays a vital role. In this study, almond shell biomass was carbonized at three different temperatures: 300, 500, and 700 °C. The resulting biocarbons were analyzed to understand the influence of pyrolysis temperature on physicochemical characteristics. The carbon content in almond shells rose from 47% in the raw biomass to 75% in the biocarbon obtained at 700 °C. TGA-FTIR spectra indicated the release of volatiles such as CO_2, hydrocarbons, carbonyl groups, and ethers, the release of which increased with increasing temperature. Further, the increased pyrolysis temperature improved the thermal stability of almond shell derived biocarbons. The deconvoluted I_D/I_G ratios of Raman peaks were calculated to 1.274 and 1.012 for the biocarbons obtained at 500 and 700 °C, respectively, indicating a trend of increasing trubostratic carbons with increasing pyrolysis temperature. The biocarbon produced at 700 °C was 53 times more electrically conductive than biocarbon produced at 500 °C, likely due to the high carbon content and increased structural ordering of the carbons.

Author keywords

Agriculture waste | Almond shell | Biocarbon | Electrical Conductivity | Pyrolysis | Raman analysis | TGA-FTIR | Torrefaction

Indexed keywords

Engineering controlled terms: Agriculture | Biomass | Carbon | Electric conductivity | Fourier transform infrared spectroscopy | Physicochemical properties | Pyrolysis | Shells (structures) | Thermodynamic stability

Engineering uncontrolled terms: Agriculture wastes | Almond shells | Biocarbon | Electrical conductivity | Physicochemical property | Pyrolysis temperature | Raman analysis | Tga/ftir | Torrefaction | Valorisation

Engineering main heading: Agricultural wastes

Document details - Investigation of the rotational lines of A–X and C–A band systems of aluminium deuteride molecule using sunspot umbral spectra

European Physical Journal Plus

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Investigation of the rotational lines of A–X and C–A band systems of aluminium deuteride molecule using sunspot umbral spectra(Article)

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Abstract

A high-resolution sunspot umbra spectrum recorded in National Solar Observatory, Kitt Peak, in the visible and infrared wave number range was used to search the rotational lines of A $^1\Pi$–X $^1\Sigma^+$ (0,0), (0,0), (1,0), (1,1), (1,2) and (1,3) and C $^1\Sigma^+$–A $^1\Pi$ (0,0) and (1,1) bands of aluminium deuteride (AlD) molecule. The spectral wave number range used in the present study was from 20,750 to 24,410 cm^{-1}. By using a reliable line identification method, the chance coincidence was evaluated for the selected bands of A $^1\Pi$–X $^1\Sigma^+$ and C $^1\Sigma^+$–A $^1\Pi$ systems of AlD molecule. By adopting the identification method, the results of number of chance of coincidences were compared with I-parameter values. The equivalent widths were calculated for the well-resolved rotational lines using triangle approximation method. The effective rotational temperatures were then calculated for the bands (0,0), (0,1), (1,0), (1,2) and (1,3) of A $^1\Pi$–X $^1\Sigma^+$ and (0,0) & (1,1) of C $^1\Sigma^+$–A $^1\Pi$ system of AlD molecule. The rotational temperature values calculated for these bands were found to be in the range from 900 to 1500 K which agrees well with the effective rotational temperatures reported for other diatomic molecules in sunspot umbrae. More number of rotational lines of AlD were identified in the sunspot spectra, and the favourable rotational temperatures were also obtained. The results of the present study revealed that there is a high chance for the detection of AlD molecule in umbral region of sunspot. © 2022, The Author(s), under exclusive licence to Società Italiana di Fisica and Springer-Verlag GmbH Germany, part of Springer Nature.

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Document details - Biomimetic and osteogenic natural HAP coated three dimensional implant for orthopaedic application

European Polymer Journal

Volume 175, 15 July 2022, Article number 111387

Biomimetic and osteogenic natural HAP coated three dimensional implant for orthopaedic application(Article)

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Abstract

The excellent biocompatible and osteogenesis ability of multifunctional three-dimensional (3D) polymeric scaffolds have a vital role in bone regeneration application. Our prime focus of the investigation is the synthesis of snail shell-derived hydroxyapatite coated poly[bis(carboxyphenoxy)phosphazene] (PCPP)/poly(ε-caprolactone) (PCL) 3D scaffold. Snail shells are utilized for hydroxyapatite (HAP) synthesis via a modified chemical precipitation method. The interconnected PCPP/PCL polymeric scaffold was fabricated by the conventional solvent-casting/particulate-leaching method. Bioceramic HAP was further coated on the scaffold by the dip-coating technique. The obtained natural HAP from Turritella duplicata has minerals and organic substituents which are essential for biomedical application. HAP reinforcement significantly increases the mechanical property, compressive strength, and porosity of the scaffolds. The SEM image depicted the homogenous dispersion of HAP over the scaffold surface. Mechanical studies of the 3D polymeric scaffold at the 2% TSS-HAP content demonstrated a significant increase in compressive strength with desired porous structure. It showed increasing compressive strength from 1.52 MPa to 2.18 MPa and porosity of 82.26% to 76.18%. Snail shell HAP grafted polymeric scaffold shows mineralization with the formation of bone-like apatite. The HAP grafted bioceramic/polymeric scaffold surface helps in the attachment and proliferation of MG-63 cells. It also explored the biocompatible property and antibacterial against gram-positive/gram-negative bacteria. Overall, the fabricated 3D implant has improved mechanical strength, optimum pore size, and interconnected structure, which helps in mineralization and cancellous bone tissue engineering applications. © 2022 Elsevier Ltd

Author keywords

3D-Scaffold | Bone tissue engineering | Hydroxyapatite | Implant | Osteogenesis | Snail shell

Indexed keywords

Engineering controlled terms: Biocompatibility | Biomechanics | Bone | Compressive strength | Medical applications | Molluscs | Phosphate minerals | Pore size | Precipitation (chemical) | Scaffolds (biology) | Shells (structures)

Engineering uncontrolled terms: 3D scaffolds | Bone tissue engineering | Implant | Mineralisation | Natural hydroxyapatite | Osteogenesis | Phosphazenes | Poly(ε caprolactone) | Polymeric scaffold | Snail shell

Engineering main heading: Hydroxyapatite

Document details - Structural, Optical and Electrical Properties of Nebulizer Spray-Deposited Tin Disulphide Thin Films with Different Substrate Temperatures

International Journal of Vehicle Structures and Systems

Volume 14, Issue 3, 18 June 2022, Pages 391-396

Structural, Optical and Electrical Properties of Nebulizer Spray-Deposited Tin Disulphide Thin Films with Different Substrate Temperatures(Article)

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Abstract

The Nebulizer spray pyrolysis technique is used to make tin disulphide thin films at various substrate temperatures. SnS_2 thin films structural, electrical and optical properties are investigated. The polycrystalline nature was confirmed by X-ray diffraction (XRD) analysis, which revealed a hexagonal structure with a preferred orientation along the (0 0 2) plane. The full width half maximum value of the Bragg peak is used to calculate the size of SnS_2 crystallization. Scanning Electron Microscope (SEM) is used to examine the composition and surface morphology of SnS_2 thin films. The wavelength range of 400-1110 nm is used to determine the transmittance and absorption spectra of these films. With increasing substrate temperature, the optical band gap of tin disulphide thin films decreases from 3.17 eV to 2.61 eV. With regard to substrate temperature, the absorption coefficient and activation energy were reduced with SnS_2 deposition.

Author keywords

Band gap | Bragg peak | Scanning electron microscope | X-ray diffraction

Indexed keywords

Engineering controlled terms: Activation energy | IV-VI semiconductors | Morphology | Optical properties | Scanning electron microscopy | Spray pyrolysis | Sulfur compounds | Surface morphology | Thin films | Tin compounds | X ray diffraction analysis

Engineering uncontrolled terms: Bragg peaks | Different substrates | Nebulisers | Optical and electrical properties | Scanning electron microscope | Scanning electrons | Spray-deposited | Substrates temperature | Thin-films | X- ray diffractions

Engineering main heading: Energy gap

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Document details - Synthesis, spectroscopic, in vitro, in silico, and in vivo studies of binuclear Cu (II), Ni (II), Ru (II), and Zn (II) complexes with tetradentate Schiff base ligand

Applied Organometallic Chemistry

Volume 36, Issue 6, June 2022, Article number e6704

Synthesis, spectroscopic, in vitro, in silico, and in vivo studies of binuclear Cu (II), Ni (II), Ru (II), and Zn (II) complexes with tetradentate Schiff base ligand(Article)

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Abstract

A novel Schiff base macrocyclic ligand was synthesized by the condensation of 4-(3,4-diaminophenyl)benzene-1,2-diamine with β-naphthol-1-aldehyde. Binuclear complexes were synthesized from this Schiff base by reaction with Cu (II), Ni (II), Ru (II), and Zn (II) metal salts. Square planar geometrical structures of Cu (II), Ni (II), and Ru (II) complexes were achieved by several physicochemical methods, namely UV–Vis, FT-IR, NMR, ESI-Mass, and thermogravimetric analysis, respectively. Density functional theory (DFT) calculations at the B3LYP/6-31G(d) level were carried out to gain an insight into the thermodynamic stability and biological accessibility of the complexes. Moreover, molecular docking analysis was done against a novel target protein PDB: 6M71 (SARS-CoV-2). Both the Schiff base ligand and metal complexes showed excellent interaction with protein receptor. All the metal complexes have the strong tendency to undergo intercalation mode of binding with CT DNA. All the in vivo and in vitro screening studies showed that the complexes exhibit higher activities than the free Schiff base. © 2022 John Wiley & Sons Ltd.

Author keywords

binuclear | DFT | in vitro | in vivo | molecular docking

Indexed keywords

Engineering controlled terms: Chelation | Complexation | Copper compounds | Density functional theory | Ligands | Molecular modeling | Nickel compounds | Proteins | Ruthenium compounds | SARS | Synthesis (chemical) | Thermogravimetric analysis | Zinc compounds

Engineering uncontrolled terms: Binuclear | Density-functional-theory | In-silico | In-vitro | In-vivo | Molecular docking | Schiff-base | Schiff-base ligands | Synthesised | Vivo studies

Engineering main heading: Metal complexes

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Document details - Density Functional Theory Analysis of Ground State and Evaluation of Transition Probability Parameters for Carbon Mono-Fluoride Molecule

Journal of Applied Spectroscopy

Volume 89, Issue 2, May 2022, Pages 330-335

Density Functional Theory Analysis of Ground State and Evaluation of Transition Probability Parameters for Carbon Mono-Fluoride Molecule(Article)

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Abstract

In view of astrophysical application, the ground state molecular parameters such as bond length, dipole moment, rotational constant, harmonic frequency, IR intensity, vibrational temperature of the astrophysically significant diatomic molecule of carbon mono-fluoride (CF) were derived using B3LYP hybrid density functional theory with three basis sets of 3-21G, 6-31G, and 6-311G. The computed data were collectively compared with the values reported in the literature. It was found that the vibrational temperature obtained using the density functional theory approach resembles the favorable temperature for the formation of the CF molecule in an interstellar medium. The transition probability parameters, namely Franck–Condon factors and r-centroids were evaluated for A–X, B–X, and D–X band systems of the CF molecule, using a more reliable numerical integration procedure. The molecular parameters of ground state obtained in the present study was compared with the reported values for better justification. The results of Franck–Condon factors and r-centroids were also discussed in view of astrophysical application. © 2022, Springer Science+Business Media, LLC, part of Springer Nature.

Author keywords

astrophysical significance | carbon mono-fluoride molecule | density functional theory | Franck–Condon factor | r-centroid

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Document details - Extraction and Applications of Natural dye from the flower of Tagetes erecta.L in different Fabrics and Focus on Antimicrobial activity

Research Journal of Pharmacy and Technology

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Extraction and Applications of Natural dye from the flower of Tagetes erecta.L in different Fabrics and Focus on Antimicrobial activity(Article)

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Abstract

The main objective of extracting natural dyes from natural sources is to avoid the environmental pollution. The flower of Tagetes erecta is used for the extraction of dye using alkaline extraction method. There are four different mordants ($CuSo_4$, $FeSo_4$, NaCl, $K_2Cr_2O_7$) are used in cotton and polyester fabric by simultaneous mordanting method. The dye fixation is carried out at room temperature and also at 100°C. The result revealed that, different shades of yellow, brown and green were obtained from the dye when subjected to mordant. The dye at 100°C showed dark colours and excellent fastness properties when compared to dye fixed at room temperature. The dye extract of Tagetes erecta had a great antimicrobial activity against pathogenic strains of bacteria and fungi and the FT-IR was carried out to identify compounds.

Author keywords

Fabrics FT-IR Mordant Natural Dye Tagetes erecta

Indexed keywords

EMTREE medical terms: antimicrobial activity article bacterial strain extraction flower fungus nonhuman room temperature shade Tagetes erecta

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Document details - Effect of Substrate Temperature on Structural, Electrical and Optical Properties of Sprayed Tin Selenide Thin Films Applicable for Photovoltaic Measurements

ECS Journal of Solid State Science and Technology

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Effect of Substrate Temperature on Structural, Electrical and Optical Properties of Sprayed Tin Selenide Thin Films Applicable for Photovoltaic Measurements(Article)

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Abstract

Thin films of Tin selenide (SnSe) have been prepared on glass substrates at different temperatures in the range of 250 C375 C insteps of 25 C for optimization were discussed. The deposited tin selenide thin films were characterized using X-ray diffractionanalysis (XRD), Elemental dispersive X-ray analysis (EDAX), Scanning electron microscopy (SEM), Optical absorption,Photoluminescence (PL), Raman spectroscopy and electrical measurements. From XRD analysis a single-phase tin selenide thinfilm having orthorhombic crystalline structure with crystallite size of 17 nm to 62 nm were investigated. The surface morphologyrevealed the presence of uniformly distributed spherical grains of SnSe thin films without pores and voids. Optical absorptionspectrum revealed a direct band gap of 1.15 eV and having very high absorption coefficient (104/cm) was calculated. The Ramanscattering analysis confirmed the presence of B3g and Ag vibrational modes of SnSe thin films. PL studies revealed a strongluminescence peak near-band-edge (NBE) emission at 785 nm due to recombination of bound excitons. Photoconductivitycharacteristics of SnSe thin films were due to the existence of continuous distribution of localized states in the band gap data. Thustin selenide thin films were used as an absorber layer in the photovoltaic application.

Author keywords

Hall Effect | Optical properties | Photoluminescence | Surface Morphology | Tin Selenide | X-ray diffraction

Indexed keywords

Engineering controlled terms: Crystallite size | Energy dispersive X ray analysis | Energy gap | Hall effect | Layered semiconductors | Light absorption | Morphology | Optical properties | Photoluminescence | Photovoltaic effects | Scanning electron microscopy | Selenium compounds | Semiconductor quantum wells | Substrates | Surface morphology | Thin films | Tin compounds | X ray diffraction analysis

Engineering uncontrolled terms: Electrical and optical properties | Electrical measurement | Glass substrates | Optimisations | Photovoltaic measurements | Raman spectroscopy measurements | Single phasis | Substrates temperature | Thin-films | X- ray diffractions

Engineering main heading: X ray diffraction

Document details - Oil Cakes as Sustainable Agro-Industrial Feedstock for Biocarbon Materials

ChemBioEng Reviews

Volume 9, Issue 1, February 2022, Pages 21-41

Oil Cakes as Sustainable Agro-Industrial Feedstock for Biocarbon Materials(Review)

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Abstract

The demand for vegetable oil is increasing for both food and non-food applications, which leads to the generation of a huge amount of oil cakes. The rising annual production requires alternative applications for sustainable operations of oil mills, especially those involved in non-edible oil production. Hence, the value-added uses of oil cakes such as environment remediation (metal absorption), composite fabrication (as fillers, reinforcements), nanoparticle synthesis (as reducing and stabilizing agent), and production of carbonaceous materials (as carbon source) were extensively explored in recent years. Among them, the thermochemical conversion of oil cakes into carbonaceous materials (biochar and activated carbon) received great interest as the demand for biocarbon materials increases exponentially. Oil cake-derived biocarbon materials found a wide range of technological applications. With this perspective, recent developments in oil cake-derived carbon materials and their diverse applications are reviewed. © 2021 Wiley-VCH GmbH

Author keywords

Agro-industrial feedstock | Biocarbon | Biomass | Oil cakes | Pyrolysis | Vegetable oil

Indexed keywords

Engineering controlled terms: Activated carbon | Feedstocks | Metal nanoparticles | Pyrolysis | Synthesis (chemical)

Engineering uncontrolled terms: Agro-industrial feedstock | Annual production | Biocarbon | Carbonaceous materials | Food applications | Industrial feedstock | Non-edible oil | Oil cakes | Oil-production | Sustainable operations

Engineering main heading: Vegetable oils

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Ontario Research Foundation	Round-7 (ORF-RE07	ORF
Natural Sciences and Engineering Research Council of Canada See opportunities by NSERC	400320	NSERC
Ontario Ministry of Agriculture, Food and Rural Affairs	030332	OMAFRA

Document details - Bio-prospective potential of Pleurotus djamor and Pleurotus florida mycelial extracts towards Gram positive and Gram negative microbial pathogens causing infectious disease

Journal of Infection and Public Health

Volume 15, Issue 2, February 2022, Pages 297-306

Bio-prospective potential of Pleurotus djamor and Pleurotus florida mycelial extracts towards Gram positive and Gram negative microbial pathogens causing infectious disease(Article)(Open Access)

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Abstract

Background: The emergence of resistance to commonly used antibiotics by human infections occurred mostly due to their overuse, that prompted individuals to pursue novel and innovative treatments. The phytochemical characteristics, antibacterial activity, and cytotoxicity of MCF7 cells were evaluated in two Pleurotus spp. mycelial extracts in this work. Methods: Pleurotus djamor and Pleurotus florida mycelial extracts from pure cultures were tested for antibacterial activity by a well-diffusion assay and antimicrobial activity against mold fungi was evaluated for biomass inhibition. Mycelial extracts were obtained from dichloromethane extracts and their biophysical characteristics are analyzed by UV–vis spectrum and FTIR analysis. By spraying detection reagents onto TLC plates, the chemicals in dichloromethane extraction of chosen mushroom fungus mycelia were identified. Using the MTT test, the cytotoxic effect of dichloromethane extracts of selected mushroom fungi was evaluated on MCF7 Cell lines. Results: Mycelial extracts of P. djamor and P. florida exhibited significant antimicrobial effect on the bacterial and fungal pathogens tested. Dichloromethane mycelial extracts were obtained using soxhlet extraction which response positive for various phytochemical analysis. Detection of metabolites in thin layer chromatography using spray reagents documented one of few first accounts on flavonoids, anthroquinone and terpenoid compounds in P. djamor and P. florida. P. djamor and P. florida had dose-dependent antiproliferative activity against MCF7 cells, with an inhibitory impact of 55.72% and 64.47% percent at 125 µg/mL, respectively. Conclusion: The study has reported the identification with the potent biological activity of some of the key bioactive components present in DCM extracts from the mycelia of P. djamor and P. florida.

Author keywords

Antimicrobial Activity | Bioactive Constituents | MCF7 Cells | Oyster mushroom | Pleurotus | Thin-layer Chromatography

Indexed keywords

EMTREE drug terms: antibiotic agent | antifungal agent | antineoplastic agent | dichloromethane | flavonoid | fungal extract | phytochemical | Pleurotus djamor extract | Pleurotus florida extract | terpenoid | unclassified drug

Document details - Enhanced Group Key Distribution Protocol for Intra Group and Inter Group Communication Using Access Control Polynomial

Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)

Volume 13119 LNAI, 2022, Pages 225-232

9th International Conference on Mining Intelligence and Knowledge Exploration, MIKE 2021; Virtual, Online; ; 1 November 2021 through 3 November 2021; Code 287859

Enhanced Group Key Distribution Protocol for Intra Group and Inter Group Communication Using Access Control Polynomial(Conference Paper)

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Abstract

In today's Internet world, group communications have become very crucial for several applications. It is essential to maintain confidentiality during communication hence it is very important to efficiently and securely distribute the common keys to the group members and target group members for encrypting and decrypting the message. This paper proposes an access control polynomial based on Chinese remainder theorem (CRT) for group key distribution (ACPGKD). Also proposes an authentication protocol for dynamic members to join or leave the group using the polynomial to keep backward and forward secrecy in inter-group and intra-group communications. It has been shown that the proposed work is secure and computationally efficient. © 2022, Springer Nature Switzerland AG.

Author keywords

Chinese remainder theorem | Group key distribution | Polynomial based key communication | Rekeying | Secure group communication

Indexed keywords

Engineering controlled terms: Access control

Engineering uncontrolled terms: Chinese remainder theorem | Group communications | Group key distribution | Group key distribution protocols | Group members | Inter-group communication | Intra-group | Polynomial based key communication | Re-keying | Secure group communications

Engineering main heading: Polynomials

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Publisher: Springer Science and Business Media Deutschland GmbH

Document details - Type 2 Diabetes Prediction from the Weighted Data

Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)

Volume 13119 LNAI, 2022, Pages 1-12

9th International Conference on Mining Intelligence and Knowledge Exploration, MIKE 2021; Virtual, Online; ; 1 November 2021 through 3 November 2021; Code 287859

Type 2 Diabetes Prediction from the Weighted Data(Conference Paper)

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Abstract

The world is struggled also with diabetes as the number of diabetic patients is increased rapidly. As the diabetes lead to create related critical diseases, more researchers are interested to predict the diabetes. This paper proposes a model for predicting the type 2 diabetes using KNN with the weighted trained data of the identified significant features. The weighted data is calculated from the probability of occurrence of a data in a neighborhood. Pima Indian Diabetes dataset is used in the experiment. The obtained result show that proposed method gives better result than the existing results in the literature. © 2022, Springer Nature Switzerland AG.

Author keywords

KNN | Network pruning | Prediction | Type 2 diabetes | Weighted data

Indexed keywords

Engineering uncontrolled terms: Diabetics patients | KNN | Neighbourhood | Network pruning | Pima Indian Diabetes | Probability of occurrence | Type-2 diabetes | Weighted data

Engineering main heading: Forecasting

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Publisher: Springer Science and Business Media Deutschland GmbH

Kathirvalavakumar, T.; Research Centre in Computer Science, V.H.N. Senthikumara Nadar College, Madurai Kamaraj University, Tamil Nadu, Virudhunagar, India;

Document details - Hyperspectral Image-based Land Cover Prediction using Improved Elman Network Model

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13th International Conference on Advances in Computing, Control, and Telecommunication Technologies, ACT 2022; Virtual, Online; ; 27 June 2022 through 28 June 2022; Code 184560

Hyperspectral Image-based Land Cover Prediction using Improved Elman Network Model(Conference Paper)

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Abstract

This work anticipates a novel approach for classifying hyperspectral images using the machine learning classification approach. The machine learning (ML) approach is used for classification without the intervention of humans. The classification accuracy through ML is improved by examining the input images. Here, an improved Elman classifier (IEC) model is used to classify the input hyperspectral images accurately. This IEC model is designed for classifying the land cover regions exactly and intends to give higher classification accuracy. The increased classifier performance is compared with various prevailing approaches Random Forest (RF), Decision Tree (DT), Logistic Regression (LR), k-Nearest Network (k-NN), and Support Vector Machine (SVM). The anticipated model is utilized to enhance the classification accuracy drastically. Here, the hyperspectral images are used to classify the urban regions. The simulation is done with MATLAB 2016b simulation environment, and the experimental outcome provides superior performance and establishes a trade-off between the prevailing approaches. The prediction accuracy of IEC is 98.99%, precision is 64.66%, recall is 99.88%, and F1-measure is 74.46% which is comparatively higher than other approaches. © Grenze Scientific Society, 2022.

Author keywords

Elman classifier | Hyper-spectral images | land cover region | machine learning | prediction accuracy

Indexed keywords

Engineering controlled terms: Economic and social effects | Forecasting | Image classification | Image enhancement | MATLAB | Nearest neighbor search | Spectroscopy | Support vector machines

Engineering uncontrolled terms: Classification accuracy | Classifier models | Elman classifier | Hyper-spectral images | HyperSpectral | Image-based | Land cover | Land cover region | Machine-learning | Prediction accuracy

Engineering main heading: Decision trees

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Volume Editors: Stephen J.,Sharma P.,Chaba Y.,Abraham K.U.,P.K. A.,Mohammad N.,Thomas G.,Srikiran S.
Publisher: Grenze Scientific Society

Document details - GENDER DETERMINATION FROM EYE MORPHOMETRIC ANALYSIS AMONG MALAYSIAN CHINESE FOR PERSON IDENTIFICATION

International Journal of Medical Toxicology and Legal Medicine

Volume 25, Issue 1-2, 2022, Pages 10-13

GENDER DETERMINATION FROM EYE MORPHOMETRIC ANALYSIS AMONG MALAYSIAN CHINESE FOR PERSON IDENTIFICATION(Article)

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Abstract

Gender determination is a vital tool for the anthropologist during crime scene investigation, narrowing down the suspects and building a biological profile. During crime operations, criminals used to hide their faces by wearing masks or helmets but uncover their eyes for the vision that forms a valuable clue for identification. Here, the only choice of identification evidence are the eyes.Eye morphometryis affected by ethnicity, socioeconomic status, regions and country. Hence, this study investigated the relationship between gender and eye morphometry among t he Mal ays i an Chi nes e popul ati on, t he f i rs t-ever anthropological study in Malaysia. A total of 127 consenting volunteers (63 males and 64 females) aged 18 to 40 years were enrolled under the convenience sampling method. The eye morphometric measurements in this study are Interpupillary Distance (IPD), Interocular Breadth (IOB), Ocul ar Width (OW) and Binocul ar Breadth (BOB). Following the standard procedure, the measurements were taken using a digital vernier calliper. The data were analysed using independent t-test. All parameters showed significant gender differences except for IOB. Therefore, the eye morphometric analysis is a promising method for gender determination among the Malaysian Chinese population.

Author keywords

Eye morphometry | Forensic Anthropology | Gender | Malaysian Chinese

Indexed keywords

EMTREE medical terms: adolescent | adult | anthropometry | Article | body height | convenience sample | crime | ethnicity | female | forensic anthropology | human | human experiment | major clinical study | male | morphometry | optometry | sex determination | sex difference | sleep disordered breathing | social status | visual acuity | young adult

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Management and Science University		MSU

Funding text

Document details - Development of marine algae-encapsulated seed product for sustainable agriculture production—a novel approach

Biomass Conversion and Biorefinery

2022

Development of marine algae-encapsulated seed product for sustainable agriculture production—a novel approach

(Article in press)

Balasundaram, H., Suba Sri, M., Murugan, M.D., Monisha, P., Sivan, S.S., Sree, G.V., Subbiah, S., Shunmugiah, M., Sakthivel, V., Dineshkumar, R.

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Abstract

In rain-fed crop, after the first monsoon rain, the farmers plow their lands and sow seeds. Because of the lack of moisture in the soil, sown seeds fail to germinate and are eventually destroyed. As a result, the farmers suffer economic losses. To address this issue, seed encapsulation with seaweed powder was performed. Micro (Spirulina plantensis and Chlorella vulgaris) and macroalgae (Sargassum, Halimeda macrolaba, and Gracilaria) were collected from the southeast coast of India. The seaweeds were dried, powdered, and weighed about 1 g of each and were filled in a gelatin capsule. Soil profile (pH, EC, water percolation rate, moisture content, water holding capacity, capillary action, N, P, K, Zn, Fe, Cu, and Mn) was characterized before cropping. Abelmoschus esculentus, Raphanus sativus, Helianthus annuus, and Capsicum annum cultivation were done. The plant growth and yield were analyzed. The texture was clay loamy soil with micro and macronutrients present in it. In Abelmoschus esculentus, the number of leaves, plant height, and branches were increased as compared to control. Sargassum treatment shows highest yield (285.6 g) of A. esculentus. The nutritional quality was enriched in Sargassum treatment followed by C. vulgaris and S. platensis. In Raphanussativus L. cultivation, the estimated yield is as follows: in Sargassum (5.95 kg), C. vulgaris (5.10 kg), S. platensis (3.95 kg), and control (3.15 kg). The yield of Helianthus annuus L. cultivation showed increased in Sargassum treatment of about 200.5-g total seed weight. The yield was higher in Sargassum treatment as compared to C. vulgaris and Gracilaria in Capsicum annum cultivation. Sown seeds in novel seed encapsulation remain undamaged in soil until favorable rainfall occurs. Another benefit is that a marine source biofertilizer enriched with macro/micronutrients and hormones was encapsulated around the seeds, promoting plant growth and yield. The application of fertilizer to a large area is both costly and time consuming. In contrast, applying to specific roots around the plant is both effective and cost effective in terms of plant growth. This novel seed encapsulation with marine source biofertilizer has two advantages: (i) it protects the seed from damage and (ii) it supplements plant nutrition. As a result, farmers lose less and profit more by using less biofertilizer. Graphical abstract: (a) Powder of micro and macroalgae. (b) Seeds. (c) Encapsulation of seed with micro and macroalgae powder. (d) Encapsulated with macroalgae. (e) Encapsulated with microalgae. (f) Encapsulated with micro and macroalgae. (g) Dissolving of gelatin in soil. (h) Experimental field. (i) Capsule placing inside the soil. (j) Capsule in soil. (k) Seed germination. (l) Plant growth. (m) Ladies finger yield. (n) Sunflower yield. (o) Radish yield [Figure not available: see fulltext.]

Author keywords

Abelmoschus esculentus | Capsicum annum crop | Capsule | Helianthus annus | Microalgae fertilizer | Raphanus sativus | Seed encapsulation

Indexed keywords

Engineering controlled terms: Crops | Cultivation | Losses | Moisture | Rain | Seaweed | Seed | Soils | Solvents | Textures

Document details - Effect of Substrate Temperature on Spray Deposited Zinc Sulphide Thin Films

International Journal of Thin Film Science and Technology

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Effect of Substrate Temperature on Spray Deposited Zinc Sulphide Thin Films(Article)

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Abstract

Thin films of Zinc sulphide (ZnS) on glass substrate were prepared by chemical spray pyrolysis technique using precursor solutions of zinc chloride and n–n dimethyl thiourea at substrate temperatures of 598 K and 623 K. X ray diffraction analysis exposed the polycrystalline nature with growing crystallinity with respect to substrate temperature. The preferential orientation growth of ZnS compound increased with relatively higher substrate temperature having hexagonal structure along (019) plane. At 623 K, The size of the Zinc sulphide crystallite with nano dimension was determined using the Full Width Half Maximum value of the Bragg peak. The surface morphology had been analyzed using scanning electron microscope. The compositional analysis had been observed by Energy Dispersive Analysis by X-ray spectrum. FTIR study had been carried out for the bond evaluation. © 2022 NSP Natural Sciences Publishing Cor.

Author keywords

chalcogenides crystallite energy dispersive spray stretching mode

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Topic:

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Document details - Structural and Optical Characterization of Spray Deposited Cadmium Sulphide Thin Film

International Journal of Thin Film Science and Technology

Volume 11, Issue 1, January 2022, Pages 111-114

Structural and Optical Characterization of Spray Deposited Cadmium Sulphide Thin Film(Article)

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[b]Department of Physics, V.H.N.S.N. College, Tamilnadu, Virudhunagar, 626 001, India

Abstract

Cadmium sulphide (CdS) thin film was prepared on glass substrate by chemical spray pyrolysis technique using the precursor solutions of cadmium chloride (CdCl2) and thiourea [(NH2)2CS] at the substrate temperature of 573 K.X ray diffraction analysis revealed the polycrystalline nature and the preferential orientation growth of CdS compound having hexagonal structure along (002) plane. The size of the cadmium sulphide crystallite with nano dimension was determined using the Full Width Half Maximum value of the Bragg peak. The surface morphology had been observed on the surface of this film using scanning electron microscope. The optical absorption and transmittance spectra have been recorded for these films in the wavelength range 400–800 nm. The optical band gap energy is found to be 2.42 eV with direct allowed band-to-band transition for film deposited at 573 K. The functional group is identified using FTIR spectra.

Author keywords

Absorption | Band Gap | Crystallite Size | Thin Film | Transmittance

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