E-mail : josecol27998@gmail.com
Website: www.sjctnc.edu.in

3.4.3 JOURNAL PAPERS PUBLISHED

2021 - 2022

Pandemic through the lens of Literature

Author: S. Aishwarya, M.Phil-English,
St. Joseph's College of Arts and Science (Autonomous)
Cuddalore-01.

Co-author: Mr. V.R. Suresh Kumar
(Assistant Professor & Head. PG & Research Department of English**),**
Department of English,
St. Joseph's College of Arts and Science (Autonomous)
Cuddalore-01.

Abstract:
Literature has been a tool for discussing social and cultural conventions that includes the pandemic literature. The prevalence of the disease has been threatening people in recent years. In contemporary times there are a lot of works that concern the pandemic and its impact which can be either economical depression or threat to human health. The Pandemic Literature not only discusses the impacts of the flu but they also bring solutions. *The Plague* by Albert Camus is a breakthrough in pandemic Literature. The novel is based on the terrors of the cholera epidemic in 1849 that killed a large population like Coronavirus. *The Plague* not only stresses about the pandemic but also gives a solution for the pandemic. The paper discusses about the newer dimensions of literary studies that concern human health and awareness of pandemics.

Keywords: Pandemic Literature, Disease, threats, solutions.

The spread of the Coronavirus has been threatening human beings in recent times. But the history of the pandemic goes back to 430 BC where there was an unknown flu that killed a huge population in the northern part of Greece. Later in the year 1347 'The Plague' terrified people. This plague was caused by rats and it nearly killed 25 million people in Europe which is almost a third of the continent's population. Since people found the mysterious infection causing a blackened patch in lymph nodes they called it 'The Black Death'. The time of the Black Death is an important time in world history and literature. People's lifestyle has changed shortly after the infection caused by the plague throughout the world. However the plague ended with the quarantine where the affected people live in isolation. The Spanish flu was the next deadliest disease which started to spread in 1918.

Smart fuzzy graph

J Jon Arockiaraj, P M Chaarumathi

PG & Research Department of Mathematics,St. Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamil Nadu, India.

E-mail: jonarockiaraj@gmail.com, chaarumathi1696@gmail.com

Abstract: In recent times, the internet of things has gained more popularity. The internet of things connects people, objects and machines apart from distance through cloud based internet. In this paper, we have introduced the smart fuzzy graph along with some basic properties and related concepts. The aim of this paper is to solve some authentic real life problems using smart fuzzy graph.

Keyword: Smart fuzzy graph.

1. INTRODUCTION

Graph theory is useful in modelling fundamental attributes of given systems which consist of limited components. These can be utilized to constitute railway lines, communication network, traffic system, and so on. A given set of objects can be represented using a graph where each object is considered as vertex whereas the relation among these objects is entitled as an edge. Relationship among the items need not be absolutely characterized and hence the concept of an imprecise and the fuzziness arises.

The concept of uncertainty and vulnerability, in real life was presented by L.A. Zadeh in 1965, which he termed as fuzzy sets and fuzzy logics. The primary definition of a fuzzy graph was coined by Kauffman. In later period the establishment for fuzzy graph theory was proposed by Rosenfeld, Yeh and Bang. The relationship between the objects was given by A. Rosenfeld using fuzzy relation. Additionally he presented the analogues of several premise fuzzy graph-theoretic concepts, which include trees, forests, sub-graphs, connectedness, etc. Furthermore major contribution notably as connectivity on vertex and edge were presented by Yeh and Bang in fuzzy graphs based on Zadeh's concept of fuzzy.

In recent time advances in connecting people around the globe through smart phones, computers, smart appliances, advanced network, etc., these smart things together has gained more popularity. This kind of connection between the people and the smart things is made possible through the internet of things, which acts as a platform for the smart appliances to work independently. The connected smart appliances speak among themselves to perform the scheduled or the un-scheduled task efficiently.

In this paper, the concept smart fuzzy graph has been introduced. The internet of things as mentioned above can be taken as a smart fuzzy graph and solved to find the connection among the elements in the network. This paper also provides some basic properties and related concepts. Also in this paper we have tried to solve some real life problems using smart fuzzy graph.

Journal of Molecular Structure 1234 (2021) 130182

Contents lists available at ScienceDirect

Journal of Molecular Structure

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

Spectroscopic (FT-IR, FT-Raman, UV-Vis) molecular structure, electronic, molecular docking, and thermodynamic investigations of indole-3-carboxylic acid by DFT method

M. Sathish[a], L. Rajasekaran[b], D. Shanthi[c], N. Kanagathara[d], S. Sarala[e], S. Muthu[b,f,*]

[a] Department of Physics, St Joseph's College of Arts and Science, (Autonomous), Cuddalore, 607 001, Tamilnadu, India
[b] Department of Physics, Arignar Anna Govt. Arts College, Cheyyar 604 407, Tamilnadu, India
[c] Department of Chemistry, Vel Tech Multi Tech Dr. Rangarajan Dr. Shakuntala Engineering College, Avadi, Chennai, 600 062, Tamilnadu, India
[d] Department of Physics, Saveetha School of Engineering, SIMATS, Thandalam, Chennai 602 105, Tamilnadu, India
[e] Department of Physics, Kanchi Shri Krishna College of Arts and Science, Kanchipuram, 631 551, Tamilnadu, India
[f] Department of Physics, Puratchi Thalaivar Dr. M. G. R Govt. Arts and Science College, Uthiramerur, 603 406, Tamilnadu, India

Article info

Article history:
Received 2 December 2020
Revised 17 February 2021
Accepted 18 February 2021
Available online 23 February 2021

Keywords:
DFT
FT-IR
FT-Raman
NLO
Hirshfeld

Abstract

The structural and various spectroscopic parameter were determined by using quantum mechanical calculation for Indole-3-carboxylic acid (I3CA) molecule by B3LYP/6–311++*G* (d, p) method in this work. The optimized geometrical parameters were compared with XRD data. The spectral studies I3CA molecule were adopted by FT-IR, FT-Raman recorded 4000–400 cm^{-1} and 3500–50 cm^{-1}. The recorded and calculated wavenumber are found to be good agreement. The UV–Vis absorption spectrum was recorded in the range of 200–600 nm. The charge transfer in the molecule is deeply analyzed by using NBO approach. Intermolecular interaction of the 13CA molecule is analyzed using Hirshfeld surface and finger print analysis. The I3CA has been screened to anti-microbial activity and found to exhibit anti-bacterial effects. Molecular docking results suggest that I3CA may exhibit inhibitory activity against different cancer protein.

1. Introduction

Indole-3-acetic acid (I3CA) is the most common naturally occurring plant hormone of the auxin class. It is the best known of the auxins, and has been the subject of extensive studies by plant physiologists. Indole and its derivatives are especially important aromatic chemicals both in man-made and natural systems, and the aromatic indole ring often acts as an active center in many bioactive chemicals. Indole-3-carboxylic acid (I3CA) which is an important intermediate in medicine and the pesticide field. Indole moiety occurs widely in synthetic and natural products containing an important class of therapeutic agents [1,2]. Recently, antioxidant activity of synthetic indole derivatives and their possible activity mechanisms have been widely studied. In addition to the traditional O–H bond type antioxidant, tricyclic amines having N–H bond functions as the antioxidant have attracted much research attention because aromatic amines have always been the central structure in many currently used drugs [3]. Derivatives of indole substituted carboxylic acid have more biological interest due to it has various biological activities such as anticonvulsant effects [4,5] antihypertensive [6] and some derivatives have anticancer, antibacterial, antifungal, anthelmintic and anti-inflammatory activities have been reported found in literature [7,8]. Numerical studies have been carried out by various researcher on indole derivatives [9–12]. The main objective of this paper is to find theoretical methods that would offer a higher certainty of finding molecular structure parameters and vibrational wavenumbers. In the present study, in order to understand the structure and functions of I3CA in quantum level, a quantum mechanical concept called density functional theory followed. The optimized geometry and vibrational frequencies are compared with experimental FT-IR, FT-Raman, and UV–Vis spectra. By natural bond orbital analysis (NBO) the intermolecular interactions and the stability of I3CA are obtained. The HOMO and LUMO calculation give the stability and hard and soft nature of the compound. The properties of the structural geometry, Molecular Electrostatic Potential (MEP) and non-linear optical properties of the title compound at B3LYP/6–311G++ (d, p) level were studied. The effect of temperature on the compound and its thermodynamic parameters entropy, enthalpy, and heat capacity are analyzed. To get the drug properties of the compound, drug-

* Corresponding author.
E-mail address: mutgee@gmail.com (S. Muthu).

https://doi.org/10.1016/j.molstruc.2021.130182
0022-2860/

Journal of Molecular Liquids 336 (2021) 116335

Contents lists available at ScienceDirect

Journal of Molecular Liquids

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

Structural (monomer and dimer), wavefunctional, NCI analysis in aqueous phase, electronic and excited state properties in different solvent atmosphere of 3-{(E)-[(3,4-dichlorophenyl)imino]methyl} benzene-1,2-diol

M. Maria Julie [a], T. Prabhu [b], E. Elamuruguporchelvi [c], Fazilath Basha Asif [d], S. Muthu [e,f,⇑], Ahmad Irfan [g,h]

[a] Department of Physics, St. Joseph's College of Arts and Science (Autonomous), Cuddalore 607001, Tamil Nadu, India
[b] Department of Physics, A. V. C. College (Autonomous), Mayiladuthurai 609305, Tamil Nadu, India
[c] Department of Physics, Sri Sankara Arts and Science College, Kancheepuram 631561, Tamil Nadu, India
[d] Department of Physics, Islamiah College (Autonomous), Vaniyambadi 635752, Tamil Nadu, India
[e] Department of Physics, Arignar Anna Govt. Arts College, Cheyyar 604407, Tamil Nadu, India
[f] Department of Physics, Puratchi Thalaivar Dr. M. G. R. Govt. Arts and Science College, Uthiramerur 603406, Tamil Nadu, India
[g] Research Center for Advanced Materials Science, King Khalid University, P.O. Box 9004, Abha 61413, Saudi Arabia
[h] Department of Chemistry, College of Science, King Khalid University, P.O. Box 9004, Abha 61413, Saudi Arabia

ARTICLE INFO

Article history:
Received 2 April 2021
Revised 21 April 2021
Accepted 26 April 2021
Available online 29 April 2021

Keywords:
DFT
NBO
NCI analysis
Electron localization function
Localized orbital locators
Molecular docking

ABSTRACT

In this present work, structural, wave functional and electronic properties of 3-{(E)-[-(3,4-dichlorophenyl)imino]methyl}benzene-1,2-diol are investigated by utilizing Gaussian 16W density functional theory tool. Optimized geometrical properties, wave functional properties like, localized orbital locators, electron localization functions and reduced density gradient are examined in aqueous phase. Band gap energies with solvation effect are calculated from HOMO-LUMO orbital's with different solvent molecules. Reactive sites are identified from MEP analysis in various solutions. Excited energies are calculated using TD-DFT method in different polar and non polar liquids. Intra molecular and intermolecular interactions are studied by NBO method to explain the charge transfer within the molecules. Spectroscopic (IR and Raman) wave numbers for headline compound are predicted computationally in monomer and dimer form. Moreover, adsorption, metabolism, excretion, distribution with toxicity are computed. Finally, to find biological and anticancer activities of title compound molecular docking study is performed.

1. Introduction

Imines were first documented in 1864 and they have been used for different biological clinical, industrial and pharmaceutical applications [1]. 3-{(E)-[-(3,4-dichlorophenyl) imino]methyl} benzene-1,2-diol (CPIMBD) has secondary amine, 1,2 diol and halogenated alkyl functional groups. The halogenated compound have wide range applications organic dyes and in pigments [2]. CPIMBD is a heterocyclic compound, for different agricultural, chemical and biological (antibacterial, anticonvulsant, antitumor, and anti-cancer) uses, heterocyclic compounds are important to research [3–6]. CPIMBD related Schiff base ligand Dopamine was synthesized with Zn(II),Co(II),Ni(II), and Cu(II) complexes. In addition, a wide variety of biological processes, antitumor,antibacterial, and anticarcinogenic antifungicidal properties have shown to possess vast amounts of Schiff bases [7]. Natural charges were computed and reported for the first two conformers of (R)4(2-amino-1-hydroxyethyl)benzene-1,2-diol [8]. High-silica mordenite with Al_2O_3 / SiO_2 with adding benzene-1,2-diol as different ratios were prepared and reported as a system [9]. Intermolecular vibrational studies using THz absorption spectra for benzene — 1,2, 1,3 and1,4-diol were discussed in earlier studies [10]. The molecular weight and empirical formula for CPIMBD compound is 282.11 and $C_{13}H_9Cl_2NO_2$.

In this present work, we have investigated computationally the optimized geometrical structures, topological studies like lolcalized orbital locater (LOL), electron localization function (ELF). Reduced density Gradient (RDG) and Non covalent interaction analysis plays a major role in biological systems, for the analysis of hydrogen bonding of the molecules [11]. The key goal of investigating the

⋆ Corresponding author at: Department of Physics, Arignar Anna Govt. Arts College, Cheyyar 604407, Tamil Nadu, India.
E-mail address: mutgee@gmail.com (S. Muthu).

https://doi.org/10.1016/j.molliq.2021.116335
0167-7322/

Chemical Data Collections 33 (2021) 100701

Contents lists available at ScienceDirect

Chemical Data Collections

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

Data Article

Synthesis, spectroscopic, quantum computation, electronic, AIM, Wavefunction (ELF, LOL) and Molecular Docking investigation on (*E*)-1-(2,5-dichlorothiophen-3-yl)-3-(thiophen-2-yl)-2-propen-1-one

S. SangeethaMargreat[a,b], S. Ramalingam[c], Helmi Mohammed Al-Maqtari[d,e], Joazaizulfazli Jamalis[d], S. Sebastian[b], S. Periandy[f], S. Xavier[b,*]

[a] Research Scholar, Department of Physics, AVC college, Mayladuthurai, Tamilnadu, India
[b] Department of Physics, St.Joseph's College of Arts & Science (Autonomous), Cuddalore, Tamilnadu, 607 001, India
[c] Department of Physics, AVC college, Mayladuthurai, Tamilnadu, India
[d] Department of Chemistry, Faculty of Science, UniversitiTeknologi Malaysia, 81310 Johor Bahru, Johor, Malaysia
[e] Department of Chemistry, Faculty of Education, Hodeidah University, Hodeidah, Yemen
[f] Department of Physics, KanchiMamunivarCenter for Post Graduate Studies and Research, Lawspet, Puducherry, 605008, India

Article info

Article history:
Received 25 October 2020
Revised 25 March 2021
Accepted 9 April 2021
Available online 11 April 2021

Keywords:
Spectroscopic
RDG
Wavefunction
ELF
Molecular Docking

Abstract

The compound (*E*)-1-(2,5-dichlorothiophen-3-yl)-3-(thiophen-2-yl)-2-propen-1-one (DClTP) was synthesized and analyzed using FT-IR, FT-Raman and ^{1}H and ^{13}C NMR spectroscopic tools. The Gaussian computations were carried out by DFT method using B3LYP functional and 6–311G(d,p) as basis sets. The $^{13}CNMR$ and ^{1}H NMR were calculated by using the Gauge Independent Atomic Orbital (GIAO) method. AIM topology analysis was done on the molecule. NBO analysis was used to study the donor – acceptor interaction in the molecule. Chemical reactive site of the molecule was analyzed in MEP profile. The significance of Mulliken charge in the molecule and corresponding charge in Fukui function were also discussed. The different density of states was also computed by the same method. Various thermodynamic parameters were also discussed at various temperatures. Molecular docking was carried out using Autodock programming package for DClTP compound which exhibits the inhibitor human chorionic gonadotropin protein.

* Corresponding author.
E-mail address: puduvaixavier@gmail.com (S. Xavier).

https://doi.org/10.1016/j.cdc.2021.100701
2405-8300/

BioNanoScience
https://doi.org/10.1007/s12668-021-00864-z

Evaluation of Bioactive Potential of a *Tragia involucrata* Healthy Leaf Extract @ ZnO Nanoparticles

Udhayan S[1] • Udayakumar R[1] • Sagayaraj R[2] • Gurusamy K[1]

Accepted: 5 April 2021

Abstract

The aim of the present work is to prepare ZnO nanoparticles (NPs) from *Tragia involucrata* leaf extract by low-cost technology. The extracted ZnO NPs were calcined at different temperatures such as 400 °C (TZ 1), 450 °C (TZ 2), and 500 °C (TZ 3). The as-prepared ZnO NPs were characterized using techniques such as TG-DTA, XRD, FTIR, and SEM. Based on the observations made using the above techniques, the calcination temperature was fixed at 450 °C and EDS, HR-TEM, and VSM studies were made for these samples. The XRD analysis revealed the hexagonal structure with the average crystallite size being ~ 27 nm for the different samples (TZ 1, TZ 2, and TZ 3). The occurrence of FTIR peaks in the region 600-450 cm^{-1} confirmed the presence of the Zn-O bond. SEM and HR-TEM images indicated the rod and conical shapes for the bio-synthesized ZnO NPs, and the d-spacing value has been found to be 0.24 nm with (1 0 1) lattice plane, matching very well with that of XRD. The SAED pattern clearly portrayed annular rings indicating the single crystalline nature. The results of VSM studies indicated a diamagnetic nature at room temperature. The green synthesized ZnO NPs were screened for antibacterial and antifungal activities. Among the bacteria used, *Klebsiella pneumoniae* has secured maximum sensitivity (22 mm) and *Proteus vulgaris* has secured minimum sensitivity (12 mm). In the case of fungal studies, *Aspergillus niger* showed a maximum sensitivity (16 mm) as compared to *Aspergillus flavus* (15 mm). Thus, it is concluded that the bio-synthesized ZnO NPs using *Tragia involucrata* leaf extract may serve as a potential candidate for biomedical applications.

Keywords Nanoparticles · Bioactive · Antibacterial · Antifungal · *Tragia involucrata* · ZnO

1 Introduction

A wide range of uses is found due to the particular physical characteristics and chemical reactivity of metal and metal oxide NPs [1]. Zinc oxide (ZnO) is a solid semiconductor substance that crystallizes as a quartzite arrangement with a direct energy gap of ~ 3.2 eV at ambient temperature [2]. It is used in a wide range of fields, such as electrical instruments, devices for communication, sensing devices, beauty products, ecology, bioscience, and the health care industry [3-5]. ZnO has been licensed by the US FDA as GRAS (generally accepted as safe as metal oxide). ZnO is included in the matrix of packaging, free to interact with food products that provide preservative effects [6]. In sunscreens, paints, and coatings, ZnO NPs are commonly used because they are translucent to visible light and have high UV absorption [7] and they are also used as ingredients in antibacterial creams, ointments and lotions, self-cleaning glass, ceramics, and deodorants [8]. NPs have appeared as a new antimicrobial branch, and ZnO NPs have also reported their existence as potential antimicrobial agents. The antimicrobial ability of ZnO NPs has recently been investigated and tends to have both antibacterial and antifungal properties. These are efficient against both Gram-positive and Gram-negative bacteria and also have significant activity against more aggressive bacterial spores [9]. Doping of ZnO NPs was also found to increase the antimicrobial activity of ZnO NPs with other metals, including gold, silver, chromium, etc. [10, 11]. ZnO nanosuspension inhibitory effects are often associated with their size and concentration, with smaller particles at higher concentrations providing greater inhibitions [12, 13]. The production of natural processes for the preparation of chemical elements and alloys has grown to become a major feature in green nano-fields in recent years. The biosynthesis of plant-based ZnO NPs is emerging as an eco-friendly and cost-effective process in light of this. In some areas, ZnO NPs have been prepared in a variety of ways

✉ Udayakumar R
drrurspub1@gmail.com

[1] Department of Physics, Annamalai University, Annamalainagar, Tamil Nadu 608 002, India

[2] PG & Research Department of Physics, St. Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamil Nadu 607001, India

Published online: 20 April 2021

Chemistry Africa
https://doi.org/10.1007/s42250-022-00438-w

ORIGINAL ARTICLE

Structural, Spectroscopy and Magnetic Properties of Copper Doped Nickel Ferrite by the Co-precipitation Method

J. Subhashini[1] · A. Christy Ferdinand[1] · R. Sagayaraj[2]

Received: 21 February 2022 / Accepted: 18 July 2022

Abstract

The Copper doped nickel ferrites were integrated by the co-precipitation method at 900 °C in this study. XRD patterns reveal the synthesized material are in single phase, face-centered Cubic (FCC) spinel structure and got good crystallinity with 10–20 nm in size. FT-IR confirmed high (426–456 cm^{-1}), low (346–387 cm^{-1}) frequency integration of tetrahedral and octahedral voids and confirmed inverse spinel structure. The ferrimagnetic properties of all synthesized materials at different concentrations were declared by the VSM. EPR analysis confirmed that existence of paramagnetic centers proves the evidence of free radicals in the ferrite materials.

Keywords Co-precipitation · Nanoparticle · Ferrimagnetisms · VSM · Free radicals · Ferrite

1 Introduction

Ferrite and its composite ferrites are produced by various methods. Some methods, such as hydrothermal [1, 2], sol–gel [3], Auto combustion [4, 5] and co-precipitation [6, 7] are widely used by researchers. Co-precipitation is a simple and economical method of preparing various components of mixed ferrites. Therefore, the co-precipitation approach is one of the essential avenues for success produced by ferrites. Its structural properties, optical properties, thermal properties, magnetic properties and electrical properties were studied by young researchers. However, ferrite products have a legitimate interest in a wide variety of applications such as high-speed digital tapes, radio frequency circuits, optoelectronics, phase shifters, electrochemical technology, isolators, transformer cores, and superior quality filters [8]. As larger ions attempt to fill the voids left by smaller ions, the lattice constants in the resulting spinel structure increase. As the pH value was most important in the synthesis of nanoferrite, which decreased from 11 to 9, the dielectric and magnetic losses were significantly increased to larger values [9]. The octahedral stretching vibrational mode of metal–oxygen is indicated by the band at 385–450 cm^{-1}, whereas the tetrahedral stretching vibrational mode is characterized by the band at 550–650 cm^{-1}. There were out of plane bending vibrations of O–H stretching at 1058 cm^{-1}. The H–O–H stretching mode of adsorbed or free water molecules is related with the vibrational band at 1633 cm^{-1} [10]. Metal oxide stretching vibrations (Ni–O and Fe–O) at the octahedral B-site and Fe–O stretching vibrations at the tetrahedral A-site is related to the primary and secondary absorption bands at 449 cm^{-1} and 583 cm^{-1}, respectively. Cation coordination in the ferrite form has been demonstrated [11]. Nickel ferrite is an integrated and occupied on different platforms. (Fe^{2+}) $(Ni^{2+}Fe^{3+})$ O_4, this compound is occupied by a half-half tetrahedral (A) site and an octahedral site (B) of iron (Fe^{3+}). Divalent cations (Fe^{2+} occupy the tetrahedral site) while divalent and trivalent cations (Ni^{2+} and Fe^{3+}) occupy the [12, 13] octahedral site (B site). Since the divalent and trivalent cations are displaced by each other due to the small radii of the cations, the products estimate the length in the grain parameter with subject to Vegard's law. Therefore, it shows the formation of ferromagnetism, and antiparallel spins between Fe^{3+} in the tetrahedral site and Ni^{2+} in the octahedral site [14]. The ferrite surface affects the particle size. The structural and ionic properties on the surface of the particles lead to the misperception of the grain symmetry presenting the anisotropy. A significant

✉ A. Christy Ferdinand
christyferdinand2@gmail.com

✉ R. Sagayaraj
sagayarajnancy@gmail.com

1 PG & Research Department of Physics, Periyar Arts College, Cuddalore, Tamilnadu 607001, India

2 PG & Research Department of Physics, St. Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamilnadu 607001, India

Published online: 08 August 2022

Applied Physics A (2021) 127:502
https://doi.org/10.1007/s00339-021-04653-z

Applied Physics A
Materials Science & Processing

Microstructure and magnetic properties of $Cu_{0.5}Co_{0.3}Mo_{0.2}Fe_2O_4$ ferrite nanoparticles synthesized by coprecipitation method

R. Sagayaraj[1] · S. Aravazhi[2] · G. Chandrasekaran[3]

Received: 5 April 2021 / Accepted: 1 June 2021

Abstract
In the current research, $Cu_{0.5}Co_{0.3}Mo_{0.2}Fe_2O_4$ mixed ferrite nanoparticles have been synthesized using the coprecipitation method. XRD patterns show the development of polyphasic copper, cobalt and molybdenum mixed spinel composition. The particle size of ferrite system is 16 nm and they are nanoparticles. The values of lattice constant are determined to be around 8.368 Å obtained for the highest peak (311). FTIR spectroscopy shows the lower octahedral and higher tetrahedral frequency alignment of ions in the spinel ferrite corresponding to 471 $cm^{-1}$and 550 cm^{-1}vibration modes, respectively. TEM micrographs illustrate spherical morphology and their grain size less than 50 nm, which correlates well with XRD crystallite size. VSM shows excellent ferrimagnetic properties vividly with a high coercivity (985.29 G). The high coercivity materials can make the active components of magnetic memory devices.

Keywords Coprecipitation · Nanoparticles · Ferrimagnetic properties · Coercivity · Ferrites

1 Introduction

Magnetic spinel ferrites have the usual formula of 'AB_2O_4,' where 'A^{2+}' and 'B^{3+}' ions have 'tetra(A)' and 'octa[B]' voids. Oxygen ions (O^{2-}) form a cubic arrangement with iron ions placed at two separate interstices between them [1, 2]. Ferrites composite attract more attention because of their high electrical resistance, special thermal properties and important magnetic properties when used as high-frequency devices [3, 4]. Unit cell of the magnetic spinel ferrite lattice contains 32 octahedral voids and 64 tetrahedral voids accessible for the respective cations, among which only 24 octahedral voids and 8 tetrahedral voids are engaged by the relevant cations [5–11]. Cobalt ferrite is famous for its inverse spinel structure, where Co^{2+} cations are octahedral and $Fe^{3+}$and Fe^{2+}cations are similarly distributed due to ionic radii in octahedral and tetrahedral voids [12]. Among spinel ferrites, cobalt spinel ferrite has special significance from a biomedical point of view due to its high saturation magnetization and high permeability [13]. Thomas Dippong et al. used calcinations at 1000 °C to create a $Co_xFe_{3-x}O_4$ ferrite nanoparticle. The materials had a cubic single phase. The average crystallite size ranges from 30 to 73 nm. The two subspectra arose as a result of Fe^{3+} in tetrahedral and octahedral cooperation, which was confirmed, as well as the formation of spinel ferrite. The coercive field value (1.078kOe) of cobalt ferrites is greater than the bulk coercive field value (980Oe) [14]. The hysteresis loops of $Zn_{0.5}Co_{0.5}Fe_2O_4/SiO_2$ particles annealed at 700 °C revealed superparamagnetism properties. This behavior is caused by the uncompensated spins of antiferromagnetic clusters, which generate massive effective spins that interact with the applied magnetic field. Because antiferromagnetic interactions exist in both intra- and inter-cluster spins, the magnetic properties of their samples were discovered to differ from those of conventional super paramagnetic systems. The hysteresis loops of ferrites annealed at 1000 °C show ferromagnetic behavior that is related to the distribution of Fe^{3+} and Co^{2+} ions within the lattice as well as crystallite size [15]. The fraction of the ferromagnetic phase increases with increasing annealing temperature, and the ferromagnetic behavior becomes dominant when the annealing temperature exceeds 400 °C [16]. In the

✉ R. Sagayaraj
sagayarajnancy@gmail.com

1 PG and Research Department of Physics, St. Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamilnadu 607001, India

2 Department of Physics, Arignar Anna Government Arts College, Villupuram, Tamilnadu 605602, India

3 Department of Physics, Pondicherry University, Puducherry 605014, India

Published online: 08 August 2022

International Nano Letters
https://doi.org/10.1007/s40089-021-00343-z

REVIEW

Review on structural and magnetic properties of (Co–Zn) ferrite nanoparticles

R. Sagayaraj[1] · S. Aravazhi[2] · G. Chandrasekaran[3]

Received: 23 December 2020 / Accepted: 17 May 2021

Abstract

Mixed spinel ferrites are very popular because of their excellent flexible magnetic and electronic properties. This systematic review followed the guidelines for repotting physicochemical properties of Co–Zn ferrite. Non-magnetic cations doped (Zn^{2+}) cobalt ferrite to tune the structural and magnetic properties of the mixed spinel ferrite. In this review, paper focuses on various synthesis methods, change of pH, change of sintering, change of dopant and change of surfactant summarized for real-time applications.

Keywords Nanoferrite · Nanomaterials · Nanoproperties · Nanoparticles · Nanospinel ferrites

Introduction

Ferrites are materials of ferromagnetic oxide that have high resistivity and permeability. While ferrite magnetization is less than half the saturation of ferromagnetic alloys, it has advantages such as higher frequency applicability, high resistivity, lower price, higher heat and higher resistance to corrosion. The spinel ferrites have excellent potential applications in many fields, such as anti-cancer drugs, active components of ferrofluids, antennae, antenna rods, biomedical sensors, biomedicine electronics, catalysis, catalytic insulators, coatings, cellular therapy, electronic circuits power delivering devices, electromagnetic interference suppression, filters circuit, computer, colour imaging, cellular phones, drug delivery, digital diaries, disk recording, detoxification of biological fluids, ferrofluids, flexible recording media, gas detectors, information and energy storage media, instance microwave ovens, magnetic refrigeration, magnetic refrigeration, magnetic drug delivery, memory storage devices, mechanical hardness, magnetic resonance imaging (MRI) contrast enhancement, magnetic recording media, medical devices, magnetic sensors, magnetic cell separation, magnetic devices, magnetic anisotropy, microwave fascinating materials, magnetic soundtrack, microwave devices, magneto-optical recording media, switching devices, transformer cores, high-frequency systems, hyperthermia treatment, high-density digital recording disc, high-frequency transformers, satellite communication, solar energy conversion, sensors, satellite dish rod, magnetic fluid, permanent magnets, photo catalysis, hard disc recording media, radar devices, recording tapes, recording heads, recorder, read–write heads, high-frequency electric devices, video tape, video camera, transformer cores, tissue repair, TV, permanent magnets, loading coils, local communication [1–5]. Magnetism was observed as early as 800 BC in a naturally occurring material called load stone (Fe_3O_4) which was used for navigation purposes. Ferrites are very famous magnetic materials. Ferrites are dark grey and black. Ferrites are insulator materials possessing both electrical and magnetic attributes. Ferrites have less value of dielectric loss. Ferrites have a high value of permeability, constant magnetization in M–H curve and electrical resistivity [6]. In materials such as Fe, Ni, Co and Mn, let us describe the roots of magnetism. Let us begin with the simple fact that atoms create materials. Each atom contains an electron(s). Most people know that they have charging electrons. What people have not understood for many years (a century ago) is that electrons also have a spin-like property. There might

✉ R. Sagayaraj
sagayarajnancy@gmail.com

1 PG& Research Department of Physics, St. Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamilnadu 607001, India

2 Department of Physics, Arignar Anna Arts College, Villupuram, Tamilnadu 605602, India

3 Department of Physics, Pondicherry University, Pondicherry 605014, India

Published online: 08 August 2022

Synthesis and characterization of piperazine containing polyaspartimides blended polysulfone membranes for fuel cell applications

Original Paper Published: 26 February 2021

Volume 25, pages 1421–1431, (2021) Cite this article

Journal of Solid State Electrochemistry

Aims and scope

Submit manuscript

A. Amalorpavadoss, N. Kavitha, A. Chandramohan, P. Santhiya & K. Dinakaran

Abstract

A new polyaspartimide was synthesized via a Michael addition reaction of an aromatic bismaleimide (BMI) with aminoethylpiperazine (AEP) at 1:1 molar ratio. IR and NMR spectral techniques were used for the characterization of the newly synthesized polyaspartimide (PAI). The copolymer, piperazine containing polyaspartimide, was then blended with polysulfone (Psf) at 3 and 6 wt % by dissolving in the solvent DMF. The blend membranes are studied for their water uptake, ion exchange capacity, swelling ratio, chemical stability, morphology, and proton conductivity. It is observed from morphological studies that the porous structure of polysulfone has been retained even after the incorporation of PAI. The percentage water uptake of membranes of different

Coordination of indium monohalide with group-10 metal carbonyls [TM(CO)$_3$(InX)]: a DFT study

Original Paper Published: 07 August 2020

Volume 75, pages 311–324, (2021) Cite this article

Francisxavier Paularokiadoss, Sekar Alagan & Thayalaraj Christopher Jeyakumar

A Correction to this article was published on 25 August 2020

This article has been updated

Abstract

A DFT study carried out on the diatomic ligand of InX coordinated with metal carbonyls [TM(InX)(CO)$_3$] (TM = Ni, Pd, and Pt) using B3LYP, CAM-B3LYP, M06-2X level of theories with the basis sets 6-31G*, 6-311G**, LANL2DZ, and SDD. The NBO analysis confirms the π bonding contribution is lesser than that of σ (sigma) bonding contribution in TM–InX bond and it emphasizes the greater contribution by the indium atom. The orbital interactions occur between indium and the transition metal (TM) via σ donation TM ←

Computational and Theoretical Chemistry 1197 (2021) 113139

Contents lists available at ScienceDirect

Computational and Theoretical Chemistry

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

Theoretical studies of group 10 metal gallylene complexes [TM(CO)$_3$(GaX)]

Francisxavier Paularokiadoss [a,b], Thiruthuvadevaraj Antony Sandosh [a], Alagan Sekar [b,*], Thayalaraj Christopher Jeyakumar [c,*]

[a] PG & Research Department of Chemistry, St. Joseph's College of Arts & Science (Autonomous), Cuddalore, India
[b] PG & Research Department of Chemistry, Nehru Memorial College (Autonomous), (Affiliated to Bharathidhasan University), Puthanampatti, Tiruchirappalli, India
[c] PG & Research Department of Chemistry, The American College (Autonomous), Madurai, India

ARTICLE INFO

Keywords:
Gallium monohalides
Carbonyl
FMO
EDA
DFT

ABSTRACT

Reaction and electronic structural analysis of transition metal carbonyls [TM(CO)$_3$] and corresponding gallylene complexes [(CO)$_3$TM(GaX)] were investigated theoretically at the DFT/B3LYP/6-31G*/LANL2DZ level of theory. From the NBO analysis, the orbital interactions of metal to gallium, and the partial atomic charges were analysed. From the EDA analysis, various parameters like ΔEPauli, ΔEorb and ΔEelstat were calculated for the transition metal to GaX bonds. And we have predicted the increasing order of TM, Pd < Ni < Pt. We have studied the formation of complexes [(CO)$_3$TM(GaX)] via five-member coordinated transition state and we have found that the complexes are feasible.

1. Introduction

In transition metal chemistry, searching a new type of ligand mainly depends on isolable or (valence) isoelectronic relationships. The metal complex having the ligand N_2, which is isoelectronic with CO was characterised successfully in 1965 [1]. The complexes containing heavier boron group diyl ligands EX (E = B-Tl; X = F-I), which are isoelectronic with CO, have the same kind of bonding characters compared to CO. The ligand BF is more specifically attractive and an interesting subject of theoretical studies [2–4]. Even though the theoretically predicted bond dissociation energies were high, isolation of BF complexes was a challenging task for a long time [5–7]. The heavier boron group diyl ligands (ER) containing bulky substituents (R) have been the important topic of experimental as well as theoretical studies [8–14]. Stabilization of the ligands GaX in complexes is supported by Lewis bases like [Fe(CO)$_4$(GaCl)(tmeda)] and at the same time ligands like GaR which are unsupported by Lewis bases were also synthesized [15–18]. The challenges in the synthesis of complexes having GaX are the large reactivity and the lack of availability of EX synthons. Aldridge et al. (2008) overcame these challenges by the use of a sterically hindered, more electronegative metal centre and a stable GaI_2 precursor [19,20]. Borylene complexes of the transition metal $ML_n(BX)_m$ have been studied broadly and reported since 1998 [21–27]. But only a few two-coordinated ligands of Group 13 elements have been studied. The bonding nature of M−E complexes stimulates a greater interest [28]. Fischer et al. (2005) have reported ligands like Al(η_5-C_5R_5) and Ga(η_5-C_5R_5) with transition metal atoms [29–32]. Jones et al. (2005) studied heterocyclic gallyl ligand-based complexes [33–42]. Dialkylgallyl complexes of molybdenum [(η_5-C_5H_5)MoGa(tBu)$_2$(CO)$_3$], tungsten [(η_5-C_5Me_5)W(GaMe$_2$)(CO)$_3$], iron [(η_5-C_5Me_5)FeGa(tBu)$_2$(CO)$_2$], platinum [(CH$_2$SiMe$_3$) Pt{Ga(CH$_2$SiMe$_3$)$_2$}(dcpe)], iridium [(PCy$_3$)$_2$Ir(Cl.GaMe$_3$)(GaMe$_2$)(Me)] were studied already [43–47]. Even though several terminal metal borylene, alylene and gallylene complexes were studied theoretically and reported, only a few complexes such as dialkylgallyl, dihalogallyl and haloarylgallyl ligands were synthesised and characterised [48–52]. Dihalogallyl complexes of iron [(η_5-C_5Me_5)(PPh$_3$)Fe(GaBr$_2$) {Ga(η_5-C_5Me_5)}], [(η_5-C_5H_5)Fe(CO)$_2$(Ga(Mes*)Cl)], [(η_5-C_5Me_5)Fe(CO)$_2$(Ga(Mes*)Cl)], [(η_5-C_5Me_5)Fe(CO)$_2$(Ga(Mes)I)] and [(η_5-C_5Me_5)Fe(dppe)(Ga(Mes)I)] (Mes = $C_6H_2Me_3$-2,4,6; Mes*=C_6H_2 tBu$_3$-2,4,6), platinum, *trans*-X(PCy$_3$)$_2$Pt(GaX$_2$) (X = Br, I), and diiodogallyl complex, [(η_5-C_5Me_5)Fe(dppe)(GaI$_2$)] [dppe = 1,2-bis(diphenylphosphino)ethane] were also reported. The bonding nature of dihalogallyl Fe, Ru, Os, Ni, Pd, and Pt complexes was studied by Pandey et al. (2010) Transition metal gallyl complexes are used in digallylation of unsaturated organic compounds and synthetic conversion-associated effects. Hence it is important to understand the bonding nature of M-Ga in gallyl complexes. Based on the charge-neutral complexes which are associated with the classical metal carbonyls such as Cr(CO)$_6$, Fe(CO)$_5$, and Ni(CO)$_4$, theoretically terminal metal complexes with group 13 mono halide systems were investigated [53–56]. The theoretical

* Corresponding authors.
E-mail addresses: alagansek66@gmail.com (A. Sekar), christopherjeyakumar@americancollege.edu.in (T. Christopher Jeyakumar).

https://doi.org/10.1016/j.comptc.2020.113139
Received 2 October 2020; Received in revised form 26 December 2020; Accepted 27 December 2020
Available online 31 December 2020

Empirical Relationship of Macroeconomic Variables and Stock Prices : Indian Stock Market and Japanese Stock Market

Finance India, Vol. XXXV No. 3, September 2021

Posted: 29 Oct 2022

Baranidharan Subburayan (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=4176532)
School of Business and Management, Christ University

N. Dhivya (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=5545192)
IFET College of Engineering

A. Alex (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=5545193)
St. Joseph's College of Arts and Science (Autonomous)

Date Written: October 5, 2021

Abstract

In the motive of strong democracy and partnerships, India is expected to be act as one of the top three economic powers of the world over the next 10-15 years and has emerged as the fastest growing major economy in the world. A stock exchange acts as a platform for financial instruments like stocks and derivatives were traded. The relationship between macroeconomic variables and stock prices has been an attractive subject for both financial and macro economists for a long period of time. The macroeconomic variables were driven the movement of stock prices. The purpose of this study is to find out the impact of various macroeconomic variables on Indian Stock Market and Japanese Stock market and also relationship exists through the data collected from the period 1st April 2013 to 31st March 2018 by using e-views Software, Descriptive Statics and Correlation which helps investors to consider all relevant source of information for Investment Decision making.

Keywords: Macroeconomic, Stock Market, Investment, Financial Instruments

JEL Classification: E6, E22, G14, G11, G23,

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Global Business Review

Impact Factor: 2.3 / 5-Year Impact Factor: 2.5 | Journal Homepage | Submit Paper

Restricted access | Research article | First published online September 3, 2021

The Relationship Between Human Resource Management Practices, Knowledge Management Practices, and Performance: Evidence from the Healthcare Industry in India

Satyanarayana Parayitam, Shaik Mohamed Naina, and Alex Aruldoss (+2) View all authors and affiliations

OnlineFirst | https://doi.org/10.1177/09721509211037209

Abstract

The objective of the present study is to examine the impact of human resource management (HRM) practices on organizational performance. Knowledge management (KM) practices as a moderator in the relationship between HRM practices and organizational performance are studied by developing a conceptual model. Using a structured survey instrument, the data were collected from 979 employees from 10 hospitals in the southern part of India (Tiruchirappalli District of Tamil Nadu). After thoroughly checking the instrument's measurement properties using the LISREL, hierarchical regression was performed to test the hypotheses. The results support (a) compensation and rewards, performance appraisal and learning culture that are positively and significantly related to organizational performance; (b) recruitment and selection, training and development that are not significantly related to organizational performance; and (c) KM practices that moderate the relationship between (a) training and development and organizational performance, and (b) learning culture and organizational performance. Finally, the implications for HRM and KM are discussed.

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International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211
Volume 9, Issue 7 July -2021, Impact Factor: 7.429, Available online at: www.ijaresm.com

Predicament of Working Women in Sean O'casey's Juno and the Paycock

S. Aishwarya[1], Mr V.R. Suresh Kumar[2]

[1]M.Phil-English, St. Joseph's College of Arts and Science (Autonomous) Cuddalore-01
[2]Assistant Professor & Head. PG & Research Department of English), Department of English, St. Joseph's College of Arts and Science (Autonomous) Cuddalore-01

ABSTRACT

Being a woman itself is hard to survive in the patriarchal society. For a working woman, it takes great strength to persist in her position in society. Working women face a lot of complexities in life. When concerning with the work-life balance, earnings, harassment, and job opportunities, they face a lot of trouble than men. The situation carried on from the Industrial Revolution times when women began to work to run their family and are existing till now where a woman is trying to prove herself in the society. Sean O'Casey was an Irish dramatist who has shown the status and situation of working women through his plays. Sean O'Casey' *Juno and the Paycock* was one of his outstanding plays which depict the obstacles and difficulties of a working woman during the Irish War of Independence. This paper compares the character 'Juno' with modern women and analyzes the problems faced by working women.

Keywords: Sean O'Casey's Juno and the Paycock, Feminism, Working women, Societal issues

Feminism is one of the most spoken and debated concepts for so many decades. Yet the problems faced by women have not decreased. Feminism is traditionally divided into Liberal feminism, Radical feminism, Socialist feminism, and Marxist feminism. This different ideology of feminism was developed as a result of the three waves of feminism at each particular timing. And each of their ideas is contrasted from one another. Many theories were made under each of these categories. During the 21st century, feminism started to see a lot more dimensions such as Ecofeminism and Cyber-feminism and still the debate about feminism persists in society. When looking into the initial point of feminism it started to get stronger when women began to work. During the time of World War I men were sent to the war. The industries began to dry up and there was a great economic depression that started to tear down the people. Particularly the middle-class families began to suffer a lot because of the great depression. To run the family women decided to take the job of men. Women started to work in industries. Soon the industries started to flourish. The development of industries supported the economic growth of the nations.

In society, particularly in some orthodoxical countries, women are still made to look after the family. The family and society insist the women be at home and look after their family. For centuries this custom has been embedded in many patriarchal families. But with the support of feminist visions and awareness women started to work nowadays. In recent times women could grab their dream job but still, many obstacles have been faced by women. For example, the first and foremost issue faced by women is job security. In many multinational companies, a man could sustain in the job till they have the potential for the job and till they wish to be in the job. But for women, if they are committed to a job, their family would insist on them to relieve themselves from the job to take care of their families. Even if a woman has the skill and potential for the job they are not considered for their position in the workplace. The workplace harassment triggers the depressing state of women in the workplace. Many cases have been filed about harassment in the workplace even at present times. And this terrifies women and their families. Because of such harassment and violence, families are afraid of sending women to work.

Literature persistently talks about struggles faced by women after the birth of Modernism. Many writers vehemently speak about the state of women in the patriarchal society. Sean O'Casey was one of the most outstanding Irish writers, whose modernistic ideas paved a great revolutionary thought among the people. Sean O'Casey was himself from a tenement family and he captured the scenes of suffering after middle-class people during the time of the early 20th century. In his three Dublin plays Sean O'Casey portrays the lifestyle of the tenant people. Sean O'Casey also documented the events during the Home rule for Ireland and the Irish War of independence. *Juno and the Paycock* was a remarkable work of Sean O'Casey that brings out the suffering of a working woman. *Juno and the Paycock* was performed in the year 1924, during the time of the Irish war of independence. The representation of female characters in the play breaks the traditional portrayal of women in Irish plays.

International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211
Volume 9, Issue 7 July -2021, Impact Factor: 7.429, Available online at: www.ijaresm.com

Repressive Ideology of Ruling Class in Upton Sinclair's *The Flivver King*

S. Dharani[1], X. Ann Lanka Jeyadharshini[2]

[1]Department of English, St Joseph's College of Arts and Science (Autonomous) Cuddalore-1
[2]Asst. Prof., Department of English, St Joseph's College of Arts and Science (Autonomous) Cuddalore-1

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ABSTRACT

Upton Sinclair's *The Flivver King* is one of the greatest novels which depicts the pathetic condition of the working class people.It also centres on the repressive ideology of ruling class in America. My paper analyze repressive ideology unconsciously approved by the society mainly in American society reflected in Upton Sinclair's *The Flivver King: A Story of Ford America.* Nowadays, there is a phenomenon about capitalism that becomes the main system in the world.Capitalism is the main problem that makesmiserable life to working class who is often exploited by the capitalistic class in order to get profit for their own. My paper shows that American Dream becomes the main ideology that is deep rooted in the minds of the people. It can be concluded that ideology fails to give prosperous life to working class people, instead it gives prosperous life to ruling class.

Key words: Ideology, Capitalism, Working Class and American Dream

Upton Sinclair's *The Flivver King*speaks about the miserable life of working class people. This novel explores theproblems of American society during the first half of the twentieth century. It attempts to reveal the truthpicture of an automobile industry during early twentieth century in America. *The Flivver King* pictures how capitalism brings much privileges for small groups and brings damage for the majority people. This novel becomesan important note which is about to tell the American society about capitalism and also ideology concerned with the power structure within the society.

Industrial revolution in the middle of nineteenth century changed America into capitalist society. The rapid growth of new machines and technologies in transportations, communications, and manufacturing gave a important role in the economy of America. Industrial revolution offered golden opportunities for the people to achieve personal wealth especially those who owned money. Many people started to runnew business and open factories in larger number since the production of goods were easier with the help of machines and exchange of production was much faster than before. Since number of factories and industriesgradually increased in this period. It resulted in raise of capitalism in American society. However, the change of the economy of America which caused by the industrialization and capitalism was followed by the transformation of American society. capitalism also created mental change in the society. The mind of people was filled with money and power it becomes the cause of false ideology that deep rooted in the mind of the society.

Ideology refers to a popular social belief system that has been formed by the society. However, not all ideologies are positive one. There are two types of ideology that prevails in the society. The first one is non repressive ideology which allows people to know exactly about an ideology, for example Marxism. The second one is repressive ideology which always appears as natural way of seeing the world. Though it is thought to be natural view or way it is not recognized as ideology by people in the society. It develops false consciousness that can mask the reality and blind or blur people to see their true situation to serve power people and acceptance of power that has been stimulated by ruling power system.

The Flivver King tells the rise of Henry Ford's automobile industry. Who is an optimistic man who wants to improve American's lives by providing people with a more efficient means of transportation, paying his workers well, and protecting American values like freedom, opportunity and the idea that hard work can bring prosperity. Meanwhile, Abner Shutt is a loyal worker who wants to achieve the American dream of working hard to provide a greater opportunity and a better way of life for his children. But over the course of the story corruption is aheaded in many of American institutions and Henry Ford also corrupted in his business,he mistreats his workers with low wages and squeezes all the energies from the workers. Abner and other workers were mistreated by Henry Ford.

The social setting of the novel that is capitalist society, the class structure that come up from the social relation has been identified. There are two socioeconomic classes in the novel, the bourgeoise and the proletariat. The bourgeoisie is represented by Henry Ford. On the other hand, the character Abner Shutt represented as the proletariat. As the

International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211
Volume 9, Issue 10, October-2021, Impact Factor: 7.429, Available online at: www.ijaresm.com

A Feminist study of Toni Morrison's *The Bluest Eye*

A. Isabella

Asst. Professor, PG & Reasearch department of English, St. Joseph‟s College of Arts and Science(Autonomous)
Cuddalore– 1

ABSTRACT

Toni Morrison a famous African woman writer, portraysthe plight of black women in her works.The status of African Americanwomen was pathetic,and they are alsooppressed by the patriarchal society.In the contemporary world still they are not able to come up with their own identity,in the male dominated atmosphere.The African American woman themselves were enmeshed by desires and male chauvinism.The study deals with issues of racismand Sexism,andtheimpact on the Young black girls in the novel *Bluest* Eye.Morrison's chief thematic concern is with woman's strugglein the African American society and she believesthat it is important for theblack people to know their values and get their identity by themselves in the society.

Toni Morrison is the first African American novelist to win the Novel Prize for literature in 1993 for her novelher novel *The Bluest Eye.* She has written ten novels and the best knownnovels are,*The 'Bluest Eye'(*1970*), Sula(*1974*), Song of Solomon (*1977*),*and *Beloved (1987),* She received her Baptismal name,,Anthony ' which later became the basis for her nick name Toni. She began to write her fiction as a part of an informal group,But this led her to have a discussion with other writers at Howard, who met her to discuss their work. She also wrote for children as well. As she emerged as a feministic writer, some critics began to research her novels in terms of feminism.

Feminism is a movement and it deals with philosophies against patriarchal ideologies.This movement was initiated in 1960 by a politically committed woman Betty Friedan, the author of Feminist Mystique.It helps woman to voice their grievance and fight for their rights.The Early Feminists were not much on literature and literary criticism but they tried to emerge themselves in the society.The thrust for women's identity is a typical motif of Feminist literature; So,the feminist critics exposed their feelings against socio-political or socio-economic subjugation of women.

Toni Morrison,in her novel *The Bluest Eye*, has presented the story of Pecolabreedlove who internalized white standard of beauty to such an extent, that she became crazy about her wish to have blue eyes.Even today, people think that being fair is beauty and try to escape from the ugliness in their own society or race or colour.Morrison clearly depicts the ninetieth century classical racism in the United States and also brings out the identity of the female character through racism and Sexism.The black female identity is inseparably linked with racism,sexism and class oppression.Toni Morrison's *The Bluest eye* not only reflects the issues of race, class and gender,but also presents her cultural concern in American society.

Pecola in *The Bluest* eye had a pressure on the dominant cultural society. She longed for a pair of Bluest eye, which was the symbol of beauty and essentially different from that of the traditional black beauty. Within her community Pecola dreamt about her future, and she had little regards for the past, and gave less importance for the present.She did not take up either the role as a mother or that of a wife,but her inner fantasy world pushed her to build a castle in the air which led her into the self-destruction.By presenting Pecola as a pasty, Morrison directly accuses the whole society, and brings out consiousness among the African American people in the U.S.A Pecola being powerless,was unable to accept the values exposed around her and finally descended into instanity .Claudia narrates: "Quiet as it's kept there were no marigolds in the fall of 1941.We thought, at the time,that it was because pecola was having her father‟s baby that the marigoldsdid not grow: nobody's did…It never occurred to either of us that the earth itself might have been unyielding"(5-6).

Morison and Fanon both deal with the desire to become beauty in the oppressed country.This oppressive situation has been characterized by Oliver as "Colonization of psychic space" (13) through which some are valued and others are developed or abject.The devaluation or the standard of blackness, is already viewed from the black girls Shirley Temple's fashion but the narrative technique connects to the desire for the stereotypical life style in the society. Pauline breedlove more than her daughter. Pauline,who liked to spend her time in the Fisher house, made herself to fascinate and long for such stereotype life.After her marriage Pauline felt uncomfortable and faced different attitudes in fascinating the American culture; her marital life grew shaky and gloomy.This type of glance and gossiping made Pauline to develop her desire for Western Culture.As money was their problem Pauline decided to go to work and spend lavishly,in this way she enjoyed and fulfilled

South East Asian J. of Mathematics and Mathematical Sciences
Vol. 17, Proceedings (2021), pp. 39-50

ISSN (Online): 2582-0850

ISSN (Print): 0972-7752

MAX CONNECTIVITY AND INHERENT VALUE OF A SMART FUZZY GRAPH

J. Jon Arockiaraj and Chaarumathi P. M.

PG and Research Department of Mathematics,
St. Joseph's College of Arts and Science (Autonomous),
Cuddalore - 607001, Tamil Nadu, INDIA

E-mail : jonarockiaraj@gmail.com, pmchaarumathi@gmail.com

(**Received:** *Aug. 08, 2021* **Accepted:** *Oct. 01, 2021* **Published:** *Nov. 30, 2021)*

Special Issue
Proceedings of International Virtual Conference on
"Mathematical Modelling, Analysis and Computing IC- MMAC- 2021"

Abstract: The internet of things is the building blocks of the latest technology. By adding intelligence into everyday objects, it transforms them into smart objects. The internet of things acts as a podium between these smart objects and the human beings. In this paper, we have introduced the max connectivity and inherent value of quantum smart fuzzy graph. This paper also studies the comparison among quantum edge, max connectivity and inherent value of quantum smart fuzzy graph.

Keywords and Phrases: Max connectivity, inherent value.

2020 Mathematics Subject Classification: 05C78, 54C05.

1. Introduction

The uncertainty and vulnerability in the classic graph was overcome with the idea of fuzzy sets that was introduced by Zadeh in 1965. After which the subject became to gain tremendous impact and applications in engineering and technology. Using Zadehs concept of fuzzy relation, the definition of fuzzy graph was framed by Kaufmann in 1973. Later Rosenfed and other scientists notably like Yeh and Bang laid the foundation for fuzzy graph theory. This paved way for increasing concepts like path, tree, connectedness, bridges, etc. Fuzzy graph theory has various applications

ON DIRECT SUM OF FOUR FUZZY GRAPHS

T. Henson and S. Santhanalakshmi

PG and Research Department of Mathematics,
St. Joseph's College of Arts and Science (Autonomous),
Cuddalore – 607001, Tamil Nadu, India.

E-mail: thenson1967@gmail.com, santhanalakshmi1210@gmail.com

Abstract: The graph G_1, G_2, G_3 and G_4 which is defined by the direct sum of four fuzzy graphs $G_1 \oplus G_2 \oplus G_3 \oplus G_4$. This is also proved the effective values. The degree of the vertices is $G_1 \oplus G_2 \oplus G_3 \oplus G_4$ is calculated with the establishment of the regular property and the Connectedness of the Direct Sum of four Fuzzy Graphs.

Keywords: Fuzzy graph, Degree of vertices in the direct sum, Regular fuzzy graphs, connected fuzzy graphs and Effective fuzzy graphs.

1. INTRODUCTION

The concept of fuzzy graphs was established by A. Rosenfeld in 1975 [6]. Mordeson .J.N and Peng. S [2] were developed some operations on fuzzy graphs. Further Bhattacharya [1] discussed about the remarks of fuzzy graphs. Also, Dr. K. Radha and Mrs. Arumugam [7] asserted the connectedness and regular properties of direct sum of two fuzzy graphs. Similarly, the direct sum of two fuzzy graphs was extended to three fuzzy graphs in T. Henson and N. Devi [3].

By using numerical example, can be calculated the direct sum of four fuzzy graphs with the degree of nodes. In this whole article V is a fuzzy subset of σ and μ is a symmetric fuzzy relation on σ was represented. In addition, also, with the help of numerical example direct sum four fuzzy graphs of Regularness, Connectedness and Effectiveness of four fuzzy graphs were checked in this paper below.

2. PRELIMINARIES

Let G: (σ, μ) be a fuzzy graph on G^*: (V, E), then the following graphs arrives.

2.1. Definition

The valency of is x defined as $d_G(x) = \sum_{x,y} \mu(xy)$, and if each vertex with same degree K, and if dG (x) = K for every x and y then the graph is said to be a regular fuzzy graph of degree K [4].

2.2. Definition

If every pair of vertices is connected by an edge then the graph is a connected fuzzy graph [4].

3. Direct sum

Let G_1: (σ_1, μ_1), G_2: (σ_2, μ_2), G_3: (σ_3, μ_3), and G_4: (σ_4, μ_4) denote four fuzzy graphs with underlying crisp graphs G_1^*: (V_1, E_2), G_2^*: (V_2, E_2) [7], G_3^*: (V_3, E_3) [3] and G_4^*: (V_4, E_4) respectively.

Let $V = V_1 \cup V_2 \cup V_3 \cup V_4$ and

Hexagon Hesitant Fuzzy Multi – Attribute Decision Making Based On TOPSIS

S Johnson Savarimuthu [1] and S Kowsalya [2]

[1,2] PG & Research Department of Mathematics, St. Joseph's College of Arts & Science (Autonomous), Cuddalore, Tamilnadu, India

E-mail: johnson22970@gmail.com , kowsisekarm.sc@gmail.com

Abstract: In this paper hexagon hesitant fuzzy set is used to solve the higher order uncertainties with TOPSIS method. Hexagon Hesitant Fuzzy Multi Attribute Decision Making problems faced by the farmer who plant monsoon crops in Villupuram District.

Key Words: Multi Attribute Decision Making, Hesitant Fuzzy Set, Hexagon Fuzzy Set, Technique for order preference by similarity to Ideal Solution, TOPSIS.

1. INTRODUCTION

Lotfi A. Zadeh introduce Fuzzy Set Theory in 1965 and further developed by Dubosis and Prade, R.Yager Mizomoto, J.Buckly and many others. The most useful representation in fuzzy is membership function. Conception of fuzzy number and fuzzy arithmetic is first developed by Zadeh [8] and Dubosis and Prade [2]. After the familiarization of fuzzy set Lotfi A.Zadeh bring in the concept of fuzzy number in 1975[7]. It is special type of fuzzy set and mainly used to quantity qualitative and linguistic variable which are uncertain and vague in nature. Different type of fuzzy set [0,1] are explained to clear the vagueness. A fuzzy number is a number the estimation are not exactly correct in case of single valued function. Ranking Fuzzy Number revels leading part in decision making. The main problem in decision making is electing one among the collection. The decision maker should use fuzzy number in particular parameter to avoid non-reliable values when the parameter value is more than one. To make this happen Zadeh [1965] [4] introduced fuzzy set theory. The subject has become an interesting bough of Pure and Applied Science. Solving of Multi – Attribute Decision Making is the most practical application. Hesitant Fuzzy Set is initiated by Torra [6] this allows a factor be a set of different estimation between 0 and 1. Wang Et Al furnishes a prominent near by with HFSs to solve MCDM problems.In this paper, an addition has been made and developed near the proper the Hexagonal Hesitant Fuzzy Set (HHFS) come by means of decision making bundle TOPSIS. The difficult situation met by the cultivator in Villupuram District are scrutinized by means of our recently made Hexagonal Hesitant Fuzzy Multi – Attribute Decision Making (HHF – MADM) method.This topic has been proceeded in the given below patten. The theory of HFS, HHFSs and some of its

An Efficient ensemble of Brain Tumour Segmentation and Classification using Machine Learning and Deep Learning based Inception Networks

R. Aruna Kirithika[a], S. Sathiya[b], M. Balasubramanian[c] and P. Sivaraj[d]

[a]PhD scholar in Computer and Information Science, Annamalai University, Tamilnadu, India.
[b]Assistant Professor in Computer Science Engineering, Annamalai University, Tamilnadu, India.
[c]Assoicate Professor in Computer Science Engineering, Annamalai University, Tamilnadu, India.
[a]ssociate Professor in Manufacturing engineering, Annamalai University, Tamilnadu, India.

Article History: Received: 11 January 2021; Accepted: 27 February 2021; Published online: 5 April 2021

Abstract: In recent times, Brain Tumor (BT) has become a common phenomenon affecting almost all age group of people. Identification of this deadly disease using computer tomography, magnetic resonance imaging are very popular now-a-days. Developing a Computer Aided Design (CAD) tool for diagnosis and classification of BT has become vital. This paper focuses on designing a tool for diagnosis and classification of BT using Deep Learning (DL) models, which involves a series of steps via acquiring (CT) image, pre-processing, segmenting and classifying to identify the type of tumor using SIFT with DL based Inception network model. The proposed model uses fuzzy C means algorithm for segmenting area of interest from the BT image acquired. Techniques like Gaussian Naïve Bayes (GNB) and logistic regression (LR) are used for classification processes. To ascertain all the techniques for its efficiency a benchmark dataset was used. The simulation outcome ensured that the performance of the proposed method with maximum sensitivity of 100%, specificity of 97.41% and accuracy of 97.96%.
Keywords*:* Brain Tumor, Deep Learning, Feature extraction, Fuzzy C means, Inception V3, SIFT, Gaussian Naïve Bayes, Logistic Regression.

1. Introduction

In human body, brain is a vital organ which acts as a central nervous system. It controls and directs the body to function properly. Since brain is an important organ, it has to be covered from harm and ailments. Few of the brain tumors are Meningioma, Glioma, and Pituitary. Firstly, Meningiomas are prominent diseases; however, it is a non-cancerous type of tumors developed in narrow walls around the brain tissues and cells (Aruna Kiruthika, 2020; Aruna Kiruthika, 2020; Aruna Kiruthika, 2020; Fu.J, 2012). Brain Tumors (BTs) are considered to be most dreadful disease which mitigates the lifetime of a human being within a short span of time. Earlier prediction of BT is highly essential and significant to extend the patient's lifespan. This is accomplished by using Magnetic Resonance Imaging (MRI) scanning model which is applied extensively by radiologists in order to examine the BT. Finally; the scan report shows whether the brain is healthy or unhealthy. Followed by, it also finds the class of tumors when it is affected by a disorder. Under the application of Machine Learning (ML), MRI reports should have a précised image for predicting BT. Initially, developer's assumed 3 portions namely, Pre-processing of MRI, Feature generation, and extraction as well as Classification.

Ultimately, Median Filter (MF) has been applied to enhance the superiority of images and to conserve the edges in pre-processing phase (Talo. M 2019). Then, image segmentation is performed with the help of K-Means, Fuzzy C Means (FCM), and so on offers more advantageous features from applied images. It is one of the viable and important phase which helps in image examination and interpretation. Also, it is employed extensively in brain imaging functions like tissue classification, tumor position, evaluating the volume of tumor, blood cell inclination, surgical plans, and matching. In (Alqazzaz S, 2019), BT segmentation was utilized by a Convolutional Neural Networks (CNN) to 3D MRI. Automated prediction of brain's anatomical structure by using Deep Neural Network (DNN) was projected in (Sugimori H, 2019). In (Garikapati, P., 2020), a voting scheme for ensemble of transparent structures like intensity and adaptive shape modes takes place with the integration of discrete Gaussian as well as higher order patterns like Markov-Gibbs random field classification was developed. The hybridization of deep auto-encoder in conjunction with Bayesian fuzzy clustering-relied segmentation mechanism has been established in (Balamurugan, K, 2018).

In (Gumaste PP, 2020), 2D MRI is divided as left and right hemisphere along with some statistical properties was estimated for SVM classification approach. As there are massive features, feature extraction is performed with valid data under the application of Principal Component Analysis (PCA), Scale Invariant Feature Transform (SIFT), and Speed-up Robust Features (SURF) descriptors. In (Loganathan, J, 2017), after computing hybrid feature extraction and covariance matrix, a regularized extreme learning has been employed for classifying the brain disorder. Evolutionary Algorithms (EA) namely Particle Swarm Optimization (PSO) was utilized in (Hong KS, 2018) deciding combination of features. Moreover, well-known ML approaches are applied for image analysis.

Intelligent and Deep Learning Collaborative method for E-Learning Educational Platform using TensorFlow

Manikandan. S[1], Dhanalakshmi. P[2], Priya. S[3], Mary Odilya Teena. A[4],

[1]Associate Professor, Department of Information Technology, E.G.S. Pillay Engineering College, Nagapattinam, Tamil Nadu, India (Corresponding author) (profmaninvp@gmail.com)
[2]Associate Professor, Department Computer Science and Systems Engineering, Sree Vidyanikethan Engineering College, A.Rangampet, Andhra Pradesh, India (dhanalakshmi.p@vidyanikethan.edu)
[3]Assistant Professor, Department of Computer Science and Engineering, SRM Institute of Science and Technology, Tamil Nadu, India
(priyas3@srmist.edu.in)
[4]Assistant Professor, PG Department of Computer Applications, ST. Joseph's College of Arts & Science (Autonomous), Cuddalore, Tamil Nadu, India
(teena16121979@gmail.com)

Article History: Received: 10 January 2021; Revised: 12 February 2021; Accepted: 27 March 2021; Published online: 28 April 2021

Abstract: Nowadays, online learning is platforms are played important role for all the communities. Sitting one place accessing whole world and share their contents through internet media such as webinars, social media, etc. In this paper, we use deep learning method to analyse E-learning platforms using Google TensorFlow. In this model has processing natural language data, convolution neural network and recurrent neural network models. We have identified the clustering of E-learning platforms using content wise, domain wise and selection wise in which we can easily apply association rule mining for identifying prioritization. Those who are accessing the E-learning platforms can be collected and apply Apriori algorithm is used for clustering. We used semantic method for combination of cluster and association rule finding score. In this approach we give prediction result for which platform are used more useful of learning community and gives comparative study of various learning systems. The result is evaluated by using TensorFlow and compares the performance.

Keywords: E-Learning platforms, Intelligent System, Deep Learning, TensorFlow, Association, Clustering

1. Introduction

Current scenario online based learning is one of the important tools to access the resource. Instead conventional or traditional method this method has more efficient and ease of use. The power of internet is played vital role in this scenario. The deep learning approaches are used in E-commerce domain for customer reviews, recommendation systems for purchasing products and thereof. The usage of internet and online based learning are increasing rapidly[1]. More of data and dataset is used today and extracting logs are big challenging task. Collaborative learning approach is used for request feed and collecting large dataset modelling [2].

The comparison of user preference and dynamic model is used for filtering content and compare the performance [3][4]. The recommendation system is useful from reading contents and hybrid model for verifying all limitations [5].The online educational resource are revolting the world such as Massive open online courses like Coursera, Edx, Udemy, NPTEL ,etc. The learners can easily find the resources and their learning credentials. Some of the courses are allowed to transfer their credit to regular academic courses [6].

Currently the education system has emerging research area and different models are suggested for learning activities. The use of various recommendation systems is available for learning by online, preferences, acquiring skills and self interest [7]. The suggestion model is created for our proposed system based on courses, recommendation and preferences. In this paper, we describes following sections, section 2 describes about related works, section 3 deals about proposed model and their recommendations, section 4 explains implementations and section 5 gives conclusion and results.

2. Related works

Apriori based association rule mining is applied for developing recommendation for monitoring content and quality factor. Tewari et al, the content based filtering method is used for analysing contents and

Turkish Journal of Computer and Mathematics Education Vol.12 No.11 (2021), 5102-5105
Research Article

Monetary Consideration Among Rustic Families In Puducherry

[1]Dr.L.Vijayakumar, [2]Dr.Jenifer Lawrence, [3]Dr.Rahamath Sulthana

[1]Assistant Professor, PG & Research Department of Commerce, St.Joseph's College of Arts & Science (Autonomous),Cuddalore-1.
[2]Associate professor, Department of Management, Woldia University, Ethiopia.
[3]Assistant Professor, Department of Management Studies,B.S.Abdur Rahman cresent and Technology,Chennai.

Article History: Received: 11 January 2021; Revised: 12 February 2021; Accepted: 27 March 2021; Published online: 10 May 2021

ABSTRACT
Monetary Inclusion is a financial idea in India that means to change the elements in improvement by offering monetary types of assistance at moderate expenses to the oppressed, who may not in any case know about or ready to manage the cost of these administrations. Worldwide patterns have shown that to accomplish comprehensive turn of events and development, the extension of monetary administrations to all segments of society is of most extreme significance. Notwithstanding, as of late, the Government and Reserve Bank of India has been pushing the idea and thought of monetary incorporation. As pay levels and therefore, investment funds in the provincial zones increment, it is vital for assist them with dealing with their assets furthermore, work with their monetary administrations. Permitting individuals to make straightforward, no nonsense current and investment funds accounts, loosening up KYC standards and straightforwardly attributing social advantages to account proprietors will support a comprehensive way to deal with money and banking in provincial territories. The current examination endeavors to accumulate the view of rustic families on the idea of monetary incorporation and to analyze the degree of monetary consideration regarding access and utilization of bank accounts. The paper investigations the degree of premium in monetary administrations, the degree of fulfillment on the administrations offered and level of assumption for respondents towards monetary consideration. The examination found that there is no huge relationship, between financial elements of the respondents and the level of fulfillment towards monetary administrations.

INTRODUCTION

Monetary Inclusion is a financial idea in India that means to change the elements in improvement by offering monetary types of assistance at moderate expenses to the oppressed, who may not in any case know about or ready to manage the cost of these administrations. Worldwide patterns have shown that to accomplish comprehensive turn of events and development, the extension of monetary administrations to all segments of society is of most extreme significance. Notwithstanding, as of late, the Government and Reserve Bank of India has been pushing the idea and thought of monetary incorporation. As pay levels and therefore, investment funds in the provincial zones increment, it is vital for assist them with dealing with their assets furthermore, work with their monetary administrations. Permitting individuals to make straightforward, no nonsense current and investment funds accounts, loosening up KYC standards and straightforwardly attributing social advantages to account proprietors will support a comprehensive way to deal with money and banking in provincial territories. The current examination endeavors to accumulate the view of rustic families on the idea of monetary incorporation and to analyze the degree of monetary consideration regarding access and utilization of bank accounts. The paper investigations the degree of premium in monetary administrations, the degree of fulfillment on the administrations offered and level of assumption for respondents towards monetary consideration. The examination found that there is no huge relationship, between financial elements of the respondents and the level of fulfillment towards monetary administrations.

REVIEW OF LITERATURE

To comprehend the degree of monetary consideration all through India, and the connection between monetary incorporation and the rustic discernment towards it past writing shows that no particular investigations were made in towns in Kerala. Studies by Sharma and Kukreja (2013) states that monetary consideration is the critical factor for comprehensive development which makes India stand apart on a worldwide stage. Despite the fact that monetary consideration is assuming a significant part in the

International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211
Volume 9, Issue 7 July -2021, Impact Factor: 7.429, Available online at: www.ijaresm.com

Hardships of Divorced Women in Rachel Cusk's Aftermath: On Marriage and Separation

M.Rishika[1], Mrs. T. Jackuline Suganthi[2]

[1]St.Joseph's College of Arts and Science (Autonomous), Cuddalore-01
[2]Assistant Professor, St.Joseph's College of Arts and Science (Autonomous), Cuddalore- 01

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ABSTRACT

Women who get divorcetend to face more mental pressures.They will be facing multiple suggestions and emotions after divorce. Separation and divorce are emotional processes, not just physical and legal dissolutions.Feelings generally are still ambivalent. Women are more prone to depression, poor health, loneliness, lack of work efficiency, suffer from insomnia and memory difficulties. They suffer from daily mood swings and mental pressures. Women always feel more helpless and vulnerable and have self-deprecation than men. *Aftermath: On Marriage and Separation* by Rachel Cusk deals with her marriage and divorce from her husband Adrian Clarke. Cusk looks at the issues that arise for women in the years after she has lived the defining experiences of Feminity. She has concluded that as her marriage fell apart, " the whole broken mechanism of Feminism was revealed".

Key words: Separation, Divorce, Women, Pain.

Women suffer a lot both physically and mentally. They strain their own health and their ability to perform other crucial daily chores. Women are considered to be weaker sex than men. They suffer isolation, inability to work, loss of wages, lack of participation in regular activities and limited ability to care for themselves and their children. Women face pain more intensely than men. They face emotional aspect of their pain. The effects of divorce on women can be more devastating. The stressful effects of divorce can leave women feeling rejected, insecure and depressed. They feel low in every aspect.

In traditional marriages , the divorce for women is more devastating. They are more susceptible to the physical and psychological effects of divorce than their male partners . They face an increased level of anger, unable to perform household chores , passing their lonely time, unusual crying, restless , unable to care for the child and impressive. They face problems in every aspects . They don't have any rights to make decisions of their own life. They are weak and tired. They face sleeping disturbances. Women feel down in their life after a divorce.

Women who are recently divorced feel a lack of purpose in life , worse general health, lower vitality, worse mental health and decreased role of emotional capacity compared with the general female population.

Rachel Cusk is a Canadian novelist and writer who lives and works in England. Cusk has written eleven novels and four works of non-fiction. She is a contemporary novelist. Her themes mainly deal with feminism and social satire. The work *Aftermath* deals with the suffering in her marriage life and after her separation. She was separated from her husband. She mentions that her husband was not happy with her. " My husband believed that I had treated him monsterly"(AMS03).In this memoir, she reveals her own life after marriage and her suffering in life. She had two daughters and was living all alone with them .

Cusk explores motherhood here and she observes marriage comes with cultural acceptance. Here she dissects the breakup of her marriage and pain the she undergoes, not only by her but also followed by her daughters. She considered her life as a broken plate . Her daughters had used to her new reality. Her husband's words made her shattered into pieces. She could still remember how her daughters were forced to place their father's hand in her when all are together . She remembered her school days and her teacher Mrs. Lewis who was a unmarried woman with a bold attitude. As a married woman, she was not happy in her life. She was living a dark age in her life.

The protagonist says that she used to take her children to the school days in the mornings and pick up them again in the evening. She plays a major role in her daughters' development. Her husband always escapes from the process of their child's development. He moves to office and spent time whole day . They three always spend alone in their house. They try to spend their solitary hours in their house. The protagonist faces a war inside her mind. Her husband wants her to be a feminist. She feels that half of the women in her was separated. She feels the emptiness in her soul.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 6, 2021, Pages. 7490 - 7510
Received 25 April 2021; Accepted 08 May 2021.

Segmentation and Classification of Brain Tumor using Machine Learning and Deep Learning based Inception Model

R. Aruna Kirithika[1], S. Sathiya[2], M. Balasubramanian[3], P. SIVARAJ[4]

[1]PhD scholar in Computer and Information Science,
[2]Assistant Professor in Computer Science Engineering,
3Assoicate Professor in Computer Science Engineering,
[4]Associate Professor in Manufacturing engineering,
[1,2,3,4]Annamalai University, Tamil Nadu, India.
E-mail: 1ashassss79@gmail.com, 2sathiya.sep05@gmail.com,
3balu_june1@gmail.com,
4cemajorsiva@gmail.com

Abstract-- **In recent times, Brain Tumor(BT) has become a common phenomenon affecting almost all age group of people. Identification of this deadly disease using computer tomography, magnetic resonance imaging are very popular now-a-days. Developing a computer aided design (CAD) tool for diagnosis and classification of BT has become vital. This paper focuses on designing a tool for diagnosis and classification of BT using deep learning (DL) models, which involves a series of steps via acquiring (CT) image, preprocessing, segmenting and classifying to identify the type of tumor using SIFT with DL based Inception network model. The proposed model uses fuzzy C means algorithm for segmenting area of interest from the BT image acquired. Techniques like Gaussian Naïve Bayes (GNB) and logistic regression (LR) are used for classification processes. To ascertain all the techniques for its efficiency a benchmark dataset was used. The simulation outcome ensured that the performance of the proposed method with maximum sensitivity of 100%,specificity of 97.41%% and accuracy of 97.96%.**

Keywords: Brain Tumor, Deep Learning, Feature extraction, Fuzzy C means, Inception V3, SIFT, Gaussian Naïve Bayes, Logistic Regression.

I. INTRODUCTION

In human body, brain is a vital organ which acts as a central nervous system. It controls and directs the body to function properly. Since brain is an important organ, it has to be covered from harm and ailments. Few of the brain tumors are Meningioma, Glioma, and Pituitary. Firstly, Meningiomas are prominent diseases; however, it is a non-cancerous type of tumors developed in narrow walls around the brain tissues and cells [1]. Brain Tumors (BTs) are considered to be most dreadful disease which mitigates the lifetime of a human being within a short span of time. Earlier prediction of BT is highly essential and significant to extend the patient's lifespan. This is accomplished by using Magnetic Resonance Imaging (MRI) scanning model which is applied extensively by radiologists in order to examine the BT. Finally; the scan report shows whether the brain is healthy or unhealthy. Followed by, it also finds the class of tumors when it is affected by a disorder. Fig.1. depicts the images of normal, Benign and Malignant tumor captured from computer tomography(CT). Under the application of Machine Learning (ML), MRI reports should have a précised image for predicting BT. Initially, developer's assumed 3 portions namely, Pre-processing of MRI, Feature generation, and extraction as well as Classification.

Ultimately, Median Filter (MF) has been applied to enhance the superiority of images and to conserve the edges in pre-processing phase [2]. Then, image segmentation is performed with the help of K-Means, Fuzzy C Means (FCM), and so on offers more advantageous

IJPSR (2022), Volume 13, Issue 5 **(Research Article)**

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 16 August 2021; received in revised form, 19 September 2021 accepted, 21 September 2021; published 01 May 2022

IN-VITRO STUDY OF ANTI-DIABETIC, ANTI-CANCER AND ANTI-UROLITHIATIC ACTIVITY OF DIFFERENT EXTRACTS OF *PROSOPIS JULIFLORA* SEEDS

D. Leema Rose Mary *, P. Marie Arockianathan, A. Lawrance and A. Edwina Sherley Felicita

PG & Research Department of Biochemistry, St. Joseph's College of Arts and Science (Autonomous), Cuddalore - 60700, Tamil Nadu, India.

Keywords:

Prosopis juliflora, Phytochemicals, Anti-diabetic, Anti-cancer, Anti-urolithiatic

Correspondence to Author:
D. Leema Rose Mary

Assistant Professor,
PG & Research Department of Biochemistry, St. Joseph's College of Arts and Science (Autonomous), Cuddalore - 607001, Tamil Nadu, India.

E-mail: samlee5700@gmail.com

ABSTRACT: Plants and their parts are used to treat many infectious diseases due to the presence of phytoconstituents and avoid some side effects. The present study evaluated the phytochemicals, anti-diabetic, anti-urolithiatic and anti-cancer activities of *Prosopis juliflora* seeds in various solvents such as aqueous, ethanol and 85% ethanol. The preliminary works revealed the presence of secondary metabolites likes alkaloid, phenol, saponin, tannin, phytosterol and flavonoids. The work focused on the anti-diabetic properties of the extract by α-amylase, α-glucosidase methods. *In-vitro* anti-urolithiatic activity by titrimetric method showed that there was maximum activity, and its effect was compared with the standard drug cystone. The MTT assay was used to screen the crude extracts and the isolated compounds to assess their toxicity. The aqueous extracts of *Prosopis juliflora* seeds showed the inhibition effects of the cancer cell lines (MCF7), while there was no effect on the growth of normal cells. Such selective effects were found to be time-dependent. With respect to concentration (25 µg/ml, 50 µg /ml, 100 µg /ml, 250 µg /ml and 500 µg /ml,) of extract were evaluated in triplicates by serial dilution. Among these, 500 µg /ml of ethanol extract was the most effective in producing percentage growth inhibition. The results showed that the aqueous extract significantly inhibited the (MCF7) cancer cell lines. So, seeds of *Prosopis juliflora* extract can be exploding further to produce active herbal principles for therapeutic use.

INTRODUCTION: All over the world has covered with water and land which have more specified medicinal values. Herbal plants possess certain medicinal properties. Nowadays, herbal products have become an important matter in industrialized areas and in developing countries declaration of the protection, effects, and values of the medicinal plants. In our ancient period, herbal plants were used for supplementary diet and to cure disorders.

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.13(5).2101-08

This article can be accessed online on www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.13(5).2101-08

Most of the plants have tremendous medicinal properties to treated, prevented ailments [1]. Plants always synthesis the stress-protective shield against the photosynthetic stress caused by the exogenous exposure. Plants provide primary and secondary metabolites and it considers to be a bioactive component. It is used for industrial purposes to make the drug, medicine, antibiotics, *etc.*, the normal bioactive substances present in the leaves, flowers, seeds and other branches of plants. The plants also protect against the infection-causing microorganisms present in soil.

Plants used as a natural fertilizer for good yielding. A dietary source rich in anti-oxidant properties has been chosen in this study. They have been known to exhibit potential health-beneficial properties against various disorders in traditional medicine.

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 10, Issue 9, 1160-1171. Research Article ISSN 2277– 7105

SCREENING OF PHYTOCHEMICAL AND ANTIOXIDANT PROFILE OF *COCOS NUCIFERA* FLOWERS IN METHANOL EXTRACT

Priya Nagappan[1]*, Kalist Shagirtha[1], Leema Rose Mary[1] and Iswariya Ramadass[1]

[1]Department of Biochemistry, St. Joseph's College of Arts and Science, Cuddalore – 607001.

Article Received on
31 May 2021,

Revised on 20 June 2021,
Accepted on 11 July 2021

DOI: 10.20959/wjpps20219-21140

***Corresponding Author**
Priya Nagappan
Department of Biochemistry, St. Joseph's College of Arts and Science, Cuddalore - 607001.

ABSTRACT

Cocos nucifera is mainly used for its nutritive and medicinal values in human life. In drug discovery, origin of plants are developed and it is suitable to reflect natural plants for the management of certain diseases. The aim of this natural medicine is to influence the body system which depends on the chemical composition that it contains. The present study strengthens the pharmacologic knowledge of the photochemical composition of *Cocos nucifera* flowers and antioxidant activity. Phytochemical have the complementary mechanism of exploit in body system such as effect of antioxidant, detoxification of enzyme, resistant system stimulation and variation of endocrine gland. The studies on phytochemical reveals about the confirmation of carbohydrates, glycosides, flavonoids, phenols, tannins, saponins, proteins, amino acid as well as antioxidant potential of *Cocos nucifera* in methanol extract.

KEYWORDS: *Cocos nucifera,* DPPH, FRAP, antioxidant, phytochemicals.

INTRODUCTION

The Coconut tree is of the family Arecaceae and of the *genus Cocos*. Coconut needs high humidity of about 80% intended for its optimal development. Palm of Coconut needs warmer conditions for the effective development more over it is inclined to stony weather condition. Coconut trees are grown-up in about 90 countries with a yield of sixty one million tons annually.

Since propagation of nuts would take a decades, an alterative way could be the micro propagation. A reproducible explants of plumule is based on the embryonic callus multiplication and secondary somatic embrogenesis, where thousands of somatic embryos

Composite Interfaces >
Volume 29, 2022 - Issue 7

Research Article

Synthesis, Characterization and anti-corrosion property of GPTMS functionalized mesoporous silica (F-SBA-15) incorporated aliphatic chain containing polybenzoxazine nanocomposites

A Amalorpavadoss, S Kumar, V Pavunkumar, a Chandramohan, **K Dinakaran** & G Harichandran

Pages 833-852 | Received 03 Sep 2021, Accepted 02 Dec 2021, Published online: 19 Dec 2021

Cite this article https://doi.org/10.1080/09276440.2021.2015150

ABSTRACT

The (F-SBA-15) dispersed aliphatic chain containing polybenzoxazine nanocomposite coating materials having better corrosion resistance property has been developed. The new aliphatic chain containing polybenzoxazines is synthesized from n-octylamine, bisphenol-A and paraformaldehyde involving mannich condensation reaction. The structure of polymer and monomer was examined with the help of

International Journal of Recent Advances in Multidisciplinary Topics
Volume 2, Issue 10, October 2021
https://www.ijramt.com | ISSN (Online): 2582-7839

A Study on Training and Development among the Employees in Tamilnadu State Transport Corporation (TNSTC)

S. Lawenya[1*], L. Santhana Raj[2]

[1]*Research Scholar, Department of Commerce and Management, St. Joseph's College of Arts and Science, Cuddalore, India*

[2]*Associate Professor, Department of Commerce and Management, St. Joseph's College of Arts and Science, Cuddalore, India*

***Abstract*: This paper discusses about a study on Training and Development among the employees in Tamil Nadu State Transport Corporation (TNSTC). Training and Development is very important in every organization. Training and Development programs are essential for the employees to be well trained and educated for successfully reaching the attainment of the organizational goals. It is used to improve the effectiveness of training, skills, knowledge, abilities and work performance of the employees. Training and development programs can be very useful for the employees to tackle the situations and give solutions to the problems. Training and development can also be used to change the workforce attitudes, job performance, behaviour and creative thinking. There are two techniques of training and development; they are (1) On-the job training, (2) Off-the job training. Many challenges can be faced by employees to improve their job performance, relationship between the employers and the employees and to develop the organizational achievements.**

***Keywords*: Training and development, organization, job performance, employees, employers, TNSTC.**

1. Introduction

In 1944 after the Second World War, the British led Central Government in India appointed a committee to analyze and report the status of public transport in the country. The appointed committee analyzed the transport system all over India and found that a majority of the private operators in the transport sector were aimed at profit maximization only, ignoring public interest. The committee forwarded its report to the Government in 1946 recommending the nationalization of the Transport Sector in the better interests of the nation. The Government of India then accepted the recommendations of the committee and passed an order to all the states in India to nationalize the Transport Sector. On the basis of the order issued by the Central Government, the then Chennai Rajasthani Government passed an order on 24.03.1947 to nationalize 239 private buses which were operated in Chennai, the capital of the state. As per the order of the Government, all the buses operated in Chennai were nationalized gradually before July 1948 and named as „Government Bus Service". In independent India, the states were reorganized in 1956 on the basis of the languages spoken by the people in different regions of the nation. Thus, the human resource function in India has grown through several stages, e.g., labour welfare, industrial relations, labour administration, personnel management and finally to human resource management and human relations and human resource development. HRM has come a long way from being just a support, hygiene related function to a strategic function. The policy on Nationalization of Transport Service which came into force in 1946 was not widely accepted in principle. The State Transport Department and the committee recommended that transport service should not be directly under the control of the Government and that the department might take the shape of a limited corporation. Such an initiative, it was recommended, would enable the transport sector in Tamil Nadu to function efficiently with its economic and service objectives.

2. Review of Literature

Michael Jucius (1955) defines training as "a process by which the aptitudes, skills and abilities of employees to perform specific jobs are increased. According to Flippo (1971), "Training is the act of increasing the knowledge and skills of an employee for doing a particular job". Beach (1980) referred that "Training is the organized procedure by which people learn knowledge and/or skills for a definite purpose. Dubashi (1983) defined training as "A process of improving the knowledge skill and attitude of employees to achieve organizational objectives. It is only through a systematic program of training that necessary professional knowledge is imparted, skills developed and attitudes attuned to work situations. Drucker (1984) defined training as a "Systematic process of altering the behavior and/or attitude of employees in a direction to achieve organizational goals. Klatt et al, (1985) said that training is concerned with

*Corresponding author: lawenyamohan@gmail.com

ANALYSIS OF ORAL EPITHELIAL DYSPLASIA USING MACHINE LEARNING TECHNIQUE

S. Prabavathy[1], P. Aurchana[2], K. Padmavathi[3], R. Vidhyalakshmi[4]

[1] *Assistant Professor, Department of Computer Science, A.P.C. Mahalaxmi College for Women, Thoothukudi, India.*

[2]*Assistant Professor, Department of M.C.A., Sri Manakula Vinayagar Engineering College, Puducherry, India.*

[3,4]*Assistant Professor, Department of Computer Applications, St. Joseph's College of Arts and Science, Cuddalore, India.*

Abstract: The Oral Epithelial Dysplasia (OED) lesion is referred as a pre-cancerous lesion. It is a stepwise growth to cancer within the oral mucosa. The primary occurrence of a pre-cancer lesion is consequently increases the growth of the cancer cells in its surrounding area. In the proposed work, the Data Wavelet Transformation is applied to discriminate the normal and oral epithelial dysplasia disease affected images. For this the microscopic images have collected from Raja Muthiah Dental College and Hospital. The two feature extraction techniques namely Histogram Oriented features and Local Binary Pattern are used to extract the features. The extracted features are given as the input to Back Propagation Neural Network. The histogram oriented features with Back Propagation neural network gives the satisfactory results of 85%.

Keywords—Histogram Oriented Gradient (HOG), Local Binary Pattern (LBP), Back Propagation Neural Network (BPNN), Artificial Neural Network (ANN)

1. Introduction

Oral cancer can start as a primary lesion in any of the mouth's tissues, or it can spread from a isolated origin, or by extension from a neighboring anatomic structure, such as the nasal cavity. Alternatively, the oral cancers may originate in any of the tissues of the mouth, and may be of varied histological types: teratoma, adenocar-cinoma.

Under this Oral Dysplasia is a kind of precancerous lesion and the dysplastic stages are mild Dysplasia, moderate Dysplasia and severe Dysplasia.

Grading is done using support vector machine with highest accuracy in [1][2]. Now-a-days support vector machine plays an important role in many of the research fields.

Mild dysplasia (grade I)

It shows the proliferation / hyperplasia of cells of the parabasal and basal layers that does not extend beyond the lower third of the epithelium. Architectural changes are minimal.

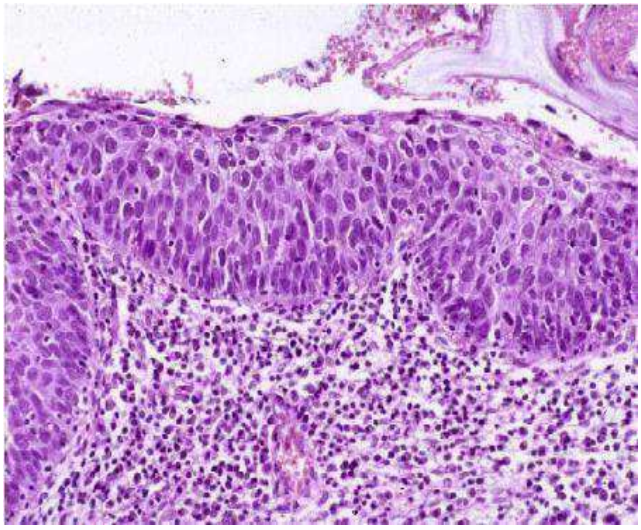


Figure 1.1. Mild Dysplasia

Moderate dysplasia (grade II)

It demonstrates a proliferation of a typical cells extending into the middle one-third of the epithelium [2][3]. Changes such as prominent cell, nuclear pleomorphism and hyperchromatism are more severe than in mild dysplasia which shows the Moderate Dysplasia in Figure 1.2.

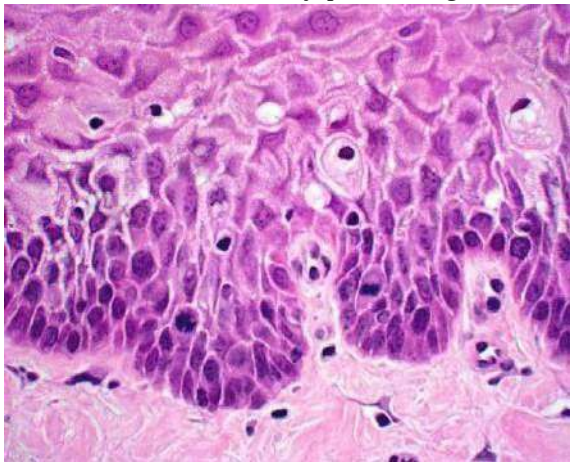


Figure 1.2. Moderate Dysplasia

In severe dysplasia (grade III)

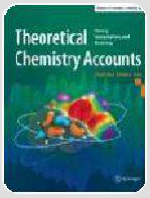
Into the upper third of the epithelium, there is an abnormal proliferation from the basal layer. Figure 1.3. shows the Severe Dysplasia. Cytological and architectural changes can be very prominent.

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

Chemistry of group-10 metals monohaloalumylene complexes [TM(CO)$_3$AlX]: a DFT study

Regular Article Published: 06 July 2021

Volume 140, article number 101, (2021) Cite this article



Theoretical Chemistry Accounts

Aims and scope

Submit manuscript

Alagan Sekar, Francisxavier Paularokiadoss, Selvaraj Immanuel & Thayalaraj Christopher Jeyakumar

Abstract

The reaction, electronic, molecular structures and bonding analysis of the haloalumylene substituted carbonyl complexes of the transition metal [TM(CO)$_3$(AlX)] (TM = Group 10 metals; X = Halogens) were investigated at DFT/B3LYP/LANL2DZ/6-31G* level of theories. The charge distribution, orbital interaction between the transition metal (M) aluminium atom were analysed by NBO calculations. Energy dissociation analysis of the metal fragment and the haloalumylene fragment was studied. The feasibility of [TM(CO)$_3$(AlX)] complexes were studied through ve members coordinated transition state (TS)

Ferroelectrics >
Volume 584, 2021 - Issue 1

Research Article

Synthesis and characterization of $Cu_{0.92}Co_{2.08}O_4$ nanoplates for supercapacitor electrode application

T. Antony Sandosh & A. Simi

Pages 187-197 | Received 16 Dec 2020, Accepted 24 Jul 2021, Published online: 08 Dec 2021

Cite this article https://doi.org/10.1080/00150193.2021.1984776 Check for updates

Full Article Figures & data References Citations Metrics

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Abstract

In this endeavor, the $Cu_{0.92}Co_{2.08}O_4$ materials were prepared by CTAB assisted hydrothermal technique with calcination process. The cyclic voltammetric analysis exhibit the specific capacitance of 543 Fg^{-1} at a scan rate of 5 mVs^{-1} whereas the galvanostatic charge/discharge studies provide the specific capacitance of 489 Fg^{-1} at a current density of 1 Ag^{-1}. The $Cu_{0.92}Co_{2.08}O_4$ nanoplate possesses low internal and charge discharge resistance which exhibit 93% of initial capacitance after 2000 continuous cyclic voltammetric cycles at a scan rate of 100 mVs^{-1}. These results

DOMINATION AND ITS RELATED PARAMETERS IN A TRIPLE LAYERED FUZZY GRAPH

L. Jethruth Emelda Mary and U. Gogulalakshmi

PG & Research Department of Mathematics,
St. Joseph's College of Arts and Science (Autonomous), Cuddalore,
Tamil Nadu, India.

Abstract:
In this paper, we studied domination of a Triple layered fuzzy graph, Complement of a Triple layered fuzzy graph and Complete Triple layered fuzzy graph and established bounds for the same graphs.

Keywords: Triple layered fuzzy graph, Complement of a Triple layered fuzzy graph, Complete Triple layered fuzzy graph.

1. Introduction

In the year 1965 ,L.A.Zadeh [12] introduced the notion of Fuzzy sets.The term Fuzzy graph was fisrt introduced by A.Kauffman[3].Moreover R.Rosenfield developed the concept of Fuzzy graph in the year 1975.The different types of Fuzzy graph was defined by Nagoorgani and Malarvizhi[4].The degree of a vertex of a fuzzy graph was presented by Nagoorgani and Radha[6].In this paper ,it is briefly discussed the fuzzy domination of Triple Layered Fuzzy Graph(TLFG) and fuzzy domination of complement of TLFG.Also established the bounds for fuzzy domination number $\gamma_f(G)$ and fuzzy perfect domination number $\gamma_{pf}(G)$ of Triple Layered Complete Fuzzy Graph(TLCFG).

2. Basic definitions

Definition 2.1[14]

The complement of a fuzzy graph G denoted by $\bar{G}$ is defined to be $\bar{G} = (\bar{\sigma}, \bar{\mu})$, where $\bar{\mu}(uv) = \sigma(u) \wedge \sigma(v) - \mu(uv)$.

2.1. Example

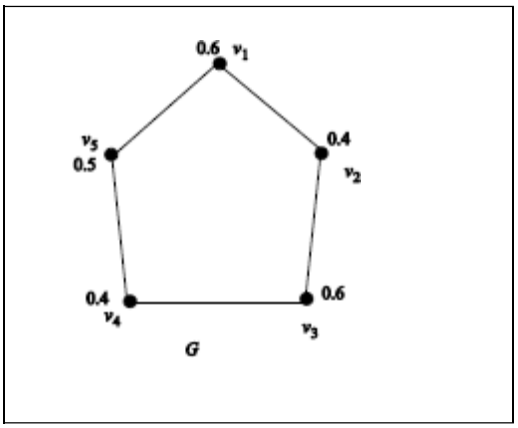

Figure : 1 $FG(C_5)=G$

A STUDY ON SOME NAMED GRAPHS TO FIND THE MINIMUM SPANNING TREE (MST) USING GREEDY ALGORITHMS

A Arokiamary and B Preethi

PG and Research Department of Mathematics,
St. Joseph's College of Arts and Science (Autonomous),
Cuddalore-607001, Tamilnadu, India.

E-mail: arokia68@gmail.com, preethibalaji1996@gmail.com

ABSTRACT: In this paper, Greedy Algorithms such as Kruskal's, Prim's, Boruvka's, Reverse-delete Algorithm were applied on different types of graphs like Mobius-Kantor graph, Durer graph, Golomb graph to find the (MST).

Keywords: Kruskal's Algorithm, Prim's Algorithm, Boruvka's Algorithm, Reverse-delete Algorithm, Mobius-Kantor graph, Durer graph, Golomb graph, Minimum Spanning Tree (MST).

1. Introduction:

A Graph consists of vertices and edges [5]. We use Greedy Algorithms to find the MST. First one is Boruvka's Algorithm [2] developed by Otakar Boruvka in 1926. Second one is Prim's Algorithm [2] invented by Vojtech Jarnik in 1930 and rediscovered by Prim in 1957. Kruskal's Algorithm [3] is the third algorithm which we use commonly. And the Fourth one is Reverse-delete Algorithm. It is the reverse Process of Kruskal's Algorithm, which is not commonly used.

In section 3, we use Mobius-Kantor graph, it is a graph with 16 vertices and 24 edges. In section 4, we introduce Durer graph, it is a graph with 12 vertices and 18 edges. And in section 5, we discuss about Golomb graph, it is a graph with 10 vertices and 18 edges. Thoughout the paper we use Greedy Algorithms to find the MST for these named graphs. And finally we conclude with the help of Greedy Algorithms, which is the best algorithm to find the MST.

2. Definitions:

2.1. Definition
A *graph* G is an ordered triple [1] < V, E, ψ > where V- set of vertices, E - set of edges and ψ - incidence function.

2.2. Definition
A closed trail [1] whose source and interior vertices are different is called a *cycle*.

2.3. Definition
A connected acyclic graph is called a *Tree[4].*

2.4. Definition
MST is a sub-component of the edges of a connected, undirected edge weighted [4] graph which connects the vertices side by side, with no cycle and with the minimum feasible total edge weight.

A STUDY ON DISTINCT FUZZY COLOURINGS AND DOMINATION PARAMETERS IN DOUBLE LAYERED FUZZY GRAPH

L. Jethruth Emelda Mary and R.Kiruthikaswari

PG and Research Department of Mathematics, St.Joseph's college of Arts and science College (Autonomous).Cuddalore-607001,Tamilnadu,India.

E-mail: jethruth15@gmail.com, kiruthiravi96@mail.com

Abstract:In Double Layered Fuzzy Graph, it is discussed that, the Fuzzy Vertex Colouring, Fuzzy Edge Colouring, Fuzzy Total Colouring and determined bounds for Fuzzy Chromatic Number, Fuzzy Edge Chromatic Number and Fuzzy Total Chromatic number. Also established some of the Domination parameters such as Fuzzy Dominator Chromatic Number, Inverse Domination, Connected Inverse Domination.

Keywords:Fuzzy Vertex Colouring, Fuzzy Edge Colouring, Fuzzy Total Colouring, Fuzzy Dominator Chromatic Number, Inverse Domination, Connected Inverse Domination and Double Layered Fuzzy Graph.

1. Introduction:

Here we have taken a graph to be a simple FG, n-order & m- size. Zadeh.L.A[9] was insinuated Fuzzy relation conceit in the year 1965. Rosenfeld was interpose the theoretical conception like cycle and connectedness and also intercalate the fuzzy graph. Fuzzy graphs colouring was interpolate by Mu˜noz et al in [6].Fuzzy Chromatic number as a Fuzzy number same the α-cut's. The FVC same by Onagh and Eslahchi [3] Developing Fuzzy Vertex Colouring in 2006. Term of Family of Fuzzy sets extended to Fuzzy Total Colouring in by Lavanya. S and Sattanathan. R[4]. Dominator colouring and dominator chromatic number was introduced by Raluca Gera et al. Total colouring was insert by Befzad afnd Vizing between 1964 and 1968. A.Somasundram and S.Somasundram insert the impression of domination in FG. S.C.Sigarkanti, it focused on the Inverse Domination in graphs. In dispute the FG and DLFG and to argue the conceit are FVC, FEC, FTC, FDCN, FID and CID also established Results on FG and DLFVC, DLFEC, DLFTC, DLFDCN, DLFID and DLCID dissucessed and illustrated with examples.

2. Definitions

2.1. Definition

Let $G_{DL} = (\sigma_{DL}, \mu_{DL})$ be a DLFG. A $\subseteq D$ of V is called DLFDS of DLF(G) if $\forall\ v \in V - D$, $u \in D \ni (u, v)$ is strong arc.

2.2. Definition

A DLF(G) is a PDLFC which that each vertex to DLF(G) Dominate every vertex of atleast some colour class.

3. FCN of FG and DLFG

3.1. Theorem

If G = (σ, μ) is a simple FG of Fuzzy Cycle of order n, then

Novel approach for Possibility Fermatean Bipolar Fuzzy Soft Sets and its Application

D.Sivakumar [1] , **R.Padmapriya** [2,†] , **S.Anjalmose** [3]
[1] Department of Mathematics,
Annamalai University, Annamalainagar, India
[2,3] Department of Mathematics,
St.Joseph's College of Arts and Science, Cuddalore, India.
e-mails: [1] sivakumarmaths1965@gmail.com, [2] priyasudhakar83 @ gmail.com,
[3] ansalmose@gmail.com
† corresponding author: R.Padmapriya

Abstract We talk about the theory of possibility Fermatean bipolar fuzzy soft sets, possibility bipolar fuzzy soft sets and define complementation, union, intersection, AND and OR. The possibility Fermatean bipolar fuzzy soft sets are generalization of Fermatean fuzzy soft sets and soft sets. Notably, we tend to showed De Morgans laws, associate laws and distributive laws that are held in the case of possibility Fermatean bipolar fuzzy soft set. Also, we indicate an algorithm to solve the decision making real life problem under soft set model. To compare possibility Fermatean bipolar fuzzy soft set and Fermatean bipolar fuzzy soft set for dealing with decision making problems and find a similarity measure is obtain.

Keywords: Fermatean bipolar fuzzy soft set, possibility Fermatean bipolar fuzzy soft set, decision making problem.

Mathematics Subject Classifications: 03E72, 06D72.

1 Introduction

Decision making is defining the alternatives and choosing one of them by applying certain criteria. Decision making, in short, is to choose one from different alternatives. Effective decision making ability is closely linked with creative and critical thinking abilities. Creative thinking is needed to produce the necessary alternatives to choose from in decision making and critical thinking to evaluate these alternatives. Decision support consultants are employed or decision support systems are implemented in order to support decision-making in an organization. This assumes that the way in which decision-making actually takes place in the organization is understood. Decision making is one of the most important abilities because people are always in the position of making decisions both in their private lives such as where to live, which job to choose, and in social issues such as which leader to elect and which team to support.

Many uncertain theories are put forward as fuzzy set [26], intuitionistic fuzzy set [4], bipolar fuzzy sets [8] and Pythagorean fuzzy set [25]. Zadeh was introduced by fuzzy set suggests that decision makers are to be solving uncertain problems by considering membership degree. The concept of intuitionistic fuzzy set was introduced by Atanassov [4] and is characterized by a degree of membership and non-membership satisfying the condition that sum of its membership degree and non membership degree is not exceeding 1. However, we may interact a problem in decision making events where the sum of the degree of membership and non-membership of a particular attribute is exceeds one. The concept of Pythagorean fuzzy set is introduced Yager. It was been to extend the intuitionistic fuzzy sets and characterized by the condition that squares of sum of its membership and non membership degree is not exceeds 1. The theory of soft sets proposed by Molodtsov [14]. It is a tool of parameterization for coping with the uncertainties. In comparison with other uncertain theories, soft sets more accurately reflects the objectivity and complexity of decision making. During

Materials Today: Proceedings 49 (2022) 2836–2841

Contents lists available at ScienceDirect

Materials Today: Proceedings

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

Antibacterial and anti bio film activities of novel antibiotic conjugated silver nanoparticles

Jayabalan Jayaprakash [a,⇑], D. Sankari [a], Pernabas Johnthomas [a], Devadoss Johnmilton [a], Chandrasekaran Swaminathan [a], M. Sathish [b], Mani Ganesh [c,d]

[a] Department of Microbiology, St. Joseph's College of Arts and Science (Autonomous), Cuddalore 607001, Tamilnadu, India
[b] Department of Physics, St. Joseph's College of Arts and Science (Autonomous), Cuddalore 607001, Tamilnadu, India
[c] Department of Chemical Engineering, Hanseo University, 46-Hanseo-1- ro, Haemi-myun, Seosan-si 31962, SouthKorea
[d] Dept of Pharmaceutical Chemistry, Srinivasn College of Pharmaceutical Sciences, Trichy 621112, India

ARTICLE INFO

Article history:
Available online 29 October 2021

Keywords:
Meropenem
Antibacterial
Anti bio film
Congo red
Antibiotic

ABSTRACT

This study reports an eco-friendly, cost effective and biological synthesis of meropenem antibiotic conjugated silver nanoparticles (mer-AgNPs). The synthesized (mer-AgNPs) nanoparticles were characterized using UV–Visible spectrophotometer, transmission electron Microscope, Fourier-transform infrared spectroscopy (FT-IR), TEM. mer-AgNPs have increased antibacterial activity against both Gram-positive and Gram–negative bacteria (*Staphylococcus aureus* (MTCC 96), *Listeria monocytogens* (MTCC 657), *Vibrio vulnificus* (MTCC 1145), *Shigella flexneri* (MTCC 1457), *Escherichia coli* (MTCC 1687), and *Salmonlla typhimurium* (MTCC 3224). In addition, mer-AgNPs are highly effective against biofilm producers compared to the antibiotic alone. The photocatalytic activity shows good results in Congo red with AgNPs.

Selection and peer-review under responsibility of the scientific committee of the Indo-UK International Virtual Conference on Advanced Nanomaterials for Energy and Environmental Applications (ICANEE-2020).

1. Introduction

Nanotechnology applications are highly suitable for the development of bio molecules, because of their exclusive properties like smaller size and surface to volume size etc. The biological molecules from plant and microbial are proved suitable for the metal nanoparticle synthesis which was found to be reliable and eco friendly [1–3]. Silver (I) oxide takes advantage of its low solubility in aqueous environment to slowly release silver ions as Ag $(OH)^{-2}$. The silver is complexes by silver ions rendering silver clusters (Ag^{2+}, Ag_4^{2+}) [4]. Nanoparticles show completely new or improved properties, such as size, distribution and morphology of the particles [5]. Nano- crystalline silver particles have been found various applications in the fields of high sensitivity biomolecular detection, diagnostic, antimicrobials [6], therapeutics, catalysis [2] and microelectronics. Physical and chemical routes also employed for synthesis of AgNPs, but due to their toxicity of chemicals used as reducing agent, the bio-synthetic route was reported as clean, non toxic and environmentally acceptable [1,7]. Ag NPs have attracted much attention as an efficient antimicrobial and biocompatible agent. These can strongly adhere with the cell wall which is required for better antimicrobial activity [8]. Iron oxide nanoparticles have extensive usage in biomedical applications such as cell labelling, tissue repair, magnetic resonance imaging, and drug delivery [9,10]. Biosynthesized NPs exhibit interesting size dependent catalytic and catalytic properties due to high surface to volume ratio [11,12]. At present widely researched approaches involves the use of metal based nanoparticle (1–100 nm) and quantum dots(QD's) such as gold, Silver,carbon, CdSe@ZnS and Zinc oxide to enhance bactericidal activity [12–16].The current study aims to designing unique antibiotic conjugated silver nanoparticles (mer-AgNPs) by a biological route and the antibacterial, bio-film reduction and photocatalytic activity were also evaluated. The physical characterization of synthesized mer-AgNPs utilizing UV–vis spectroscopy, Transition Electron microscopy

* Corresponding author.
E-mail address: prakash.j68@gmail.com (J. Jayaprakash).

https://doi.org/10.1016/j.matpr.2021.10.068
2214-7853/
Selection and peer-review under responsibility of the scientific committee of the Indo-UK International Virtual Conference on Advanced Nanomaterials for Energy and Environmental Applications (ICANEE-2020).

Journal of Molecular Structure 1249 (2022) 131580

Contents lists available at ScienceDirect

Journal of Molecular Structure

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

Synthesis, reaction pathways, homa, TG/DSC, spectroscopic and quantum computational analysis of (2E)-3-[3-(benzyloxy)phenyl]-l-phenyl-2-propen-l-one

K. Anbukarasi[a], S. Xavier[a,*], Joazaizulfazli Jamalis[b], S. Sebastian[a], Franciscxavier Paularokiadoss[c], S. Periandy[d], Richard Rajkumar[c]

[a] Department of Physics, St. Joseph's College of Arts & Science (Autonomous), Cuddalore 607 001, Tamil Nadu India
[b] Department of Chemistry, Faculty of Science, Universiti Teknologi Malaysia, Johor Bahru,81310 Johor, Malaysia
[c] Department of Chemistry, St. Joseph's College of Arts & Science (Autonomous), Cuddalore 607 001,Tamil Nadu,, India
[d] Department of Physics, Kanchi Mamunivar Centre for Post Graduate Studies and Research, Lawspet, Puducherry 605 008, India

Article info

Article history:
Received 13 July 2021
Revised 7 September 2021
Accepted 24 September 2021
Available online 26 September 2021

Keywords:
(2E)-3-[3-(benzyloxy)phenyl]-l-phenyl-2-propen-l-one
Fukui
HOMA
Endergonic energy
TG/DSC

Abstract

(2E)-3-[3-(benzyloxy)phenyl]-l-phenyl-2-propen-l-one, on its various biological application, its 3-Benzyloxychalcone derivatives were synthesized using Claisen-Schmidt condensation techniques. The target molecule was simulated with the transient coordinate analysis embedded in the quantum mechanical methods and reaction graph was plotted. The most attractive site where the reaction takes has been identified. The molecule was optimized to the minimum state. The deviations of bond length, bond angle in comparison with the XRD data were discussed. And wavenumbers of the molecule were analysed and corresponding vibrational modes were assigned. The charge of the global molecule and local atoms were discussed with Mulliken and Natural charges and Fukui functions, respectively.The chemical shift of the 13C and proton were analysed in NMR supported by GIAO method embedded in the Gaussian 09W software. The UV analysis were made with the experimental and λ_{max} was identified. Various reactive nature of the compounds was discussed with the reactive help calculations of the reactive descriptors. HOMA studies confirmed the aromaticity, cyclicity, degrees of cycle unsaturation and cycle condensation in poly cyclic systems. The molecule was also analysed its stability and disintegration with respect the temperature applying TG/DSC analysis. The molecule was docked with three cancer protein–Breast (Protein id 3HB5), prostate (Protein : 6XXO) and lung cancer (protein: 6CDX).

1. Introduction

The target synthesized chalcone derivatives molecule consists of benzyloxy phenyl as a parent molecule and phenyl propen attached at a para position the second ring of the benzyloxy phenyl [1]. This compound C_1 point group symmetry it has got dipole moment 4.6 debye. The dipole moment moves from propen to benzyloxy ring. Benzyloxy commonly used as protecting group to protect alcohol, amines, carboxylic acids and as well as deprotect by using palladium on carbon or by strong acids. It acts as an electron donating group because of lone pair availability on oxygen atom. Phenyl group hydrophobic nature and phenyl group have the resistance against oxidation and reduction. Generally, phenyl group is considered as an electron withdrawing group due to negative inductive effect. At the same time in different atmosphere, it acts as an electron donating group through resonance effect [2].

Formation of 3-benzyloxychalcones can be confirmed when there is presence of α, β-unsaturated carbonyl system. Chalcone is recently started to be the subject interest in academia and industry due to the display of its wide range of biological activities [3]. amongst the significant biological activities reported are antibacterial and antiviral [4], anticancer, antimalarial, antioxidant, anti-inflammatory and anti-tubercular activities as well as anti-Alzheimer [5]. Finally due to potential biological activities is subjected to molecular docking computation for protein induce [6].

The aim of the present investigations is to characterize BPPO using various spectral studies and correlate with quantum chemical calculation and wavefunction analysis techniques. In this work, the vibrational analysis was carried out by using FT-IR and FT-Raman spectroscopy in the range 4000–400 $cm^{-1}$and 4000–100 cm^{-1} for the compound. Geometrical parameters (bond lengths, bond angles) were the molecules positioned in the carte-

* Corresponding author.
E-mail address: puduvaixavier@gmail.com (S. Xavier).

https://doi.org/10.1016/j.molstruc.2021.131580
0022-2860/

Gastronomic Realism in Upton Sinclair's *The Jungle*

Author: S. Dharani
Department of English
St. Joseph's College of Arts and Science (Autonomous)
Cuddalore-1

Co- Author: X. Ann Lanka Jeyadharshini (Asst. Prof)
Department of English
St. Joseph's College of Arts and Science (Autonomous)
Cuddalore-1

Abstract:

Upton Sinclair's *The Jungle* is one among the greatest novels which presents the pathetic condition of the working class life in America. In the other hand it centers on the reality of the product which is consumed by the people in America. Gastronomic realism aims to show consumer about the reality of food products as of it. In non- European perspective people in America are living a healthy, prosperous life and the food they consume is healthy and hygienic. To demystify this myth which is projected towards America, my paper examines true reality of the American food products which is harmful to consumers through using analytical instrument of Upton Sinclair's *The Jungle*. Where capitalistic class fails to give quality products to the people instead they focus on commercial gain for themselves by selling unhygienic and harmful products. which became a gastronomical reality.

key words: Gastronomic realism, capitalistic class and consumer

Upton Sinclair's *The Jungle* clearly snapshots the life of working class people, the rise of capitalism and an adulteration in the production of food products. In this modern era people tend to be more modernistic in their way of life style. They are modernistic in clothing, food and so on. when it comes to modernistic way of foods, people changed their food habits from eating fresh foods to packaged and preserved foods. It shows the drastic cultural changes in the people of the society, this paper examines the cause of changes in this modern industrializing world.

Gastronomic realism is a sub-genre in realism which speaks about an adulteration in food products which aims to show the consumer through literature. Adulteration in food products is a serious notion of problem in this rapid developing society, which leads to cause health risks. In every day-to- day life human beings use different products in which there has been adulteration. Beginning from groceries and to the extends of medicine which is a lifesaving product and even in infant milk there will be adulteration. Food is one of the basic needs of human being to sustain in this world. Fresh, pure and hygienic foods is more common essential for people health. Maybe because of adulteration who consume adulterated food leads people to suffer from troubled diseases like beginning from stomach pain to cancer. Food adulteration is one of the consequential challenges in many countries even in developed countries like American, Russia, China and so on.

Shodhsamhita : Journal of Fundamental & Comparative Research
Vol. VII, No. 7 : 2021
ISSN: 2277-7067

PHYSICAL ABUSE FACED BY ADOLESCENT STUDENTS AT CUDDALORE DISTRICT, TAMIL NADU

***S. VANATHI** Ph.D. Research Scholar Center for Study of Social Exclusion and Inclusive Policy, Bharathidasan University, Tiruchirappalli.
Dr. K. SURIYAN Professor & Director Center for Study of Social Exclusion and Inclusive Policy, Bharathidasan University**.**

ABSTRACT
World Health Organization (1999) defined that 'CHILD PHYSICAL ABUSE' is an action or inaction, which result in actual or potential physical harm, that is within the control of or preventable by the parent, carer, school teachers or authorized person. There was a global meta-analysis explicit that there were 10 million participants expressed that the prevalence of child physical abuse were upwarded upto 22%. It is a 'widespread global phenomenon affecting the lives of millions of children all over the world ***(Robinson, 2019)****. When there is an occurance, the child will be purely physically injured or put risk of harm by another person. The elderly adolescent students facing the problems of physical abuse such as beating with some object, slap, burning to wound, pushing, pulling, hitting, hurting etc., in the government and private higher secondary schools, it is dealt in the full paper.*
Keywords: Physical abuse, Elderly adolescent students

INTRODUCTION
Physical abuse is any intentional act causing injury or trauma to another person or animal by way of bodily contact. It is an act or behavior lead to non-accidental causing trauma, injury or any physical sufferings bodily harm. It happens towards many people in different places, forms and times. In most cases, children are the victims of physical abuse, but adults can also be victims, as in cases of domestic violence or workplace aggression. Alternative terms sometimes used include physical assault or physical violence, and may also include sexual abuse. Physical abuse may involve more than one abuser, and more than one victim (**Child physical abuse)**.

This act of Physical abuse towards children often resulted from parents' attempts at child discipline through excessive corporal punishment **(Giardino, 2008)**.

It has been operationalised and is measured in ordinal scale to measure the gravity. It is scaled in 4 measures from physical abuse causing minimum physical damage, physical abuse causing moderate physical damage, physical abuse, moderate physical damage, physical abuse very severe physical damage and physical abuse causing very severe physical damage.

Minimum physical abuse: It includes physical confinement, continuous sit ups, pinching the thigh, twisting/screwing of ears, beating by measuring ruler, making the child to kneel down, knock on head, twist hand, hit on the back of forehand, spit, and hit with stick.

Moderate physical abuse includes, continuous domestic work, hit with broom and hard objects push the child, hit on face, and hit on stomach.

Severe physical abuse includes, forcing the child to hold bricks and stretch hands outward, kneel on salt, pour melted candle on sensitive skin, kick, punch and pock with rod and put hot rod on the body.

Very severe physical abuse means, biting, tying and beat the child, put ginger in the eyes of the child, tie child and spread sugar and make ants bite the Child, tearing at the child's mouth, making an adult sit on the back of the child and pull the child's neck backward, bang the child's head on the wall, hit with iron pipe, tie the child upside down by the legs to fan and hit the child, hit with iron crow bar, cut with knife, and attempt to kill **(Singh, 2004)**.

Forms of physical abuse

- Assault
- Battered person syndrome
- Child abuse

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

THE IMPACT OF FRENCH COLONIAL POLICY ON CASTE AND RELIGION IN THE FRENCH POSSESSION IN INDIAN WITH SPECIAL REFERENCE TO PONDICHERRY

Dr. R. Sudaroli
Assistant Professor
Dept of History, St. Joseph's College of Arts & Science
Cuddalore.

ABSTRACT

The impact of the French colonial policy in French settlements in general and Pondicherry in particular was mostly felt in the spheres of political development, administration, trade and religion. In other fields like agriculture and land settlement, industry, culture and literature the impact was only marginal While the influence of French colonial policy helped the spread of Christianity in the region, there was very little impact in respect of culture and literature as the French colonists did not seems to have had any definite or active policy in these two spheres. The French colonists followed an active policy in respect of the propagation of Christian religion but it cannot be said that they ever followed a bigoted and aggressive policy of forcible mass conversion of natives into Christianity[1]. As the Census Report of Pondicherry of 1961 says, "except for a few excesses of religious zeal they have invariably respected the manner and civilization of the people who were entrusted to their care". In this respect they differed very much from the Portuguese who persecuted the natives and followed a policy of forcible conversions.

Key Words: colonial policy, marginal, propagation, zeal, forcible conversions.

The impact of the French colonial policy in French settlements in general and Pondicherry in particular was mostly felt in the spheres of political development, administration, trade and religion. In other fields like agriculture and land settlement, industry, culture and literature the impact was only marginal While the influence of French colonial policy helped the spread of Christianity in the region, there was very little impact in respect of culture and literature as the French colonists did not seems to have had any definite or active policy in these two spheres. The French colonists followed an active policy in respect of the propagation of Christian religion but it cannot be said that they ever followed a bigoted and aggressive policy of forcible mass conversion of natives into Christianity[1]. As the Census Report of Pondicherry of 1961 says, "except for a few excesses of religious zeal they have invariably respected the manner and civilization of the people who were entrusted to their care". In this respect they differed very much from the Portuguese who persecuted the natives and followed a policy of forcible conversions.

J. Fac. Pharm. Ankara / Ankara Ecz. Fak. Derg., 45(2): 284-296, 2021
Doi: 10.33483/jfpau.897720

ORIGINAL ARTICLE / ÖZGÜN MAKALE

IN SILICO DRUG EVALUATION AND DRUG RESEARCH OF BIOACTIVE MOLECULE METHYL 4-BROMO-2-FLUOROBENZOATE

BİYOAKTİF MOLEKÜL METİL 4-BROMO-2-FLOROBENZOAT'IN İN SİLİKO İLAÇ DEĞERLENDİRMESİ VE ARAŞTIRMASI

Malayappan Maria JULIE[1], Thirutanasambantam PRABU[2], Fazilath Basha ASIF[3], Sambanthan MUTHU[4,5*]

[1]Department of Physics, St. Joseph's College of Arts and Science, 607 001, Tamilnadu, India
[2]Department of Physics, A. V. C College (Autonomous), 609 305, Tamilnadu, India
[3]Department of Physics, Islamiah College (Autonomous), 635 752, Tamilnadu, India
[4]Department of Physics, Arignar Anna Govt. Arts College, 604 407, Tamil Nadu, India
[5]Department of Physics, Puratchi thalaivar Dr. M.G.R. Govt. Arts and Science College, 603 406, Tamil Nadu, India

ABSTRACT

Objective: *The biochemical analysis plays an important role in pharmaceutical chemistry. Fungal infections are the most common infectious disease worldwide. The result of this research study can be very useful for the pharmacy and drug discovery process.*

Material and Method: *The experimental UV-Vis absorption is recorded with DMSO as solvent in SAIF IIT (Sophisticated Analytical Instrument Facility, Indian Institute of Technology, Chennai, India). Biologically active sites are reviewed by Gauss software via MEP. Toxic predictions are completed with the Preadme online tool. Protein-Ligand interaction was studied by Autodock tools 4.2.6.*

Result and Discussion: *Methyl 4-bromo-2-fluorobenzoate (MBF) molecule is structurally stable. Hydrogen binding sites of MBF molecule are found around carbonyl group. The HOMO/LUMO energy values are -6.509 eV and -4.305 eV, respectively. Stabilization energy (3.63 kcal/mol) was calculated as O4=C11 atoms. Toxicity parameters are calculated. Overall results shows stabilized MBF molecule is intoxic and suitable for drug nature of fungal diseases.*

Keywords: *DFT, drug likeness, molecular docking, NBO, toxicity*

* **Corresponding Author / Sorumlu Yazar:** Sambanthan Muthu
e-mail / e-posta: mutgee@gmail.com, **Phone / Tel.:** +914182225313

Submitted / Gönderilme: 17.03.2021 **Accepted / Kabul:** 12.04.2021

International Journal of Science and Research Archive
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.com/

(RESEARCH ARTICLE)

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Acoustic, thermal and optical properties of organic based disodium tartrate salt

M. Sathish [1], K. Venkataramanan [2], R. Padmanaban [2], Helan Ruth [3], K. Vadivel [3,*], and G. Ramalingam [4]

[1]*Department of Physics, St. Joseph's College of Arts & Science, (Autonomous), Cuddalore - 607 001.*
[2] *Department of Physics, SCSVMV University, Kanchipuram-631561.*
[3] *Department of Physics, Government Arts College, Viruddhachalam 606 001.*
[4]*Department of Nanoscience and Technology, Alagappa University, Karaikudi-630003.*

International Journal of Science and Research Archive, 2021, 02(01), 012–027

Publication history: Received on 10 January 2021; revised on 18 January 2021; accepted on 20 January 2021

Article DOI: https://doi.org/10.30574/ijsra.2021.2.1.0010

Abstract

In this work, acoustic, thermal, and optical properties were tested on the different concentrations of the Disodium Tartrate solutions. First, the viscosity studies were analyzed for the Disodium tartrate in the concentration range from 2% to 20% with different temperatures 303K, 308K, 313K, and 318K. It was noted that the relative viscosity and the activation energy of the prepared compound increase with increases in concentration and decreases with temperature increases. The properties like density and ultrasonic velocity are varied when increases the concentration of the aqueous solutions of Disodium Tartrate. In this study, the values of adiabatic compressibility show an inverse behavior when compared with ultrasonic velocity due to the interaction between solute and solvent molecules. Also observed that the inter-molecular free length is maximum for a lower percentage. The free volume for the compound is maximum at 2% and a minimum of 20%, since it reduces when the internal pressure increases. It was revealed that the classical absorption coefficient and relaxation time for Disodium Tartrate is minimum for lower percentage and minimum for a higher percentage. The interactions between the solute and solvent are confirmed through the property like specific Acoustical impedance. It was noted that the increase in internal pressure increases the concentration of the compound. The ion-solvent interaction was discussed by the relative association study, thus the values of relative association increases with an increase in concentration. The Rao's and Wada's constant increases linearly in aqueous solutions of Disodium Tartrate for the entire system.

Keywords: *Ultrasonic; Acoustic; Disodium; Tartrate; Aqueous.*

1. Introduction

Double salts are salts containing more than one cation or anion. A well-known double salt is an alum containing two cations (Potassium and Aluminum) and a sulfate anion. Other examples are potassium sodium tartrate and bromide. Alums are double sulphates of a monovalent cation and a trivalent cation containing water of crystallization. Double salts when dissolved in water dissociate into simple ions completely [1]. Tartaric acid is an organic (carbon-based) compound of the chemical formula $C_4H_6O_6$ and has the official name 2,3-dihydroxybutanedioic acid. In this name, the 2,3- dihydroxy refers to the two OH- groups on the second and third carbon atoms, and the butane portion of the name refers to a four-carbon molecule. The dioic acid portion communicates the existence of two organic acids (COOH) groups on the molecule. Tartaric acid is found throughout nature, especially in many fruits and in wine[2].

Tartrate salts are often used as food additives due to their ability to act as anti-oxidants. Disodium tartrate dehydrate, additive number (E335), is used as an emulsifier and binding agent in food products such as jam and sugar syrup[3].

* Corresponding author: K.Vadivel
Department of Physics, Government Arts College, Viruddhachalam 606 001.

Fuzzy relational equation of minimum-addition composition

Dr. S. Ramathilagam [1] and A. Arokiamary [2]

[1]PG and Research Department of Mathematics, Periyar Government Arts College,

Cuddalore, 607001, Tamilnadu, India.

[2]Assistent Professor, PG and Research Department of Mathematics,

St. Joseph's College of Arts and Science (Autonomous),

Affiliated to Thiruvalluvar University

Cuddalore – 607001, Tamilnadu, India.

Abstract: In this paper we introduce a new concept of fuzzy relational equation that is composition of minimum-addition. Several properties are also discussed with illustration of suitable examples.

Keywords: Fuzzy Sets, algebraic sum and product of fuzzy subsets, composition of minimum-maximum, composition of minimum-addition.

1. Introduction

Relation is an implication of the connectivity, reflexivity and similarity between two or more sets. Fuzzy relations are significant concepts in fuzzy theory and have been widely used in many fields such as fuzzy clustering, fuzzy control and uncertainty reasoning. The notion of fuzzy relational equations based upon the max-min composition was first investigated by Sanchez [1]. Fuzzy relational (relation) equations are identities of the form R ◦ S = T, where R, S and T are fuzzy relations (R is a fuzzy relation between sets X and Y , S is a fuzzy relation between Y and Z, and T is a fuzzy relation between X and Z). In this paper we introduce a new concept of fuzzy relational equation that is composition of minimum-addition. Several properties are also discussed with suitable examples.

A Survey on the Efficient Database to Improve the Understanding and Techniques Related to the Study of Lung Carcinoma

Authors	Amenraj Dr Vidya
Publication date	2021/6
Journal	Design Engineering
Volume	2
Issue	8
Pages	15664-15678

Description Chest cancer is the largest cause of cancer-related deaths annually and has the greatest financial cost compared to certain other types of tumors. Lungs cancer studies will seek to be critical in getting better results. Upon that premise of papers & comments on the Web of Science (WoS) network, the research implemented bibliometrics to conduct a quantifiable analysis of the survey outputs in the 24 big countries in disease research worldwide. Except for the Chinese, many countries' dedication to lungs cancer research has dwindled, and there is no connection between lungs cancer burdens and research dedication. Testing, monitoring, & standard of living study account for 4.3 percent, 1.8 percent, and 0.3 percent of overall lungs cancer research, according to a survey of primary research categories. Genetics (20%), systemic therapy (17%), & prognostic biomarker (17%) were the most popular study topics (16 ...

ScienSage

Journal of Advanced Scientific Research

Available online through http://www.sciensage.info

ISSN
0976-9595
Research Article

SYNTHESIS, SPECTRAL ANALYSIS, ANTIBACTERIAL ACTIVITY AND MOLECULAR DOCKING STUDIES OF SOME NOVEL DERIVATIVES OF COMBINED TETRAZOLE AND THIOSEMICARBAZIDE MOIETIES

D. Bhakiaraj*[1, 2], T. Elavarasan[1], M. Mathavan[3], S. Megala[4], E. Enbaraj[1], M. Gopalakrishnan[1]

[1]*Synthetic Organic Chemistry Laboratory, Department of Chemistry, Annamalai University, Annamalainagar, Tamilnadu, India*

[2]*Department of Chemistry, St.Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamilnadu, India*

[3]*Centre for Bioinformatics, School of Life Sciences, Pondicherry University, India*

[4]*Department of Microbiology, St.Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamilnadu, India*

**Corresponding author: dbhakiaraj@gmail.com*

ABSTRACT

A few novel tetrazolyl thiosemicarbazide derivatives namely, 1-(1-(1-aryl-1*H*-tetrazol-5-yl)ethylidene) thiosemicarbazides (**5a-5g**) were synthesized and their structures were confirmed by FT-IR, ^{1}H-NMR and ^{13}C-NMR studies. The synthesized compounds were screened against various microbial strains for their antimicrobial activities and the results shows good activities. The compounds **5b** and **5f** were showing promising activity against *Staphylococcus aureus* and *Escherichia coli*. Additionally, Molecular docking studies were also carried out for these Tetrazolylthiosemicarbazide derivatives and were docked against Enoyl-[acyl-carrier-protein] reductase of *Staphylococcus aureus* (saFabI), obtained from Protein Data Bank (4ALI) as this structure was resolved in complex with NADP and triclosan. From the docking results, the compounds **5b, 5d** and **5f** are found to be strong binders with saFabI and having stronger binding affinity with saFabI than triclosan-saFabI complex. Therefore, it can be inferred that tetrazolylthiosemicarbazide derivatives, in specific, compounds **5f**, **5b** and **5d** could be taken up for further evaluation towards novel drug design against *Staphylococcus aureus*.

Keywords: Tetrazolylthiosemicarbazide, Spectral studies, Antimicrobial activities, Molecular docking studies, *Staphylococcus aureus.*

1. INTRODUCTION

Widespread incidence of antibiotic resistance among 5,00,000 people with suspected microorganism infections across twentytwo countries revealed by WHO's New Global Antimicrobial Surveillance System (GLASS). Generally, most of the reported microbials are *E. coli, K. pneumonia, S. aureus and S. pneumonia.* Thiosemicarbazides are a class of heterocyclic compounds which have general molecular structure R_1R_2C=N-NH-CS-NH_2. Thiosemicarbazide groups have more applications in pharmaceutical industry and medicinal chemistry and treat as antibacterial compounds [1]. Especially imine bond (-N=CH-) present in the thiosemicarbazide moieties are very useful in organic synthesis. Researchers published many number of articles with antibacterial activities of thiosemicarbazide derivatives [2]. Thiosemicarbazide derivatives showed attractive results against anti-tumor [3-4], heart disease [5], angiogenesis [6], vascular disease [7], antiamoebic [8], antitubercular [9], antiproliferative [10] and anti-cancer [11-12]. Thiosemicarbazides are the most powerful intermediate for the synthesis of several active pharmaceutical ingredients (API) and they are used significantly in the field of medicinal chemistry. Azoles are important drug moiety in medicinal chemistry. Recently, researchers focus on developing new drugs in pharmaceutical fields containing azoles especially imidazole, triazole and tetrazoles. These kinds of compounds have more applications in synthetic medicinal chemistry. Small molecules are the dependable supply for coming across novel biologically more active medicinally important compounds. Particularly, tetrazoles have much more applications in pharmaceutical and medicinal chemistry because of its unique structure. The improvement of tetrazole chemistry has been largely associated with wide scale of uses for this type of compounds in pharmaceutical and agricultural field of chemistry [13-25]. Tetrazole

ANALYSIS OF CRITICAL PATH BY USING FUZZY TRIANGULAR NUMBERS

S. Anjalmose and K. Manju Parkavi

PG and Research Department of Mathematics
St. Joseph's College of Arts and Science (Autonomous),
Cuddalore-607 001, Tamilnadu, India.

E-mail: ansalmose@gmail.com, manjuparkavi9492@gmail.com

Abstract: The main aim of this paper is to find the critical path by using triangular fuzzy numbers, Fuzzy total float, free float and Independent floats are introduced and we discussed this with the suitable examples.

Keywords: Fuzzy Numbers, Fuzzy total float, free float and Independent float.

1. INTRODUCTION

The concept of fuzzy decision making problems- with maximizing decision was first proposed by Bellman and Zadeh [1]. In this approach they transform all the fuzzy arcs into crisp arcs by applying yogers ranking method . then we analysis P.K. De and Amitha Blincher Dynamic Programming and multi objective Linear Programming[4].

Network diagram plays a vital role to determine project completion time. The popular method of this technique which is widely used the Critical Path Method (CPM) and Program Evaluation and Review Techniques (PERT). Using critical path to find the network. The main goal of CPM is to identify critical activities on critical path. By using Triangular Fuzzy Number (TFN) to find Durationof critical path then we also find types of floats. In this work we find the Critical path by using Fuzzy Triangular Numbers.

2. DEFINITION

Let X be a universal set. A fuzzy set Ã define on X.A set of ordered pair of element whose first element $x \in X$, second element $\mu_{\tilde{A}}(x)$ is the membership value of element x in the set Ã. It is denoted by Ã or A, and it defined by, $A=\{(X, \mu_A(X))\backslash x \in X$ .where $\mu_A(x) \rightarrow K$ i.e $K \rightarrow$ constant.

Ilkogretim Online - Elementary Education Online, Year; Vol 20 (Issue 4): pp. 2615-2621
http://ilkogretim-online.org
doi: 10.17051/ilkonline.2021.04.299

SERVICE QUALITY IMPACTS ON CUSTOMER BRAND EQUITY IN TELECOMMUNICATION INDUSTRY

Shahila .D, Research Scholar, PG and Research Department of Commerce, St. Joseph's College of Arts and Science (Autonomous), Cuddalore.
Dr.P.ArulPrasad, Assistant Professor, PG and Research Department of Commerce, St. Joseph's College of Arts and Science (Autonomous), Cuddalore.

Abstract- Consumers are the hearts of any business. Telecommunication being a service oriented industry always puts priority to find ways of making customers comfortable and fulfilled. Sensing this importance, this study was carried to determine what service quality makes customers attitude towards brand equity of the Telecommunication Industry. The aim of this paper is to analyse the relationship between of service quality and customer brand equity in telecommunication network sector. The samples size for this study was 517. These sample respondents are selected by systematic random sampling technique. Descriptive statistics, ANOVA, multiple regression and correlation statistical tools were used to analysis of variance between determinants, the statistically significant differences and relationship between variables. It is observed that Tangibility and Assurance highly influence the brand equity among other brand equity variables.

Key words: Tangibility, Reliability, Responsiveness, Assurance, Empathy, Brand equity

I. INTRODUCTION

Brand equity is a marketing term that refers to the total value of the brand as a distinct asset. It can be rendered as the aggregate of assets and liabilities that are associated with the brand name and symbol which brings about the relationship customers tend to create with the brand. Brand equity is reflected in a way how consumers think, feel, and act towards a particular brand. Brand Equity can be defined as the premium charged by the company for its particular product or service offered as it has a renowned and recognized name in the market as compared to the similar line of products or services having same features and utility. It is the commercial value that is derived as a result of the positive perception of the consumer about the brand and its offerings. Companies can generate the positive and high level of Brand Equity for their specific line of products or services by making them memorable and recognized in the minds of the consumers creating an emotional connection through various marketing and promotional campaigns. There are positive as well as negative effects of Brand equity. If the effect is positive then most likely your revenue and sales will increase for the company or brand because the value of the company has increased. Whereas if the effect is negative then the sales and revenue will drop.

The purpose of this study is therefore to evaluate the concepts of service quality and its usefulness in the telecom industry in India. The study uses the SERVQUAL method to examine the difference between expectations and perceptions of service purchased through a provider of customer-oriented service provider. This study investigates how service expectations and customer perceptions are supported. The service quality best model has been used extensively to access the quality of retail / banking /hotel and hospitality industry however fewer approaches were reported in telecom industry.

The study has shown that SERVQUAL is an effective and stable measure of service quality throughout the industry (Bebko, 2000) tool. Quality of service based on the services that meet customers' expectations. In the component perceived the quality of service, consumers evaluate the substantially equivalent quality service rules outstanding. SERQUAL proposes that customers review the quality of service in five precise dimensions: tangibles, reliability, responsiveness, assurance and empathy. The SERQUAL tool consists of 22 statements to access consumer perceptions and expectations regarding service provider. The perception of a quality service comparison pleasant resulting from expectations with their perception of service provided (Zeithaml et al., 1990).Parsuraman et al. (1990) recommended that customer expectations are what the customers expect the service to be offered as an alternative then perhaps in the present. Zeithaml et al. (1990) has recognized four causes that affect customer expectations: word-of-mouth, personal needs, past experience, and external communications. A gap gets created when the belief of the services provided is not as per the expectation of the customers. This gap thus addressed with the

International Nano Letters
https://doi.org/10.1007/s40089-021-00343-z

REVIEW

Review on structural and magnetic properties of (Co–Zn) ferrite nanoparticles

R. Sagayaraj[1] · S. Aravazhi[2] · G. Chandrasekaran[3]

Received: 23 December 2020 / Accepted: 17 May 2021

Abstract

Mixed spinel ferrites are very popular because of their excellent flexible magnetic and electronic properties. This systematic review followed the guidelines for repotting physicochemical properties of Co–Zn ferrite. Non-magnetic cations doped (Zn^{2+}) cobalt ferrite to tune the structural and magnetic properties of the mixed spinel ferrite. In this review, paper focuses on various synthesis methods, change of pH, change of sintering, change of dopant and change of surfactant summarized for real-time applications.

Keywords Nanoferrite · Nanomaterials · Nanoproperties · Nanoparticles · Nanospinel ferrites

Introduction

Ferrites are materials of ferromagnetic oxide that have high resistivity and permeability. While ferrite magnetization is less than half the saturation of ferromagnetic alloys, it has advantages such as higher frequency applicability, high resistivity, lower price, higher heat and higher resistance to corrosion. The spinel ferrites have excellent potential applications in many fields, such as anti-cancer drugs, active components of ferrofluids, antennae, antenna rods, biomedical sensors, biomedicine electronics, catalysis, catalytic insulators, coatings, cellular therapy, electronic circuits power delivering devices, electromagnetic interference suppression, filters circuit, computer, colour imaging, cellular phones, drug delivery, digital diaries, disk recording, detoxification of biological fluids, ferrofluids, flexible recording media, gas detectors, information and energy storage media, instance microwave ovens, magnetic refrigeration, magnetic refrigeration, magnetic drug delivery, memory storage devices, mechanical hardness, magnetic resonance imaging (MRI) contrast enhancement, magnetic recording media, medical devices, magnetic sensors, magnetic cell separation, magnetic devices, magnetic anisotropy, microwave fascinating materials, magnetic soundtrack, microwave devices, magneto-optical recording media, switching devices, transformer cores, high-frequency systems, hyperthermia treatment, high-density digital recording disc, high-frequency transformers, satellite communication, solar energy conversion, sensors, satellite dish rod, magnetic fluid, permanent magnets, photo catalysis, hard disc recording media, radar devices, recording tapes, recording heads, recorder, read–write heads, high-frequency electric devices, video tape, video camera, transformer cores, tissue repair, TV, permanent magnets, loading coils, local communication [1–5]. Magnetism was observed as early as 800 BC in a naturally occurring material called load stone (Fe_3O_4) which was used for navigation purposes. Ferrites are very famous magnetic materials. Ferrites are dark grey and black. Ferrites are insulator materials possessing both electrical and magnetic attributes. Ferrites have less value of dielectric loss. Ferrites have a high value of permeability, constant magnetization in M–H curve and electrical resistivity [6]. In materials such as Fe, Ni, Co and Mn, let us describe the roots of magnetism. Let us begin with the simple fact that atoms create materials. Each atom contains an electron(s). Most people know that they have charging electrons. What people have not understood for many years (a century ago) is that electrons also have a spin-like property. There might

✉ R. Sagayaraj
sagayarajnancy@gmail.com

1 PG& Research Department of Physics, St. Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamilnadu 607001, India

2 Department of Physics, Arignar Anna Arts College, Villupuram, Tamilnadu 605602, India

3 Department of Physics, Pondicherry University, Pondicherry 605014, India

Published online: 02 June 2021

Applied Physics A (2021) 127:502
https://doi.org/10.1007/s00339-021-04653-z

Applied Physics A
Materials Science & Processing

Microstructure and magnetic properties of $Cu_{0.5}Co_{0.3}Mo_{0.2}Fe_2O_4$ ferrite nanoparticles synthesized by coprecipitation method

R. Sagayaraj[1] · S. Aravazhi[2] · G. Chandrasekaran[3]

Received: 5 April 2021 / Accepted: 1 June 2021

Abstract

In the current research, $Cu_{0.5}Co_{0.3}Mo_{0.2}Fe_2O_4$ mixed ferrite nanoparticles have been synthesized using the coprecipitation method. XRD patterns show the development of polyphasic copper, cobalt and molybdenum mixed spinel composition. The particle size of ferrite system is 16 nm and they are nanoparticles. The values of lattice constant are determined to be around 8.368 Å obtained for the highest peak (311). FTIR spectroscopy shows the lower octahedral and higher tetrahedral frequency alignment of ions in the spinel ferrite corresponding to 471 $cm^{-1}$and 550 cm^{-1}vibration modes, respectively. TEM micrographs illustrate spherical morphology and their grain size less than 50 nm, which correlates well with XRD crystallite size. VSM shows excellent ferrimagnetic properties vividly with a high coercivity (985.29 G). The high coercivity materials can make the active components of magnetic memory devices.

Keywords Coprecipitation · Nanoparticles · Ferrimagnetic properties · Coercivity · Ferrites

1 Introduction

Magnetic spinel ferrites have the usual formula of 'AB_2O_4,' where 'A^{2+}' and 'B^{3+}' ions have 'tetra(A)' and 'octa[B]' voids. Oxygen ions (O^{2-}) form a cubic arrangement with iron ions placed at two separate interstices between them [1, 2]. Ferrites composite attract more attention because of their high electrical resistance, special thermal properties and important magnetic properties when used as high-frequency devices [3, 4]. Unit cell of the magnetic spinel ferrite lattice contains 32 octahedral voids and 64 tetrahedral voids accessible for the respective cations, among which only 24 octahedral voids and 8 tetrahedral voids are engaged by the relevant cations [5–11]. Cobalt ferrite is famous for its inverse spinel structure, where Co^{2+} cations are octahedral and $Fe^{3+}$and Fe^{2+}cations are similarly distributed due to ionic radii in octahedral and tetrahedral voids [12]. Among spinel ferrites, cobalt spinel ferrite has special significance from a biomedical point of view due to its high saturation magnetization and high permeability [13]. Thomas Dippong et al. used calcinations at 1000 °C to create a $Co_xFe_{3-x}O_4$ ferrite nanoparticle. The materials had a cubic single phase. The average crystallite size ranges from 30 to 73 nm. The two subspectra arose as a result of Fe^{3+} in tetrahedral and octahedral cooperation, which was confirmed, as well as the formation of spinel ferrite. The coercive field value (1.078kOe) of cobalt ferrites is greater than the bulk coercive field value (980Oe) [14]. The hysteresis loops of $Zn_{0.5}Co_{0.5}Fe_2O_4/SiO_2$ particles annealed at 700 °C revealed superparamagnetism properties. This behavior is caused by the uncompensated spins of antiferromagnetic clusters, which generate massive effective spins that interact with the applied magnetic field. Because antiferromagnetic interactions exist in both intra- and inter-cluster spins, the magnetic properties of their samples were discovered to differ from those of conventional super paramagnetic systems. The hysteresis loops of ferrites annealed at 1000 °C show ferromagnetic behavior that is related to the distribution of Fe^{3+} and Co^{2+} ions within the lattice as well as crystallite size [15]. The fraction of the ferromagnetic phase increases with increasing annealing temperature, and the ferromagnetic behavior becomes dominant when the annealing temperature exceeds 400 °C [16]. In the

✉ R. Sagayaraj
sagayarajnancy@gmail.com

1 PG and Research Department of Physics, St. Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamilnadu 607001, India

2 Department of Physics, Arignar Anna Government Arts College, Villupuram, Tamilnadu 605602, India

3 Department of Physics, Pondicherry University, Puducherry 605014, India

Published online: 09 June 2021

BioNanoScience
https://doi.org/10.1007/s12668-021-00864-z

Evaluation of Bioactive Potential of a *Tragia involucrata* Healthy Leaf Extract @ ZnO Nanoparticles

Udhayan S[1] • Udayakumar R[1] • Sagayaraj R[2] • Gurusamy K[1]

Accepted: 5 April 2021

Abstract

The aim of the present work is to prepare ZnO nanoparticles (NPs) from *Tragia involucrata* leaf extract by low-cost technology. The extracted ZnO NPs were calcined at different temperatures such as 400 °C (TZ 1), 450 °C (TZ 2), and 500 °C (TZ 3). The as-prepared ZnO NPs were characterized using techniques such as TG-DTA, XRD, FTIR, and SEM. Based on the observations made using the above techniques, the calcination temperature was fixed at 450 °C and EDS, HR-TEM, and VSM studies were made for these samples. The XRD analysis revealed the hexagonal structure with the average crystallite size being ~ 27 nm for the different samples (TZ 1, TZ 2, and TZ 3). The occurrence of FTIR peaks in the region 600-450 cm^{-1} confirmed the presence of the Zn-O bond. SEM and HR-TEM images indicated the rod and conical shapes for the bio-synthesized ZnO NPs, and the d-spacing value has been found to be 0.24 nm with (1 0 1) lattice plane, matching very well with that of XRD. The SAED pattern clearly portrayed annular rings indicating the single crystalline nature. The results of VSM studies indicated a diamagnetic nature at room temperature. The green synthesized ZnO NPs were screened for antibacterial and antifungal activities. Among the bacteria used, *Klebsiella pneumoniae* has secured maximum sensitivity (22 mm) and *Proteus vulgaris* has secured minimum sensitivity (12 mm). In the case of fungal studies, *Aspergillus niger* showed a maximum sensitivity (16 mm) as compared to *Aspergillus flavus* (15 mm). Thus, it is concluded that the bio-synthesized ZnO NPs using *Tragia involucrata* leaf extract may serve as a potential candidate for biomedical applications.

Keywords Nanoparticles · Bioactive · Antibacterial · Antifungal · *Tragia involucrata* · ZnO

1 Introduction

A wide range of uses is found due to the particular physical characteristics and chemical reactivity of metal and metal oxide NPs [1]. Zinc oxide (ZnO) is a solid semiconductor substance that crystallizes as a quartzite arrangement with a direct energy gap of ~ 3.2 eV at ambient temperature [2]. It is used in a wide range of fields, such as electrical instruments, devices for communication, sensing devices, beauty products, ecology, bioscience, and the health care industry [3-5]. ZnO has been licensed by the US FDA as GRAS (generally accepted as safe as metal oxide). ZnO is included in the matrix of packaging, free to interact with food products that provide preservative effects [6]. In sunscreens, paints, and coatings, ZnO NPs are commonly used because they are translucent to visible light and have high UV absorption [7] and they are also used as ingredients in antibacterial creams, ointments and lotions, self-cleaning glass, ceramics, and deodorants [8]. NPs have appeared as a new antimicrobial branch, and ZnO NPs have also reported their existence as potential antimicrobial agents. The antimicrobial ability of ZnO NPs has recently been investigated and tends to have both antibacterial and antifungal properties. These are efficient against both Gram-positive and Gram-negative bacteria and also have significant activity against more aggressive bacterial spores [9]. Doping of ZnO NPs was also found to increase the antimicrobial activity of ZnO NPs with other metals, including gold, silver, chromium, etc. [10, 11]. ZnO nanosuspension inhibitory effects are often associated with their size and concentration, with smaller particles at higher concentrations providing greater inhibitions [12, 13]. The production of natural processes for the preparation of chemical elements and alloys has grown to become major component nano-fields in recent years. The biosynthesis of plant-based ZnO NPs is emerging as an eco-friendly and cost-effective process in light of this. In some areas, ZnO NPs have been prepared in a variety of ways

✉ Udayakumar R
drrurspub1@gmail.com

[1] Department of Physics, Annamalai University, Annamalainagar, Tamil Nadu 608 002, India

[2] PG & Research Department of Physics, St. Joseph's College of Arts and Science (Autonomous), Cuddalore, Tamil Nadu 607001, India

Published online: 20 April 2021

THE TOTAL IRREGULAR VALUE FOR DOUBLE LAYERED NEIGHBOURLY IRREGULAR FUZZY CHEMICAL GRAPHS

J. Arockia Aruldoss and S. Thamizhselvi

PG and Research Department of Mathematics,
St.Joseph's College of Arts and Science (Autonomus).
Cuddalore-607001, Tamilnadu, India

Email: aruligori@gmail.com, thamizhselvi476@gmailcom

Abstract: In this paper, using Neighbourly Irregular Fuzzy Graph and Neighbourly Irregular Chemical Graph, we introduce Neighbourly Irregular Fuzzy Chemical Graphs(NIFCG). We also discuss about the Total Irregular value for Double Layered Neighbourly Irregular Fuzzy Chemical Graphs(NIFCG) using edge cut method.

Keywords: Edge cut, Neighbourly Irregular Fuzzy Chemical Graphs, Double Layered Fuzzy Chemical Graphs, Total Irregular Fuzzy Chemical Graphs.

1. INTRODUCTION

A.Rosenfeld [1975] [7] A.Kauffman [1973] along with Yeh and Bang introduced the concepts of fuzzy graph. Inspired the papers of A.Nagoorgani [1] ,who introduced notations and some basic definitions for fuzzy graphs and fuzzy irregular graphs. J.Arockia Aruldoss [2] who introduced Neighbourly Irregular Chemical graphs inspired by S.Gnana Bhragsam [5] who introduced the NI graphs.

Throughout the paper we considered Neighbourly Irregular fuzzy chemical graph(NIFCG) and we used edge cut method to find The Total Irregular Value For Double Layered Neighbourly Irregular Fuzzy Chemical Graphs.
Section two contains basic definitions and we introduce a new definitions for Neighbourly Irregular and Neighbourly Total Irregular Double Layered Fuzzy Chemical Graphs, in section three presents the theoretical concepts and finally we give conclusion on Total Irregular Value For D_LNIFCG.

2. BASIC DEFINITIONS AND NEIGHBOURLY IRREGULAR, NEIGHBOURLY TOTAL IRREGULAR DOUBLE LAYERED FUZZY CHEMICAL GRAPHS DEFINITONS

A not empty set S has a fuzzy subset of mapping σ: S tends to [0,1] such that $\sigma(x)$ in [0,1] then $0 \leq \sigma(x) \leq 1$ where $x \in S$.

2.1 Definition

A *Fuzzy graph* is a pair of functions G: (σ,μ) where V is a fuzzy subset of σ, a symmetrical fuzzy relation μ is on σ . ie, σ: V $\rightarrow$ [0,1] and μ: V×V $\rightarrow$[0,1] ∋ $\mu(u,v) \leq \sigma(u) \wedge \sigma(v) \forall$ u,v∈ V.

2.2 Definition

Let G = (σ,μ) where$\tau(u) \leq \sigma(u)$for all u∈V and $\rho(u,v) \leq \mu(u,v) \forall$ u,v ∈ V which is said to be the fuzzy graph H = (τ,ρ) is called *fuzzy Subgraph.*

REVENGE, RETALIATION AND RETRIBUTION IN THE COLLECTOR OF TREASURES BY BESSIE HEAD

X. Ann Lanka Jeyadharshini[1] and V. Gnanaprakasam[2]
Dept. of English, Annamalai University

ABSTRACT

Bessie Head is a celebrated South African writer who is considered to be the most influential writer of Botswana. In her relatively short life on earth, she wrote many novels, short fiction and autobiographical works which give the readers a deep and personal insight into the colonial oppression of South Africa in particular as well as the patriarchal and tribal oppressions. This article intends to study the oppression suffered by the African women and their consequent retaliation, revenge against their oppressor, and also the retribution faced by the oppressors with reference to The Collector of Treasures by Bessie Head, an anthology of short fiction.

Keywords: *Oppression, colonialism, suffering, revenge, retaliation, retribution*

Introduction

Bessie Amelia Emery Head, who is celebrated as Botswana‘s most prominent writer, was born in South Africa in 1937.She is a mixed-race writer who migrated to Botswana from South Africa to flee from a horrendous past riddled with rejection and humiliation. She distinguished herself in various genres like short stories, novels and autobiographical works. It is almost inevitable for writers to draw from their life experiences to produce literary works. Their ideas and personalities are spread throughout their works to be interpreted by those who read them. Craig Mackenzie found all her works of fiction ―fashioned in some way from the author‘s experiences‖ (19). Born of an illegal union between a white mother and a black father, she was raised in a foster home. Her misfortunes doggedly followed her into marriage also. It lasted only for three years before she fled to Botswana with her son. There she had to wrestle for fifteen years as a refugee before she was granted citizenship. Her life experience of suffering made her poignantly aware of oppression against the women of her country and their struggles to survive against the tide of illiteracy, poverty and sex discrimination. According to Femo Ojo Ade ―Bessie Head takes sides with the woman whose story must be told‖ (81). She champions the oppressed and exploited African women thus becoming the voice of the voiceless. Craig Mackenzie describes ―the hardship women of the village experience‖ as the main focus of her stories. The Collector of Treasures, with the subtitle Batswana Village Tales, is a collection of short stories by Bessie Head published in 1977. She took a longer time to write this than it took her to write a novel. She started work on this book after he was able to find a home for herself in Botswana, where she felt that the African experience was continuous and unbroken (45) as she said in an interview. The collection consists of ―brief vignettes of traditional Botswana village life, macabre tales of witchcrafts and passionate attacks on male chauvinism‖. Bessie Head took immense care to complete these thirteen short stories as it was her desire ―to shape the individual stories in such a way that one trailed into the other‖ (11). This paper intends to analyse the themes of oppression, resistance, revenge and retaliation in a few stories from this collection.

Revenge and Retaliation of Dikeledi:

―The Collector of Treasures‖, the title story of the 1977 collection produced by Bessie Head indicts Botswanan men for objectifying and abusing women in their lives. The story begins in medias res with an unnamed woman being taken in a police truck to the state prison in Gabarone, the new capital of Botswana. The prisoner stares disinterestedly at the passing landscape. The long and lonely journey takes its toll on the woman that at a certain point ―she slowly crumpled forward in a wasted heap‖ as she becomes ―oblivious to everything but her pain.‖ She reaches the prison by night. She is incarcerated along with four other inmates, all guilty of murdering their husbands. The night wardress after knowing the protagonist‘s crime as ―man slaughter‘, remarks that ―it‘s becoming the fashion these days‖ (CT 88). When questioned by her

Novel approach for Possibility Fermatean Bipolar Fuzzy Soft Sets and its Application

D.Sivakumar [1] , **R.Padmapriya** [2,†] , **S.Anjalmose** [3]
[1] Department of Mathematics,
Annamalai University, Annamalainagar, India
[2,3] Department of Mathematics,
St.Joseph's College of Arts and Science, Cuddalore, India.
e-mails: [1] sivakumarmaths1965@gmail.com, [2] priyasudhakar83 @ gmail.com,
[3] ansalmose@gmail.com
† corresponding author: R.Padmapriya

Abstract We talk about the theory of possibility Fermatean bipolar fuzzy soft sets, possibility bipolar fuzzy soft sets and define complementation, union, intersection, AND and OR. The possibility Fermatean bipolar fuzzy soft sets are generalization of Fermatean fuzzy soft sets and soft sets. Notably, we tend to showed De Morgans laws, associate laws and distributive laws that are held in the case of possibility Fermatean bipolar fuzzy soft set. Also, we indicate an algorithm to solve the decision making real life problem under soft set model. To compare possibility Fermatean bipolar fuzzy soft set and Fermatean bipolar fuzzy soft set for dealing with decision making problems and find a similarity measure is obtain.

Keywords: Fermatean bipolar fuzzy soft set, possibility Fermatean bipolar fuzzy soft set, decision making problem.

Mathematics Subject Classifications: 03E72, 06D72.

1 Introduction

Decision making is defining the alternatives and choosing one of them by applying certain criteria. Decision making, in short, is to choose one from different alternatives. Effective decision making ability is closely linked with creative and critical thinking abilities. Creative thinking is needed to produce the necessary alternatives to choose from in decision making and critical thinking to evaluate these alternatives. Decision support consultants are employed or decision support systems are implemented in order to support decision-making in an organization. This assumes that the way in which decision-making actually takes place in the organization is understood. Decision making is one of the most important abilities because people are always in the position of making decisions both in their private lives such as where to live, which job to choose, and in social issues such as which leader to elect and which team to support.

Many uncertain theories are put forward as fuzzy set [26], intuitionistic fuzzy set [4], bipolar fuzzy sets [8] and Pythagorean fuzzy set [25]. Zadeh was introduced by fuzzy set suggests that decision makers are to be solving uncertain problems by considering membership degree. The concept of intuitionistic fuzzy set was introduced by Atanassov [4] and is characterized by a degree of membership and non-membership satisfying the condition that sum of its membership degree and non membership degree is not exceeding 1. However, we may interact a problem in decision making events where the sum of the degree of membership and non-membership of a particular attribute is exceeds one. The concept of Pythagorean fuzzy set is introduced Yager. It has been to extend the intuitionistic fuzzy sets and characterized by the condition that squares of sum of its membership and non membership degree is not exceeds 1. The theory of soft sets proposed by Molodtsov [16], it is a tool of parameterization for coping with the uncertainties. In comparison with other uncertain theories, soft sets more accurately reflects the objectivity and complexity of decision making during

A STUDY ON SOME NAMED GRAPHS TO FIND THE MINIMUM SPANNING TREE (MST) USING GREEDY ALGORITHMS

A Arokiamary and B Preethi

PG and Research Department of Mathematics,
St. Joseph's College of Arts and Science (Autonomous),
Cuddalore-607001, Tamilnadu, India.

E-mail: arokia68@gmail.com, preethibalaji1996@gmail.com

ABSTRACT: In this paper, Greedy Algorithms such as Kruskal's, Prim's, Boruvka's, Reverse-delete Algorithm were applied on different types of graphs like Mobius-Kantor graph, Durer graph, Golomb graph to find the (MST).

Keywords: Kruskal's Algorithm, Prim's Algorithm, Boruvka's Algorithm, Reverse-delete Algorithm, Mobius-Kantor graph, Durer graph, Golomb graph, Minimum Spanning Tree (MST).

1. Introduction:

A Graph consists of vertices and edges [5]. We use Greedy Algorithms to find the MST. First one is Boruvka's Algorithm [2] developed by Otakar Boruvka in 1926. Second one is Prim's Algorithm [2] invented by Vojtech Jarnik in 1930 and rediscovered by Prim in 1957. Kruskal's Algorithm [3] is the third algorithm which we use commonly. And the Fourth one is Reverse-delete Algorithm. It is the reverse Process of Kruskal's Algorithm, which is not commonly used.

In section 3, we use Mobius-Kantor graph, it is a graph with 16 vertices and 24 edges. In section 4, we introduce Durer graph, it is a graph with 12 vertices and 18 edges. And in section 5, we discuss about Golomb graph, it is a graph with 10 vertices and 18 edges. Thoughout the paper we use Greedy Algorithms to find the MST for these named graphs. And finally we conclude with the help of Greedy Algorithms, which is the best algorithm to find the MST.

2. Definitions:

2.1. Definition
A *graph* G is an ordered triple [1] < V, E, ψ > where V- set of vertices, E - set of edges and ψ - incidence function.

2.2. Definition
A closed trail [1] whose source and interior vertices are different is called a *cycle*.

2.3. Definition
A connected acyclic graph is called a *Tree[4].*

2.4. Definition
MST is a sub-component of the edges of a connected, undirected edge weighted [4] graph which connects the vertices side by side, with no cycle and with the minimum feasible total edge weight.

Hexagon Hesitant Fuzzy Multi – Attribute Decision Making Based On TOPSIS

S Johnson Savarimuthu [1] and S Kowsalya [2]

[1,2] PG & Research Department of Mathematics, St. Joseph's College of Arts & Science (Autonomous), Cuddalore, Tamilnadu, India

E-mail: johnson22970@gmail.com , kowsisekarm.sc@gmail.com

Abstract: In this paper hexagon hesitant fuzzy set is used to solve the higher order uncertainties with TOPSIS method. Hexagon Hesitant Fuzzy Multi Attribute Decision Making problems faced by the farmer who plant monsoon crops in Villupuram District.

Key Words: Multi Attribute Decision Making, Hesitant Fuzzy Set, Hexagon Fuzzy Set, Technique for order preference by similarity to Ideal Solution, TOPSIS.

1. INTRODUCTION

Lotfi A. Zadeh introduce Fuzzy Set Theory in 1965 and further developed by Dubosis and Prade, R.Yager Mizomoto, J.Buckly and many others. The most useful representation in fuzzy is membership function. Conception of fuzzy number and fuzzy arithmetic is first developed by Zadeh [8] and Dubosis and Prade [2]. After the familiarization of fuzzy set Lotfi A.Zadeh bring in the concept of fuzzy number in 1975[7]. It is special type of fuzzy set and mainly used to quantity qualitative and linguistic variable which are uncertain and vague in nature. Different type of fuzzy set [0,1] are explained to clear the vagueness. A fuzzy number is a number the estimation are not exactly correct in case of single valued function. Ranking Fuzzy Number revels leading part in decision making. The main problem in decision making is electing one among the collection. The decision maker should use fuzzy number in particular parameter to avoid non-reliable values when the parameter value is more than one. To make this happen Zadeh [1965] [4] introduced fuzzy set theory. The subject has become an interesting bough of Pure and Applied Science. Solving of Multi – Attribute Decision Making is the most practical application. Hesitant Fuzzy Set is initiated by Torra [6] this allows a factor be a set of different estimation between 0 and 1. Wang Et Al furnishes a prominent near by with HFSs to solve MCDM problems.In this paper, an addition has been made and developed near the proper the Hexagonal Hesitant Fuzzy Set (HHFS) come by means of decision making bundle TOPSIS. The difficult situation met by the cultivator in Villupuram District are scrutinized by means of our recently made Hexagonal Hesitant Fuzzy Multi – Attribute Decision Making (HHF – MADM) method.This topic has been proceeded in the given below patten. The theory of HFS, HHFSs and some of its

UGC Care Group 1 Journal
ISSN : 0005-8807

EMOTIONAL ABUSE FACED BY ADOLESCENT STUDENTS AT CUDDALORE TOWN, TAMIL NADU

S. Vanathi
Ph.D. Research Scholar, Center for Study of Social Exclusion and Inclusive Policy,
Bharathidasan University, Tiruchirappalli-24.

Dr. K. Suriyan
Research Guide, Professor & Director, Center for Study of Social Exclusion and Inclusive Policy,
Bharathidasan University, Tiruchirappalli-24.

ABSTRACT

Psychological abuse is a wound in terms of what it is and what it does: the sustained, repetitive, inappropriate behavior which damages or substantially reduces the potential creativity and mental processes of a person, including intelligence, memory, recognition, perception, attention, imagination, and moral development. It impairs the mental life which impedes mental development. But, emotional abuse is highly probable which may perpetrator to abuse a person which impairs the emotional life and impedes emotional development. It is not just parents or other caregivers who emotionally and psychologically abuse a person and also wars, famines, slavery, civil strife and professional childcare workers are also sources of abuse **(O'Hagan, 1995)**. This paper explores how emotional abuse deep rooted in many ways towards adolescence which imposed from one person to another. The victims are subjected to repeated threats, manipulation, intimidation and isolation which caused the adolescence to feel anxiety, fear, self-blame, and worthlessness which are dealt in this paper.

Keywords: Emotional abuse, adolescent students

INTRODUCTION

The foundation for good mental health are laid down in the emotional development infancy and later childhood and appears to be dependent upon the quality and frequency of response to an infant or child from a parent or primary caregiver **(O'Hagan, 1993; Oates, 1996)**. The parental response towards infants' emotions or expressive behaviours results in formation of an attachment bonds which develops in the early months and years of life, and is closely linked to the behavioural response of the parent and the ongoing cycle of parent-child interaction.

Emotional abuse is a kind of abusement rather psychological in nature. It can include anything either verbal, constant criticism, intimidation or more subtle tactics, such as manipulation, or displeasure with anyone. It is an on-going process in which an individual diminishes and erodes the self-esteem of another. Similar to brain-washing, constant abuse which effect in loss of self-confidence, sense of self-worth, trust in their own perceptions, and self-concept. It may be included with belittling, threats of abandonment or harm, or may be more subtle, such as unwanted "advice", or "guidance" **(UT Dallas' Mental Health Services for Students)**. It is a way to control another person by using emotions to criticize, embarrass, shame, blame, or otherwise manipulate another person. In general, it is an abusive action consisting of words and bullying behaviors that wear down a person's self-esteem and undermine their mental health**.** The children are generally abused caused in

அகநானூற்றில் அறிவியல் சிந்தனைகள்

அ.கிரேஸி ஜெனோவா
தமிழ்த்துறை, உதவிப்பேராசிரியை,
தூய வளனார் கலை மற்றும் அறிவியல் கல்லூரி (தன்னாட்சி), கடலூர்-1.

முன்னுரை:

உலகின் மூத்த மொழியாக விளங்குகின்ற தமிழின் பழமையைக் "கல்தோன்றி மண் தோன்றாக் காலத்தே வாளொடு முன் தோன்றிய மூத்தக்குடி" என்று புறப்பொருள் வெண்பாமாலை கூறுகின்றது. தமிழ்மொழி என்று தோன்றியது என்று இயம்ப முடியாத அளவிற்குத் தொன்மையும் பெருமையும் உடையதாகும். வியக்கும் அழுதிற்கும் நிகரான நம் தமிழ் மொழியில் அனைத்துத் துறை சார்ந்த கருத்துகளும் அடங்கியுள்ளன. நம் முன்னோர்கள் தமிழ் உணர்வு மட்டுமன்றி அறிவியல்நுட்பச் சிந்தனைகளுடனும் வாழ்ந்து காட்டினர் என்ற செய்தியைச் சங்க இலக்கியங்கள் எடுத்துக் கூறுகின்றன. இன்றைக் காலத்தில் அறிவியல் தொழில் நுட்பம் மனித வாழ்வில் மிக முக்கியமான இடத்தைப் பிடித்துள்ளது. இன்று நாம் பயன்படுத்தும் அனைத்துப் பொருட்களுமே அறிவியலின் கண்டுபிடிப்புகளால் நமக்கு கிடைத்தவை. அறிவியலில் பல துறைகள் இன்று உணரப்படுகின்றன. அன்றாட வாழ்க்கையில் ஏற்படும் மாற்றங்களின் காரணங்களையும், அவற்றின் அடிப்படைகளையும் புரிந்து கொள்ள முயலும்போது மனிதனின் சிந்தனை வளர்கிறது. அந்த வகையில் எட்டுத்தொகை நூல்களில் ஒன்றான அகநானூற்றில் சில பாடல்களை மட்டுமே ஆய்வுக்கு எடுத்துக்கொண்டு ஆய்வு செய்ய முற்பட்டது. இவற்றில் விண்ணியல் அறிவியல், மண்ணியல் அறிவியல் மற்றும் வேளாண்மை, மருத்துவ அறிவியலில் மிளகு, வேம்பு மற்றும் உரல் என்ற ஊட்டச்சத்துச் சொல் பற்றி மனையியலில் பேரா.பெ. வித்யா அவர்கள் குறிப்பிட்டுள்ள செய்தியையும், குறுநீர்க்கன்னல் அறிவியல் பற்றி அன்னிதாமக குறிப்பிட்டுள்ள செய்தியையும் அகநானூற்றுப் பாடல்கள் மூலம் எடுத்துக் கூறப்பட்டுள்ளது.

தரவுச்சொற்கள்: அகநானூறு, அறிவியலில் கதிரவன், வெள்ளிமீன், புவி வெப்பமடைதல் பருவ மழை, நாவாய், மண்ணியல் தன்மையில் செம்மண், வேளாண்மை குறுநீர்க்கன்னல், வேம்பு, மிளகு, உரன்.

முன்னுரை:

இயற்கையோடு இணைந்து வாழும் தமிழரின் அறிவியல் சிந்தனைகள் மாபெரும் உலக ஆளுமையாகும். விருந்தில் தொடங்கி மருந்து வரையிலும், பிறப்பில் தொடங்கி இறப்பு வரையிலும் தொழில்நுட்ப வளர்ச்சி இல்லாத காலந்திலேயே தமிழர்களின் பங்களிப்பு இருந்தது என்பது அறிவார்ந்த செயலாகும். "அறிவியல் என்பது மனிதன் தனது சிந்தனையை ஒருமைப்படுத்தி இயற்கையை அணுகித் தன் தேவையைப் பெறப் பயன்படுத்தும் ஒரு வியத்தகுக் கருவி" என்று கூறியுள்ளார். (1) 'அறிவற்றம் காக்கும் கருவி' (2) என்றார் திருவள்ளுவர். அறிவின் நுண்ணிலை வளர்ச்சியே அறிவியல். தமிழ் இலக்கியங்கள் சிந்தனைக் கருவூலமாகவும், அறிவுச் சுரங்கமாகவும் திகழ்கின்றது. இன்றைய மனித இனம் வாழ்வு, வளம், நலம், பண்பு, வசதிகள் அனைத்தும் மேனிலை அடைவதற்கு உறுதுணையாக இருப்பது உலகில் உலாவும் அறிவியலாகும். மேலை நாட்டார் கண்டறிந்த பல அறிவியல் உண்மைகளை அவர்களுக்கு முன்னே உலகின் முதன் முதலாகத் தோன்றிய தமிழர்கள் அறிவியல் துறையில் புலமைப் பெற்றிருந்தனர்

TRIBULATIONS OF EXPARTRIATE WOMEN IN MAXINE HONG KINGSTON'S *THE WOMAN WARRIOR*

Author: M.Rishika

St.Joseph's College of Arts and Science (Autonomous)

Cuddalore.

Co-author: Mrs.T.Jackuline Suganthi, Asst.Prof.,

St. Joseph's College of Arts and Science (Autonomous)

Cuddalore.

ABSTRACT

Feminism is a consciousness of all forms of women's oppression. Many theories should be evolved to bring out this excruciating situation of women. Feminism is necessary to understand how patriarchy and economic systems project oppression. Women are treated as instruments to achieve goals without appreciating their perspective. This story *The Woman Warrior : Memoirs of a Girlhood Among Ghosts* expresses how women face suppression in this chauvinistic society and as migrated women how they overcome all the barriers that were put in front of them. The author here portrays five women who play an active role in her life for the development of this dominated society. Empowering women can help the society to grow and develop at a faster pace. They are the one who redesign the world to a better place.

"There was no limit to what we , as women can accomplish"

- Michelle Obama

KEY WORDS: Feminism, Suffering , Patriarchy, Empowerment

To be born as a woman in society is considered to be a curse. Women face a lot of social issues and problems throughout their life. Women are considered to be a weaker sex and are considered weaker than men in every aspect . They wanted themselves to be proved in this chauvinistic society. They migrate from place to place not only to prove themselves but also to sustain themselves for survival . Women wanted to prove themselves equivalent to men in every aspect. Women were not allowed to participate in any activities like men. Some

Social Eco-feministic Perspective in J. G. Ballard's The Drowned World

Author: A. Parkavi
Department of English
St. Joseph's College of Arts and Science (Autonomous)
Cuddalore-1

Co- Author: M. A. Mary (Asst. Prof)
Department of English
St. Joseph's College of Arts and Science (Autonomous)
Cuddalore-1

Abstract:

J.G. Ballard is one of the most significant British authors of the 20th century. he is renowned for his climate fiction. And also the novel *The Drowned World* take a climatological approach to apocalyptic dystopia. J. G. Ballard's The Drowned World which is a post apocalyptic tetralogy. The novel deals with the quest for survival mainly about the global flood. In Addition Beatrice is the only women who is alive in flooded London and she is a sole women character of the novel. This paper deals with Ecofeminism which is a theory which merge feminist thought and eco-feminism. This novel The Drowned World integrates the concept of Social Ecofeminism thought of the female character Beatrice Dahl. This paper focuses on social Ecofeminism study of J.G.Ballard's The Drowned World. Finally, the connection between the Patriarchal Capitalism and oppressed women and nature is revealed in the paper with some references to the novel.

Keywords: Climate Fiction, Ecofeminism, Patriarchal Capitalism and Apocalytic

J. G Ballard climate fiction *The Drowned World* was published in the early 1960 which is the second Nobel of tetralogy. The Drowned World depicts the global flood which completely changes the world's natural balance and initiates the base structure of the new world. This story follows a group of scientist searching researching the environmental development in a uninhabitable and flooded London. This paper examines J. G. Ballard climate fiction The Drowned World was from eco feminist perspective and to reveal the connection between Patriarchal Capitalism and the oppression of women and nature through the only female character Beatrice Dahl. So it is exposed that through Beatrice how and in which ways, the oppression of women and nature are interdependence. Ecofeminism is applied in this paper because prevailing parallelism exit between the star of women and the state of the natural environment. In particular, this paper center on the setting, characters and the connection between them within the circumstances of the novel's plot.

Ecofeminism as a theory it was developed in the mid 1970 by Francoise d Eauborne and it was mostly identified as the combination of ecology and the feminist thought. Ecofeminist theorist claims the feminist IC perspective of ecopolitics which aims for an egalitarian, Collaborative society in which there is no dominant group.

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

Anthropocentrism in J.G. Ballard 'S the Wind from Nowhere

A. Parkavi[1], M. A. Mary[2]

[1]Department of English, St. Joseph's College of Arts and Science (Autonomous), Cuddalore-1
[2]Asst. Prof Department of English, St. Joseph's college of Arts and science (Autonomous), Cuddalore-1

ABSTRACT

Anthropocentrism is the belief that human beings are the central or most important entity in the universe. Anthropocentrism interprets the world in terms of human values and experiences. Although anthropocentrism has maintained a manner to understand the global, this has led to have an effect on all human domains . Rob Boddice asserts that during historic times, human beings have constantly appeared themselves in connection to divinities instead of animals . As a end result of those, human beings want to rethink their role inside this planet. J.G. Ballard does an splendid task in exposing human beings and their relation to the non-human global in his post-apocalyptic collection of novels. In J.G.Ballard 's climate fiction the first and foremost is The Wind from Nowhere though it is not his best.This paper deals with anthropocentrism to justify the usage of nature as an significant device which belongs to human beings. In this novel J.G.Ballard turns the anthropocentric belief the wrong way up through growing a global this is absolutely ruled through nature.

Keywords: Anthropocentrism, Ecocriticism, climate fiction and Apocalyptic.

Anthropocentrism refers to a human-centered, or "anthropocentric," point of view. In philosophy, anthropocentrism can refer to the point of view that humans are the only, or primary, holders of moral standing. Anthropocentric value systems thus see nature in terms of its value to humans; while such a view might be seen most clearly in advocacy for the sustainable use of natural resources, even arguments that advocate for the preservation of nature on the grounds that pure nature enhances the human spirit must also be seen as anthropocentric. Alternative, non-anthropocentric or anti-anthropocentric views include ecocentrism, biocentrism, and similar framings. The articles assembled here look at the question of anthropocentrism from a variety of points of view, proceeding from an investigation of the roots of modern anthropocentrism in Western philosophy and religion, and looking at the implications for anthropocentric thinking of the Darwinian revolution and the emergence of environmentalism. Questions of anthropocentrism and its alternatives emerge in part from the nature/culture divide, a fault line of Western philosophy and environmental thought. These categories differ significantly in other cultural settings, and discussions of anthropocentrism and its alternatives would take on a much-different character outside the confines of "Western" thought.

Many devoted environmentalists encompass a somewhat anthropocentric-based philosophical view supporting the fact that they will argue in favor of saving the environment for the sake of human populations. Grey writes: "We should be concerned to promote a rich, diverse, and vibrant biosphere. Human flourishing may certainly be included as a legitimate part of such a flourishing."[15] Such a concern for human flourishing amidst the flourishing of life as a whole, however, is said to be indistinguishable from that of deep ecology and biocentrism, which has been proposed as both an antithesis of anthropocentrism.[16] and as a generalised form of anthropocentrism.

Anthropocentrism has certainly fashioned each thing of human lifestyles. While bringing order to our lifestyles, it additionally has created sharp frontiers regarding our belief. The human race has been classifying itself as a advanced being specially different dwelling beings and has advanced an immoderate ego when it comes to those existence paperwork. Although anthropocentrism has maintained a manner to understand the global, this has led to have an effect on all human domains.

Rob Boddice asserts that during historic times, human beings have constantly appeared themselves in connection to divinities instead of animals . As a end result of those, human beings want to rethink their role inside this planet. J.G. Ballard does an splendid task in exposing human beings and their relation to the non-human global in his post-apocalyptic collection of novels.

Ballard tells the tale from an anthropocentric attitude to unveil its flaws and terrible effect. In philosophical terms, anthropocentrism is scrutinised from moral, ontological and epistemological views: As an moral view anthropocentrism refers back to the explicitly said or implied declare that simplest people have intrinsic fee; all different herbal beings

THE INCENTIVIZATION OF RACISM IN TO KILL A MOCKINGBIRD BY HARPER LEE

R. PRESKILA JOSEPHINE, B. PRABAKARAN Asst. prof.

M.Phil. Research scholar, Asst. professor

Department of English

St Joseph's college of Arts and Science, Cuddalore, Tamilnadu, India.

ABSTRACT

The Twentieth century novel, To Kill a mockingbird is written by the American Author Harper Lee in 1960. The novel deals with the suffering of Thomas Robinson in major theme of Racism. Tom is an African American boy who is been falsely accused for Raping Mayella Violet Ewells a white American woman. The author has narrated the story by the young white Girl Scout Finch. The novel has more incidents regarding the racism seen between the white Americans and the African Americans in the Alabama and the South in 1930's. The injustices and prejudices of Black Americans are widely spoken in this novel. To kill the Mocking is the best known novel of Harper Lee. It won the Pulitzer Prize. To kill a Mocking gives the impact of inequality and racism of the African Americans in American countries. The inequality seen between them is a key for the racial discrimination. The novels figures out some of the incidents that made Harper lee to burst out with her pen to write for the Black community. She brought the conclusion as a favor for Tom, which was dream of each African Americans living in American country. The justice was denied for the black Americans. They were been judged according to their skin color, even they are proved as innocence.

KEYWORDS: *Prejudices, Racism, struggle, hypocrisy, injustice and violence*

Nelle Harper Lee is an American novelist. She was born on April 28, 1926 in Monroeville, Alabama, United states. She died on February 19, 2016. Harper lee has won Presidential Medal of Freedom in 2007 for her contribution for literature. Her Novel to kill a mocking bird remains a bestseller novel which has been printed 30 million copies. This novel is been voted for "Best novel of the Century" by Library journal. The other work of the author is Go Set a Watchman. This book reveals the history of the character Dill. The racial discrimination in American countries is seen for decade of years. The African people have been taken as the slaves to the Americans.

They have been given independence but the inequality and injustice is playing a vital role in the lives of African Americans. The Africans were taken to American countries and they are been enslaved as the colonies. The fear of the growth of Black population made white to oppress the liberty given to them. Though many rulers came to rule American still now the racism is playing a vital role in every Black Americans life. Each novel has some intentional or unintentional reason for writing the novel. So the incidents of court scene are a real life incident which takes place in Alabama in 1936. When Lee was 10 years old, it is about the defense of two poor youth African American, who were accused as murders. That inspired Lee to recreate the scene of Tom Robison who was accused as attempt of rapping and hitting a white girl. Even though his innocence is proved in the mist of Jury members, Tom Robinson was murdered. He was murdered because the racism seen in the race of Tom Robinson. The white people believed that Tom would have committed the crime. The white people trained their mind as being blacks they commit crime, so the Black Americans faces the injustice in their day to day lives. Author wants to change that statement. This novel will break the barrier seen between the white Americans and the Black Americans in southern American country.

The novel revolves around the protagonist Jean Louie Finch also called as scout Finch. She and her brother Jem lives with their father Atticus Finch a lawyer. The black woman Calpurina is the maid in the house and she takes care of the two children, when Atticus leaves to court. Their cousin Dill comes to Maycomb to spend his summer holidays. Maycomb is an imaginary place created by Harper Lee. As young children they have more curiosity to explore the things. Next to their house is a haunted house in which a man called Auther Radley also called as Boo Radley lives. People in that surrounding say him as a ghost who lives inside the house, but no one has ever senn him. On hearing this Scout, Dill and Jem wants to see him so they were trying to look him through window but they could not find him, while hearing sound of Gunshot by Nathan Radley they rushed towards their house, while going Jem's pants got trucked in the fence of Boo's house. Then later after their father came home they went in search of the pants, they were surprised to see that Jem's pants is stitched and ironed and neatly folded near the window. Jem and Scout heard him as a ghost but this incident of Boo made their minds to know about Boo Radley. Boo Radley and Nathan Radley were brothers living in the surrounding of Maycomb called Radley Place. From the following days every day Scout and Jem are given surprising gifts in the Knothole of a tree in a Radley property. The children enjoyed on seeing the exciting gifts but Nathan does not like the children entering their property so he eventually corks the knothole with cement.

A STUDY ON HUMAN RESOURCE PRACTICES AND ITS IMPACT ON WORKFORCE GRATIFICATION WITH REFERENCE TO SELECTED COMPANIES IN CUDDALORE.

S AMMU, Ph.D (Part - Time) Research Scholar , St. Joseph's College Of Arts & Science (Autonomous), Cuddalore – 607001

sammu9128@gamil.com

DR. P . JAMES MARY, Assistant Professor in Commerce, St. Joseph's College Of Arts & Science (Autonomous) Cuddalore - 607001

ABSTRACT:

This study attempts to explore the impact of HR practices on Workforce Gratification in the context of selected companies in cuddalore. The sample size for the study is 100, by using simple random sampling technique. The main objective of this research was to discover the impact of HRM practices on the organizational performance of the Small Scale Industries. The research used a structured questionnaire to collect the data. The research findings indicate that there is positive relationship between HRM practices, Workforce' Gratification and organization performance.This research also shows that Workforce absenteeism has reduced and sales growth if the organization has improved due to the positive perception of workforce regarding HRM practices.

Key words: *HRM Practices, Workforce Gratification, Organization Performance, Small Scale Industries.*

INTRODUCTION

Human resource management (HRM) is defined as the productive use of people in achieving the organization's strategic objectives. HRM practices enable the shaping of employee's skills, abilities, values, attitudes, beliefs and behaviors through hiring and developing a firm's pool of human. The performance of an organization depends upon the effective use of its human resources. An organization has to forecast its manpower requirements and need to alter its manpower planning accordingly for the development of the organization.

Human resource is very important and needs to be utilized efficiently for the success of the organization. The importance of manpower in business management is rapidly increasing and is getting accepted universally. Human resource is the most delicate factor of production and need to be treated very carefully as their performance influences the performance of the organization.

Even though there is very close relationship among the owners/managers and the employee in small scale industries human resource management has become a very sensitive issue here. Human resource management includes different practices such as Recruitment, Selection, Training & development, Compensation, Performance Appraisal and Employee Welfare. If good human resource practices are followed an organization can reduce the employee turnover, and the overall performance of the organization can be increased.

REVIEW OF LITERATURE

There is lot of literature which is in favour of HRM practices and its positive impact on organizational performance (Huselid, 1995; Cecily G. Wamuuru, Denis MuchangiJamleck ,2016; Sundar K, P. Ashok Kumar,2012; P.C. Narware,

PERCEPTION LEVEL OF CONSUMERS TOWARDS GREEN FMCG PRODUCTS WITH SPECIAL REFERENCE TO CHENNAI DISTRICT

M. TAMILARASI, Research scholar(Part-Time), St. Joseph's College of Arts & Science (Autonomous), Cuddalore-600 7001

DR. R. KRISHNAKUMAR, Associate Professor, St. Joseph's College of Arts & Science (Autonomous), Cuddalore-600 7001

ABSTRACT:

In recent days, environmental issues have received a great deal of discussion in the field of marketing. When the society becomes more concerned with the natural environment, businessmen have begun to modify their behavior to address the society's new concern. With the growing perception about the implication of global warming, non-bio degradable solid waste, harmful impact of pollutants etc, both marketer and consumers are switching to eco-friendly products and many companies have accepted their responsibility not to harm the environment and not to waste the natural resources. The research study took place in Chennai district of Tamil Nadu. A questionnaire is designed in order to find out the awareness level of consumers towards green FMCG products in order that 100 respondents were taken for the study.

Keywords: *Eco-friendly products, consumer perception, eco-label, social responsibility.*

INTRODUCTION:

Due to increase in global warming and climate change the public concern for environmental issues is gradually increased over the past decades. The customers are started demanding eco-friendly products and they pay more attention to the environment, wealth and health. The companies are started adopting green marketing practices in their activities as a part of social responsibility and they were trying to reach the customers with their green messages. The "Green movement" then has entered the mainstream status in many developed countries, where ecofriendliness is becoming a major consumer preference among the best living in such nations. But though in India, the green movement has started in the late 1990s and 2000s, it was still in the infancy stage. Eco-friendly products are those products hat will not pollute the earth or deplore natural resources, product which can be recycled or conserved, products with natural ingredients, products containing organic elements and products contents under approved chemical.

Fast Moving Consumer Goods (FMCG) is considerably a large sector in the Indian economy. FMCG also known as Consumer Packaged Goods (CPG), are products that are sold quickly at relatively low cost. Though the absolute profit made on FMCG products is relatively small, they generally sell in large quantities, so the cumulative profit on such products can be large. In India the FMCG sector has to open their eyes on eco-friendliness.

Consumer Perception defined as the way that customer usually known about certain service of products.

REVIEW OF LITERATURE:

Environmental marketing is also known as Green Marketing, sustainable marketing and ecological marketing. The American Marketing Association (AMA) "Green marketing is the marketing of products that are presumed to be environmentally safe. It incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising". Worldwide evidence indicates people are concerned about the environment and are changing their behavior accordingly (Polonsky, 1994).

எட்டுத்தொகையில் அறிவியல் செய்திகள்

ச. லீமா
தமிழ்த்துறை, உதவிப்பேராசிரியை
தூய வளனார் கலை மற்றும் அறிவியல் கல்லூரி (தன்னாட்சி)
மஞ்சக்குப்பம், கடலூர் - 1.

ஆய்வுச்சுருக்கம்

தமிழுக்கும் அறிவியலுக்குமான தொடர்பினை திருவள்ளுவர் காலத்திற்குச் சில ஆயிரம் ஆண்டுகள் முன்னர் தொடங்கி கிழக்கிந்திய கம்பெனி நம் நாட்டில் காலூன்றிய காலம் வரை தமிழர் பல துறைகளிலும் சிறந்தோங்கித் தனி ஆதிக்கம் செலுத்தி வந்துள்ளனர். எட்டுத்தொயில் அறிவியல் செய்திகள் என்ற இக்கட்டுரையில் எட்டுத்தொகையில் சில பாடல்களை மட்டுமே பக்க வரையறையின் காரணமாக ஆய்வுக்கு எடுத்துக்கொண்டு ஆய்வுச் செய்ய முடிந்தது. இவற்றில் ஒல்பர்ஸின் புதிர் பற்றிய செய்தி ஏணிச்சேரி முடமோசியார் பாடல் மூலமும், அக்னி நட்சத்திரம், தாவர அறிவியலில் மரம், பூ, நார் பற்றிய செய்தி, கட்டிடக்கலை, முதலைப் பற்றியச் செய்தி மற்றும் மருத்துவ குறிப்பில் அக்காலம் முதல் இக்காலம் வரை இலக்கியமும் இலக்கியத்தில் கூறப்பட்ட மருத்துவமும் உதவிய விதத்தையும், கணிதவியல், இலக்கியத்தில் எவ்வாறு எல்லாம் கூறப்பட்டன, பயன்பட்டன என்ற குறிப்பு பரிபாடல், நற்றிணை, அகநானூறு, புறநானூறு, பதிற்றுப்பத்து, ஐங்குறுநூறு, குறுந்தொகை, கலித்தொகை பாடல் வரிகள் மூலம் கூறப்பட்டுள்ளன.

குறிச்சொற்கள்

எட்டுத்தொகை, அறிவியல், செய்திகள், கணிதவியல், மருத்துவம், முதலை, ஒல்பர்ஸ், அக்கினி நட்சத்திரம், மரம், நார், குறிஞ்சிப் பூ, கட்டடக் கலை

முன்னுரை

தமிழ் இலக்கியங்கள் காலத்தின் கண்ணாடி கடைச்சங்க காலத்தில் தோன்றிய எட்டுத்தொகை மக்களின் அகப் புற வாழ்வை சித்தரிக்கும் ஒரு ஓவியம் என்றே கூறலாம். தமிழர்தம் நாகரிகமும், மொழியும் எப்போது தோன்றின என்றே கண்டுணர முடியாத அளவு தொன்மைக் கொண்டவை. பண்டைய தமிழர் நாகரிகத்தின் சிறப்புகளை நாம் அறிந்து கொள்ளச் சான்றுகளாக இருப்பவை சங்க இலக்கியங்களே. இவை தமிழரது இனியதொரு நாகரிகத்தையும் குறிப்பனவாக உள்ளன. தமிழர்தம் பண்பு நலன்களையும், சமூக வரலாற்றையும் காட்டும் காலப்பெட்டகங்கள் சங்க இலக்கியங்கள். "பழம் சங்கப் பனுவலைக் கற்றால் கிழம் போகும் கீழ்மையும் போகும்"[1] என்கிறார் தமிழறிஞர் வ.சுப. மாணிக்கனார். இலக்கியச் செல்வம் நிறைந்த செம்மொழியான எட்டுத்தொகையில் அறிவியல் பற்றிய குறிப்புகள் நிறைய காணப்படுகின்றன. அவற்றில் வானவியல், மருத்துவம், மரங்களின், செடி, கொடி, நார்களின் சிறப்புகள் போன்ற பல்வேறு செய்திகளைக் இக்கட்டுரையில் காணலாம்.

ஒல்பர்ஸின் புதிர் பற்றியச் செய்தி

வான் பொருட்கள் ஏராளமான சங்கத்தமிழ்ப் பாக்களில் பயன்படுத்தப்பட்டுள்ளன. புறநானூற்றின் முதல் பாடலே நிலவின் இளம்பிறை என்று தான் தொடங்குகிறது. ஆய் அண்டிரன் என்ற மன்னனை உறையூர் ஏணிச்சேரி முடமோசியார் இவ்வாறு பாடுகிறார்.

புறநானூறு பதித்துச் சென்ற அறிவியல் தடங்கள்

முனைவர் ஆ.கசித்ரா
உதவிப்பேராசிரியை,தமிழ்த்துறை,
நாயகளார் கலை மற்றும்அறிவியல்கல்லூரி(தன்னாட்சி), மஞ்சக்குப்பம், கடலூர்.

தலைப்பருக்கம் :

அறிவியல் கண்டுபிடிப்புகள் பெரும்பாலும் அல்நாட்டாருக்கே சொந்தம் என்பது போன்ற ஒரு மாயை நம்நாட்டவர் மத்தியில் உலவும் ஒரு நாலும் ஆனால் நம் சங்க இலக்கியங்களாகிய எட்டுத்தொகை,பத்துப்பாட்டு நூல்களில் இன்பெறும் பாடல்கள் சில சங்ககால மக்கள் அறிவியல் சிந்தனையோடும் அதைப்பற்றிய நுணுக்கங்களோடும் அறிவியல் கண்டுபிடிப்புகளோடும் நீண்டகாலம் வாழ்ந்துள்ளனர் என்பதைப் பறைசாற்றுகின்றன. முக்கியமாக விண்வெளி நுணுக்கள் குரியன் செல்லும் பாதை, விண்மீன்கள், சந்திர் விண்வெளியின் இயல்பு போன்ற பல கண்டுபிடிப்புகள் இந்நூல்களில் பொதிந்துள்ளன. இந்த கருத்துகளோடு நாவாய் என்ற கப்பல், வானூர்தி, சுற்றுச்சூழல் அறிவியல், ஆலைகள், பொறிகள் என்ற இச் சிந்தனைகளையும் பொருளாகக் கொண்டு இக்கட்டுரை எழுதப்பட்டுள்ளது. மேலும் சங்கத்தொகை நூல்களுள், புறநானூற்றினை மட்டுமே ஆய்வுக்களமாக இக்கட்டுரையில் எடுத்தாளப்பட்டுள்ளது.

முன்னுரை :

பல்வேறு காலக்கட்டங்களில் பல்வேறு புலவர்களால் பல்வேறு பகுதிகளிலிருந்து பாடப்பட்ட புறப்பாடல்களும் அகப்பாடல்களும் ஆரியில் இருந்தத் தமிழ்ச்சங்கத்தில் தொகுக்கப்பட்டு பாதுகாக்கப்பட்டு வந்தன. ஆனால் பல பாடல்கள் பல்வேறு காரணங்களால் நம் பார்வைக்கு வரும் முன்பே அழிந்து போயின. எஞ்சிய பாடல்களைக் கால வரிசைப் படுத்தாமல் புலவர்களும் புலவர்களும் தங்கள் அயராத முயற்சியால் தொகைநூல்களாகத் தொகுத்து அரும்பணியாற்றி உள்ளனர். ஒவ்வொருவரும் இருந்த அந்த அரிய சொத்தினையைத் தேடி ஒன்று சேர்த்து, காலத்தின் தேவைகேற்ப தமிழ்த்தாத்தா உ.வே.சா அவர்கள் அச்சுவடியில் உருவாக்கி உரையும் எழுதி, உலகறிந்து புகழ்பெறும் அளவு நூல் வடிவாக்கினார். இத்தொகை நூல்களுள் புறநானூறு தமிழக வரலாற்றைப் பறைசாற்றும் ஆவணமாகத் திகழ்கின்றது என்றால் அது மிகையாகாது. புறம் கூறும் இந்நூல் போர், வீரம், பல்வேறு உணவுகள், உடைகள், பல்வேறு நில மக்கள், வாணிபம், வரத்தாய், வீரமகள், தீப்பாய்தல், சமாதியாதல் எனப் பல செய்திகளை உணர்ச்சிப்பூர்வமாக வெளிப்படுத்தி உள்ளது. இருப்பினும் இன்றைய அறிவியல் உலகம் தேடத்துடிக்கும் தேடிக்கண்டு பிடித்தப் பல கண்டுபிடிப்புகளையும் அன்றே புறநானூறு தன்னிடத்தில் புதைத்து வைத்துள்ளது.

பெண்கள் தழை ஆடை உடுத்தியதைக் குறித்துச் செல்லும் அகநானூற்றுப்(அகநானூறு 7) பாடலே, சங்க இலக்கியப் பாடல்கள், வரையறுக்க முடியாத பழமையான காலத்துப்பாடல்கள் என்பதைப் பறைசாற்றுவனவாக உள்ளன. புறநானூற்றில் நில எல்லையை வரையறுத்துக் கூறும் காரிகிழார், 'வடக்கின் இமயமலையின் வடக்கும், தெற்கில் உள்ள அச்சம் பொருந்திய குமரியாற்றின் தெற்கும், கிழக்கில் சாகரரால் தோண்டப்பட்ட கடலின் கிழக்கும், மேற்கில் உள்ளதான பழமையான முதிர்ந்த கடலின் மேற்கும்', என்ற இப்பாடலில் குமரிக்கடல் காட்டப்படவில்லை(புறம்6). மாறாக குமரியாறு காட்டப்படுகின்றது. கிழக்குக் கடல் காட்டப்படுகின்றது. ஆனால் அது சாகரரால்