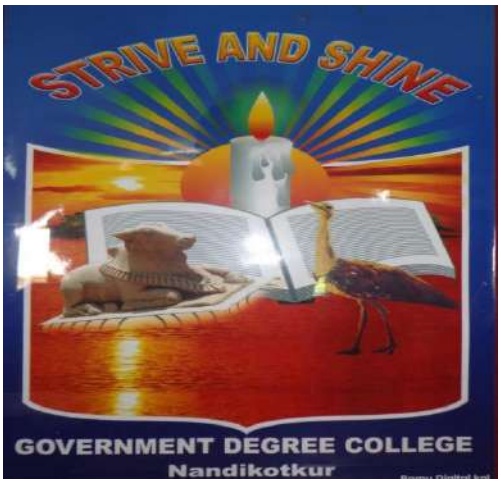
Government Degree College, Nandikotkur



3.3.1: Number of research papers published.

GOVERNEMENT DEGREE COLLEGE, NANDIKOTKUR					
3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during the last five years					
Sno	**Title of paper**	**Name of the author/s**	**Department of the teacher**	**Name of journal**	**Year of publication**
1	Some Properties Of Simple Ternary Semigroups	T.Sunitha	Mathematics	International Journal of Mathematics Trends and Technology	2019
2	Sita Puni Boli Upanyas Mein Sita Ke Mansik bhav tarangon ki abhivyathi	M.Parvathi	Hindi	An International Journal Bilingual Peer referred research journal, Shodh Saritha Volume-6	2019
3	Effect of Heavy Metals on plant growth & development	G.V.Ranga Reddy	Botony	International Journal of Research	2019
4	Challenges of climate in conservation of biodiversity	G.V.Ranga Reddy	Botony	International Journal of scientific research & Review	2019
5	Comparative studies on Metabolitic composition of Boswellia serrata & B.Ovalifoliolata	G.V Ranga Reddy	Botany	International online Multdisciplinary Journal	2019
6	Garwaas ' upnyas mein pratipadit samakalinsamasyav on ka simhavalokam	M.Parvathi	Hindi	An International Journal Bilingual Peer referred research journal, Shodh /sanchar Bulletein Volume-6	2020
7	Phytomorphological and Medicinal Peoperties of Boswellia serrata & B.Ovalifoliolata	G.V Ranga Reddy	Botany	Research Journal of Life Sciencs , Bioinformatics, Pharmaceutical and Chemical Sciences	2020

8	Ancient Two Temples in Kurnool Dist	A. Venkata swamy	History	Ancient Two Temples in Kurnool Dist	2020
9	A Study on EEG Signals for Epileptic Seizure Detection using Machine Learning Classifiers	Smt.T.Jhansi Rani	Computer Science	IEEE	2021
10	Analysis of Chat based artificial intelligence (AI) marketing	Dr.S.Mohana Murali	Commerce	International Journal of Natural Science	2022
11	Effective Epileptic Scizure Detection using enhanced Salp Swarm Algorithon based long short term Memory Network	T. Jhansi Rani	Computer Science	IETE Journal of Research	Dec. 2022
12	Sliding window based high Utility Item-Sets Mining over Data Stream Using Extended Global Utility Item-Sets Tree	P.Amaranath Reddy.	Dept.Of Comp.Application	I.J. Image, Graphics & Signal Processing	Oct. 2022
13	A Study of Phytosociogical attributes of Shrub Plant Resources In Nallamalais	Dr. T.Shalisaheb	Botany	Int.J.of Phytology Research	Feb. 2023
14	Effect of Fire on Plant Distribution & Germination	Dr. T. shalisaheb	Botany	Int.J. of ScientificDevelopment & Research	March. 2023
15	Phytosiological attributed of Climber species in Nallamalais India	Dr.T.Shalisaheb	Botany	Int.J. Of Scientific Development & Research	June.2023
16	Luminescence & Photometricactvity of an intense green emitting ZnBiBaBFTe;Tb3 glasses	C.Sumalatha	Physics	I.J. Radiation Physics and Chemistry	March.2023

17	Structural, electrical and Magnetic Behavior of strontium substituted Samarium cobaltite Nanoparticles	Dr.T.Kalimulla	Physics	Neuro quantology	Dec.2022
18	Thermocoustic Parameters of some liquid muxtures of O- chloroaniline with F, NMF and N, N-DMF	Dr.T.Kalimulla	Physics	I.J.of Multidisciplinary research	March-april.2023

Some Properties Of Simple Ternary Semigroups

T.Sunitha[#1], Dr. G. Shobhalatha*[2] and Dr. U Nagi Reddy[#3]
[#1]Research Scholar, Dept. Of Mathematics, Rayalaseema University, Kurnool-518007
[#1]Lecturer in Govt. Degree college, Nandikotkur, Kurnool.
[*2]Professor, Dept. of Mathematics, Sri Krishnadevaraya University, Anantapur -515003
[#3]Asst. Professor ©, Dept. of Mathematics, Rayalaseema University, Kurnool -518007.

***ABSTARCT**: Completely simple semigroups was studied by P. R. Jones and simple ternary semigroups was studied by G. Sheeja and S. Sri Balaji in 2013. In this paper we considered Simple Ternary semigroups and we proved some proved their some properties. Mainly we prove that If $(T,.)$ is a ternary semi-group then T is left, right and lateral simple if and only if every fuzzy quasi ideal of T is a constant function.*

***Key Words:** Ternary Semigroup, Regular, Simple Semigroup, Ideals, Fuzzy Quasi ideal.*

1. INTRODUCTION:

A semi-group not containing proper ideals or congruences of some fixed type. Various kinds of simple semi-groups arise, depending on the type considered: ideal-simple semi-groups, not containing proper two-sided ideals (the term simple semi-group is often used for such semi-groups only); left (right) simple semi-groups, not containing proper left (right) ideals; (left, right) 0-simple semi-groups, semi-groups with a zero not containing proper non-zero two-sided (left, right) ideals and not being two-element semi-groups with zero multiplication; bi-simple semi-groups, consisting of one $\mathcal{D}$-class (cf. Green equivalence relations); 0-bi-simple semi-groups, consisting of two $\mathcal{D}$-classes one of which is the null class; and congruence-free semi-groups, not having congruences other than the universal relation and the equality relation. In 1932, Lehmer introduced the concept of a ternary semigroup. He investigated certain ternary algebraic structures called triplexes. Santiago developed the theory of ternary semigroups and semiheaps. He studied regular and completely regular ternary semigroups. The notion of quasi ideals and bi-ideals in ternary semigroups presented by Dixit and Dewan, Kar. Maity investigated congruences of ternary semigroups and Iampan studied minimal and maximal lateral ideals of ternary semigroups. In this paper, we proved some results on simple ternary semigroups.

Definition 1.1: A non-empty set T is said to be ternary semigroup if there exists a ternary operation $\cdot : T \times T \times T \to T$ written as $(a,b,c) \to a.b.c$ satisfies the following identity $ab(cde) = a(bcd)e = (abc)de$ for any $a,b,c,d,e \in T$.

Definition 1.2: A ternary semigroup T is said to be a ordered ternary semigroup if T is a ordered set with the relation "$\leq$" such that $a \leq b \Rightarrow aa_1a_2 \leq ba_1a_2$, $a_1aa_2 \leq a_1ba_2$ and $a_1a_2a \leq a_1a_2b$ for all $a,b,a_1,a_2 \in T$.

Definition 1.3: A non-empty subset A of a ordered ternary semigroup T is called a Left (lateral, right) ideal, of T if it satisfies following:

1) $TTA \subseteq A (ATT \subseteq A, TAT \subseteq A \, respectively)$
2) If $a \in A \,\&\, b \in T$ such that $b \leq a$ then $b \in A$.

Definition 1.4: Let X is a non empty set. A fuzzy set μ of the set X is a function $\mu : X \to [0,1]$.

Definition 1.5: Let $F(T)$ denote the set of all fuzzy sets in a ternary semigroup T . For A,B,C$\in F(T)$, $A \subseteq B$ and $B \subseteq C$ if and only if $A(x) \leq B(x)$ *and* $B(x) \leq C(x)$ in the ordering of [0,1], $\forall x \in T$.

Definition 1.6: A fuzzy set $A \in F(T)$ is said to be a fuzzy sub semigroup of a ternary semigroup T if $A(xyz) \geq \min\{A(x), A(y), A(z)\} \forall x, y, z \in T$.

Definition 1.7: A fuzzy set $A \in F(T)$ is said to be a fuzzy left (resp., lateral and right) ideal of a ternary semigroup T if $A(xyz) \geq A(z)$, (resp., $A(xyz) \geq A(x)$, and $A(xyz) \geq A(y)$) $\forall x, y, z \in T$.

Definition 1.8: Let f and g be two fuzzy subset of T , define the relation $\subseteq$ between f and g respectively as,

ISSN - 2348-2397
UGC Approved, Journal No. 48838
SHODH SARITA
SHODH SARITA
Vol. 6, Issue 22, April-June, 2019
Page Nos. 97-99
AN INTERNATIONAL BILINGUAL PEER REVIEWED REFEREED RESEARCH JOURNAL

"सीता पुनि बोली" उपन्यास में सीता के मानसिक भावतरंगों की अभिव्यक्ति

वन. पार्वती*

शोध सारांश

लेखिका सीता पुनि बोली उपन्यास में, सीता की अभिव्यक्ति, मनोवैज्ञानिक धरातल पर की है। महाग्रंथों में सीता का चित्रण महाशक्ति जगज्जननी और देवी स्वरूप के रूप में अभिव्यक्ति की है। लेखिका यही कहना चाहती है कि – नारी देह की जगह, पृथ्वी के गर्भ से अपना जन्म लेने का समाचार बाल्य में ही सीता के मानस पर क्या बीती होगी! मूलतः सीता के मानसिक भावतरंगों की ओर प्रकाश डालने का प्रयास की है। परम्परागत रूप को छोड़कर, मनोवैज्ञानिक विचारधाराओं पर अधिक ध्यान दिया गया है।

जनकपुर के विदेह राजा जनक की दुलारी, राम की सहधर्मिणी दशरथ और कौशल्या की अत्यंत पुत्रवधु, लक्ष्मण, भरत और शत्रुघ्न की माँ सदृश भाभी, राजमहल से लेकर वन और आश्रम जीवन में एक सामाजिक संस्थाओं में बँदी सीता की स्मृति त्रेता युग से प्रवाहित होती हुई आज भी जन-जन के हृदय और भारतीय मानस में रची-बसी है। उसके सत ने सात समुद्र पार भी प्रवास किया है। लाखों प्रवासी भारतीयों ने विदेशों में भी उस सत को अपनी पूँजी के रूप में सँजोकर रखा है।

आदिकवि वाल्मीकि ने रामकथा के माध्यम से करुणा में पगा आदर्श प्रस्थापित किया। तुलसीदास ने अपनी रचना – श्रमवरित मानस का उद्देश्य "स्वयं स्वांत सुखाय निजगिरा पावनी करन तथा स्वांतस्तम स्वांत सुखायवर बताया है। सीता की उपस्थिति के बिना दोनों कवियों के उद्देश्य पूरे नहीं हो सकते थे।

महाग्रंथों में सीता का चित्रण महाशक्ति जगज्जननी और देवी स्वरूपा के रूप में करके उन्हें मानवीय गुण-दोषों से परे कर दिया गया। किसी ने यह सोचा ही नहीं कि नारी देह की जगह, पृथ्वी के गर्भ से अपना जन्म लेने का समाचार बचपन में ही सीता के मन पर क्या बीती होगी।

रचना प्रारंभ करने से पूर्व मेरी लेखनी जितनी थकमाई थी, उतना ही सहज गति से आगे बढ़ती गई, मानो मैथिली स्वयं अपना मानस खोलकर पढ रही हो, हिया के दर्द और हुलास उडेल रही हो, दर्द को उत्सव में परिवर्तित कर रही हो, लंका की पीडा को भी उत्सव बना रही हो। राम के प्रति अपने हिया की प्रेमबेल को पीडा-रस से सींचती रही हो। इसलिए मेरी लेखनी ने तो मात्र द्रष्टा का काम किया है। रामकथा के प्रमुख पडावों पर सीता के हृदय और मस्तिष्क का स्पर्श भर किया है। समाज-मन पर अंकित सीता की मानवीय छवि को उकेरा है।

सीता की आत्मकथा लिखने के लिए अपनी लेखनी उठाने के पूर्व मैं असमंजस्य में अवश्य थी। पर सीता के जीवन के कठिनतम प्रसंगों में भी उनसे बातें करना सुखद अनुभूति थी। रचनाक्रम में मैं स्वयं सुख-दुःख, राग-विराग, कुतूहल जैसे भावों में डूबती-उतराती रही। सभी स्थितियों में आनंद निहित, रचना का सुख, सीता (नारी) का जीवन स्वयं सृष्टि की अमूल्य, अक्षय और अमर रचना है।

इस उपन्यास के रचना-उद्देश्य के विविध पहलू इस प्रकार हैं। जैसे कि- (प्रथम) त्रेतायुग कालीन के सामाजिक और धार्मिक विचारधाराओं की ओर आलोकित करना, (द्वितीय) सीता के मानसिक भावतरंगों को रेखांकित करना। तृतीय प्रश्नचिन्हों के प्रति निष्ठा रखते हुए, आधुनिक मूल्यों पर प्रकाश डालना, आदि।

"सीता पुनि बोली" उपन्यास के लेखिका –"मृदुला सिन्हा" है, जो हिन्दी साहित्य लेखिकाओं में अग्रगण्य हैं। लोकसंस्कारों और लोक साहित्य में स्त्री की शक्ति-सामर्थ्य ढूँढती लेखनी उनमें भारतीय संस्कृति के अथाह सूत्र पाकर धन्य हुई है।

जनकपुर के विदेह राजा जनक की दुलारी, राम की सहधर्मिणी, दशरथ और कौशल्या की अत्यंत प्रिय पुत्रवधु, राजमहल से लेकर वन और आश्रम जीवन में अनेक सामाजिक संस्थाओं में बँदी सीता की स्मृति त्रेता युग से प्रवाहित होती हुई आज भी जन-जन के हृदय और भारतीय मानव में रची-बसी है, लाखों प्रवासी भारतीयों ने विदेशों में भी उस सत को अपनी पूँजी के रूप में सँजोकर रखा है।

महाग्रंथ में सीता का चित्रण महाशक्ति जगज्जननी और देवी स्वरूपा के रूप में करके उन्हें मानवीय गुण-दोषों से परे कर

*पीएच.डी. शोध छात्र, रजिस्टर नंबर: पी पी हिन्दी 0004,श्रीवासवीय विश्वविद्यालय, कर्नूल –518002 आंध्रप्रदेश

Effect of Heavy Metals on Growth and Development of Plants

G. V. Ranga Reddy, Lecturer in Botany, Dept. of Botany
Government Degree College, Nandikotkur, Kurnool dist., Andhra Pradesh, India

ABSTRACT:

Heavy metals have strong influence on nutritional values and therefore, plants grown on metal-contaminated soil were nutrient deficient and consumption of such vegetables may lead to nutritional deficiency in the population particularly living in developing countries which are already facing the malnutrition problems. Heavy metal contamination is a globally recognized environmental issue, threatening human life very seriously. Increasing population and high demand for food resulted in release of various contaminants into environment that finally contaminate the food chain. Edible plants are the major source of diet, and their contamination with toxic metals may result in catastrophic health hazards. Heavy metals affect the human health directly and/or indirectly and one of the indirect effects is the change in plant nutritional values [1]. This paper discuss about the effect of heavy metals on growth and development of plants.

Keywords: ***Heavy metals, Plants grown, Nutritional deficiency, Population, Health hazards, Environmental issue***

INTRODUCTION:

Heavy metal is one of the serious environmental pollutions for now days as impact of industrial development in several countries. Heavy metals give toxic effects on human health and cause several serious diseases. Several techniques have been using for removing heavy metal contaminants from the environmental but these techniques have limitations such as high cost, long time, logistical problems and mechanical complexity[2].

Environmental pollution has become a serious public health concern because it becomes a major source of health risk and causes several serious diseases throughout the world [3]. One of the serious environmental pollutions is heavy metals. Although the health effects of heavy metals have been known for a long time, exposure to heavy metals continues and is even increasing in some areas. The effects of heavy metals on human health can even lead to death [4].

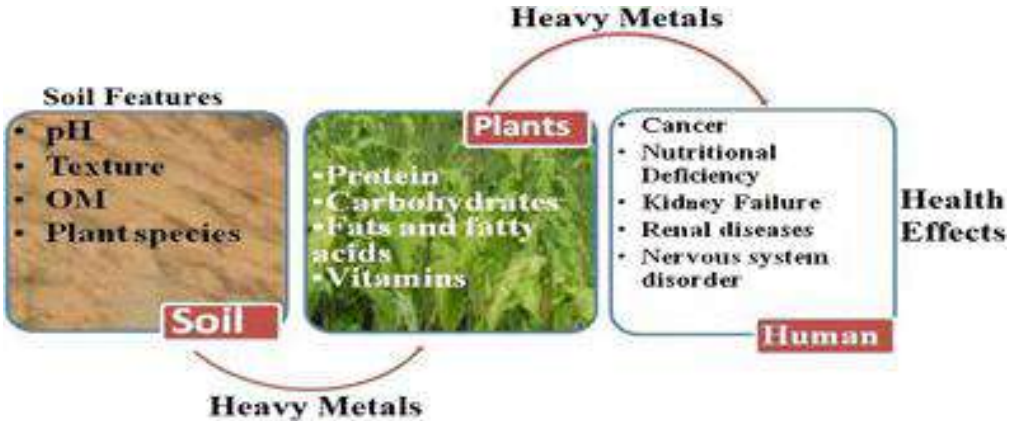


Fig.1. Heavy Metals [source: Google images]

Challenges of Climatic Changes in Conservation of Biodiversity

G. V. Ranga Reddy, *Lecturer in Botany, Dept. of Botany*
Government Degree College, Nandikotkur, Kurnool dist., Andhra Pradesh, India

ABSTRACT:

Healthy ecosystems and rich biodiversity are fundamental to life on our planet. Climate change is affecting the habitats of several species, which must either adapt or migrate to areas with more favourable conditions. Changing temperature and precipitation regimes will interact with existing drivers such as habitat loss to influence species distributions despite their protection within reserve boundaries. It is now widely recognized that climate change and biodiversity are interconnected. Biodiversity is affected by climate change, with negative consequences for human well-being, but biodiversity, through the ecosystem services it supports, also makes an important contribution to both climate-change mitigation and adaptation. Consequently, conserving and sustainably managing biodiversity is critical to addressing climate change. In the atmosphere, gases such as water vapour, carbon dioxide, ozone, and methane act like the glass roof of a greenhouse by trapping heat and warming the planet. These gases are called greenhouse gases. The natural levels of these gases are being supplemented by emissions resulting from human activities, such as the burning of fossil fuels, farming activities and land-use changes. As a result, the Earth's surface and lower atmosphere are warming, and this rise in temperature is accompanied by many other changes. This paper describes the climate change pose fundamental challenges for current approaches to biodiversity conservation.

Keywords: ***Ecosystems, Biodiversity, Planet, Climate change, Habitats, Greenhouse gases***

INTRODUCTION:

Habitat loss and fragmentation, overexploitation, pollution, the impact of invasive alien species and, increasingly, climate change all threaten global biodiversity. Global warming will affect all species and exacerbate the other environmental stresses already being experienced by ecosystems. Climate change may thus further accelerate both the ongoing impoverishment of global biodiversity, caused by unsustainable use of natural capital, and the degradation of land, freshwater, and marine systems. For example, the warming of coastal waters, coral die-off, and impacts on coastal fisheries caused by climate change are exacerbating the impacts on marine systems of overexploitation by industrial and artisanal fisheries, as well as pollution from ships' waste and land sources.

Climate change predictions are not encouraging; according to the IPCC WGI Fourth Assessment Report, a further increase in temperatures of 1.4°C to 5.8°C by 2100 is projected. Predicted impacts associated with such temperature increase include: a further rise in global mean sea level, changes in precipitation patterns, and more people at risk from dangerous "vector-borne diseases" such as malaria. The world is heating up. The increasing concentrations of greenhouse gases, such as CO_2, in the Earth's atmosphere are causing the planet's climate system to retain more energy. The average temperature of the Earth's surface increased by an estimated 0.7°C since the beginning of the 20th century and, according to the

REVIEW OF RESEARCH
ISSN: 2249-894X
IMPACT FACTOR : 5.7631(UIF)
UGC APPROVED JOURNAL NO. 48514
VOLUME - 8 | ISSUE - 9 | JUNE - 2019

COMPARATIVE STUDIES ON METABOLITE COMPOSITION OF *BOSWELLIA SERRATA* AND *BOSWELLIA OVALIFOLIOLATA*

G. V. Ranga Reddy[1] and D. Muralidhara Rao[2]
[1] Research Scholar , Department of Botany, Rayalaseema University, Kurnool, Andhra Pradesh, India.
[2] Faculty , Department of Biotechnology, Sri Krishnadevaraya University, Anantapuramu, Andhra Pradesh, India.

ABSTRACT:

Boswellia serrata Roxb. ex Colebr. and Boswellia ovalifoliolata Balakr. & Henry belongs to family Burseraceae and possesses huge medicinal properties. The later one is an endemic plant of Seshachalam hills in the southern part of India. Apart from medicinal properties, both the plants are widely used for other commercial purposes. In the present investigation, we compared the metabolite composition in both the plants to know the molecular insights particularly biochemical metabolism of the two systems. Results indicated the similarities and dissimilarities in certain metabolites in both the plants. Present work may be useful to know the biochemical composition in details for both the plants.

KEYWORDS: *Boswellia, Serrata, Ovalifoliolata, LC-MS/MS, Metabolites.*

INTRODUCTION

The man of today is no longer exists with food and shelter as his only need. He desires other commodities as well and plants raw materials that can be converted into useful products which contribute to his enjoyment of life (Rangacharyulu et al., 1991). Hence plants have an enormous role in human life and have been widely used as a source of medicine, nutraceutical, wood and various other purposes apart from food since the evolution began. Specifically, plants are extensively used as the components of phytomedicine for many years and mankind has the advantage of obtaining various chemicals from them (Dey, 1994; Pullaiah et al., 2001). Moreover, primitive people of all ages had some knowledge of medicinal plants, derived as a result of trial and error. At present all over the world, an estimate of thousands of plant species are known to have been used as drugs. Quantitative and qualitative studies with total metabolites are helpful in identifying the causal factors controlling growth and development. Natural variations of metabolites between different plants species in the same genus or family have been studied extensively (Wink, 2016). At present we performed the experiments choosing total metabolites as the target to see the difference between related species. The majority of plants used for medicines were collected from wild areas including forest regions. In the present investigation, we examined the chemical constituents and metabolites of two important medicinal plants i.e. *Boswellia serrata* and *Boswellia ovalifoliolata*.

Boswellia serrata Roxb. ex Colebr. is an important medicinal plant which is located in most of

ISSN - 2229-3620
APPROVED UGC CARE

SHODH SANCHAR BULLETIN
Vol. 9, Issue 35 July - September 2019
Page Nos. 36-38

AN INTERNATIONAL BILINGUAL PEER REVIEWED REFEREED RESEARCH JOURNAL

"घरवास" उपन्यास में प्रतिपादित समकालीन समस्याओं का सिंहावलोकन

ब्र. चर्चा*

शोध सारांश

मृदुला सिन्हा का 'घरवास' उपन्यास में लेखिका ने अपने ही बिहार प्रदेश की औद्योगिक विशेषताओं को चर्चित करते हुए, वहाँ की समकालीन समस्याओं पर प्रकाश डाला है। जैसे – पर्यावरणिक समस्याएँ, पारिवारिक समस्याएँ, ग्रामीण नारी की समस्याएँ, अशिक्षित नारी की समस्याएँ, आर्थिक असंतुलन की स्थिति से उत्पन्न समस्याएँ, तलाकशुदा, जाति को लेकर होनेवाली दुर्घ संघर्षों की समस्याएँ। मुख्यतः निरंतर बदलते ग्रामीण मूलस्थ जीवन में स्त्रियों की संघर्षमय जीवन की समस्याओं की ओर इंगितित किया गया है।

युग के विविध रूपों में – उपन्यास का महत्व अधिक है। स्वातंत्र्योत्तर उपन्यासों में समय के अनुरूप वस्तुविन्यास परिवर्तन होने लगे। उपन्यास लेखन में न केवल लेखक ही नहीं, बल्कि लेखिकाओं का भी विशेष योगदान रहा है। वर्तमान समय में महिला लेखिकाओं ने समकालीन नारी जीवन की समस्याओं को आधुनिकता के बोध से चित्रित एवं निरूपित करने का प्रयास किया है। उषा प्रियंवदा, मृणाल पांडे, दीप्ति खण्डेलवाल, क्रान्ति सोबती, और मन्नु भंडारी जैसी लेखिकाओं ने नारी जीवन से संबंधित समस्याओं का समकालीन परिवेश एवं व्यवस्थाओं की दृष्टि से जाता परखा और उनके निवारण के उपायों का यत्न किया है। आज नारी जीवन की समस्या चौतुनी बढ़ती जा रही है। यंत्रयुगीन जीवन की होड़–फेरी और संघर्ष में आज नारी का जीवन त्रस्ती और अशांत हो गया है।

'घरवास' उपन्यास के सृजनकर्ता– मृदुला सिन्हा! मृदुला जी के साहित्य सृजन का तथा उनकी राजनीतिक गति–विधियों का आरंभ लगभग साथ–साथ हुआ है। फिर भी एक साहित्यकार की अपेक्षा उनके राजनीति वाले व्यक्तित्व को ही अधिक प्रशंसा मिली है।

1956–57 से प्रारंभ हुई लेखनी की यात्रा कभी सकती, कभी थमती रही। 1977 में पहली कहानी– "कादंबिनी" पत्रिका में छपी, तब से लेखनी भी सक्रिय हो गई। विभिन्न विधाओं में लिखती रही। गाँव–गरीब की कहानियाँ है तो राजपरानों की भी, लेखनी ने सीता, सावित्री, मंदोदरी के जीवन को खँगाला है। उनमें से आधुनिक बेटियों के लिए जीवन संघात ढूँढा है तो जल–थल और नभ पर पाँव रख रही आज की ओजस्विनियों की गाथाएँ भी है। लोक संस्कारों और लोक साहित्य में स्त्री की शक्ति सामर्थ्य ढूँढती लेखनी उनमें भारतीय संस्कृति के अथाह सूत्र पाकर धन्य हुई है।

मृदुला सिन्हा का यह दूसरा उपन्यास अत्यंत लोक प्रिय रहा है। इस उपन्यास में लेखिका ने अपने ही बिहार प्रदेश की औद्योगिक विशेषताओं को चर्चित करते हुए, वहाँ की समकालीन समस्याओं पर प्रकाश डाला है। 'घरवास' निरंतर बदलते ग्रामीण मूलस्थ जीवन में कृषकों, मजदूरों और स्त्रियों की संघर्षमय जीवनशैली का एक ज्वलंत सिद्ध हुआ है।

इसी रचना में सरकारी अनुदान से बने एक कमरे के घर को मुझे दिखाती कलिया की आँखों में सब कुछ उतर आया था – उल्लास, उमंग के साथ–साथ पीड़ा से लेकर कौनूरे के निर्माण तक के संघर्ष की गाथा, राजनीतिक लाभ के आधार मुखियाओं द्वारा फेंके जाल में फँसते जाने की मजबूरी और उस अथाह मन में डूबकी लगाने पर मुझे हाथ लगा एक तिनका–उनके नवजात आत्मविश्वास का।

यह दुर्वह लेखनी क्या–क्या बखाने–विलोचना की विलक्षण शक्ति को या उजागर हो रहे दो तरफा अत्याचारों को? ढाकबाबू की डाकेजनी या अँधेरे में चुपचुपाते मानिंद घुकघुकाते ग्रामजीवन और गरीब को? या कि सफेद गिद्धों के जाल में फँसे आत्मघात के लिए विवश विजय को, या उस गाँव में गाँधीवाद की अंतिम कड़ी, धू–धू कर जलते विलट गाँजी को? गिरि– पड़ी जाती नईया को या ऊँची चौखटों में घुलती पीरघाते मकानों को? छतविहीन घरों को या चौक–चौककर खुलती पीरों को? हवा में तैरते मद को या गलियों में रेंगते सन्नाटे को? सरकारी विकास परियोजनाओं के बनें पैरते जाल में फँसा हुए मध्यमनिक ठेकेदार राजनीति को या व्यास का जाल बागमती में मिलाने को उदयत

*पी.एच.डी. शोध छात्रा, रजिस्टर नंबर पी पे डी हिन्दी 2004, उस्मानिया विश्वविद्यालय, कर्नूल –518002 आंध्रप्रदेश

Life Science Informatics Publications

Research Journal of Life Sciences, Bioinformatics, Pharmaceutical and Chemical Sciences

Journal Home page http://www.rjlbpcs.com/

RJLBPCS

ISSN 2454-6348

Original Research Article **DOI: 10.26479/2019.0505.06**

PHYTOMORPHOLOGICAL AND MEDICINAL PROPERTIES OF *BOSWELLIA OVALIFOLIOLATA* BAL. & HENRY AND *BOSWELLIA SERRATA* ROXB. ex COLEBR

G.V. Ranga Reddy[1], D. Muralidhara Rao[2*]

1. Department of Botany, Rayalaseema University, Kurnool, A.P., India.

2. Department of Biotechnology, Sri Krishnadevaraya University, Anantapuramu, Andhra Pradesh, India.

ABSTRACT: Man's reliance on plants for edible and medicinal purpose is an important topic in the past, present and future. Though advanced technology developed in medicine, majority of the world's population still depends almost exclusively on medicinal plants. But only few medicinal plants of high economic value have been cultivated under field conditions. The majority of plants used for medicines are collected from the wild. In the present investigation, we examined the morphological and medicinal properties of the both *Boswellia ovalifoliolata* Balakr. & A.N. Henry, Endemic to Seshachalam hill ranges (Tirumala, Kadapa) of Eastern ghats.as IUCN Conservation status. *Boswellia serrata* Roxb. ex Colebr. is common in lower hill slopes of Tirumala and Talakona. Both the plants belongs to Burseraceae showed resemblances as well differences with respect to morphology and medicinal properties and Rare in open areas. Coimbatore, Dharmapuri, Salem, South Arcot, Central and North-West India. **Keywords:** Phytomorphology, medicinal properties, *B. ovalifoliolata*, *B.serrata*, IUCN Conserv Status.

Article History: Received: Feb 05, 2019; Revised: April 12, 2019; Accepted: July 26, 2019.

Corresponding Author: Dr. D. Muralidhara Rao Ph.D.

Assistant Professor, Department of Biotechnology, Sri Krishnadevaraya University, Anantapuramu, Andhra Pradesh, India.

1. INTRODUCTION

The World Health Organization (WHO) estimates that about 80% of people in developing countries still rely on plant derived drugs and the main reason being their low price (Ekor, 2014). Moreover utilization of medicinal plants has getting momentum recently due to plants contain some complex

Ancient Two Temples in Kurnool, District, A.P.State.

A.Venkataswamy, Lecturer,in History,GDC,Nandikotkur.

Kurnool. District. A.P.

ABSTRACT:

1.SRI SURYANARAYANA TEMPLE(Sun God) :-

The sun god temple natively known as Sri Suryanarayana Temple is located in Nandikotkur, 28 K.M. from Kurnool (District). It is the only second temple in the State of Andhra Pradesh. The first temple is located in Arasavelli of Srikakulam district. The temple at Nandikotkur was built by Chalukya kings in 1080A.D. when they ruled Altamura. It was renovated in 1996 by Sri Mallikaaaarjuna Rao.

2.Sri Tharthur Ranganatha Swamy Temple:

Sri Ranganatha Swamy temple is located in Tharthur of Bunglow Mandal, Kurnool District, which is 40 K.M from Kurnool city. It has gained, A great importance in Andhra Pradesh state

Key words: Ancient temples in Kurnool district, Ap.

1.SRI SURYANARAYANA TEMPLE(Sun God) :-

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History of the Temple:

In 13th century the Kakatiya Emperor Prathapa Rudra Deva gifted Nandikotkur region to Sirisingadeva who was the then army chief of Kakaatiya Empire. Then this region was call Navanandikotkur and later on it took the name of Nandikotkur during this time Siriasingadeva kept his relatives and friends as guardians to the place, Atmakur, parumanchala, Lingapuram ,Byrapuram and Beeravolu Later in course of time, The Idol of Suryanarayana God(Sun God) was little damaged. During this time, the elders of the village formed a committee to restructure (or) reshape the Idol. The then Ex M.L.A. Sri Byreddy Rajasekhara Reddy garu supported them and got the Idol well structure and shaped. On the walls of the Temple, we find inscriptions and writings sculpted by Chalukya and Kakatiyas.

Proceedings of the 6th International Conference on Communication and Electronics Systems (ICCES-2021)
IEEE Xplore Part Number: CFP21AWO-ART; ISBN: 978-0-7381-1405-7

A Study on EEG Signals for Epileptic Seizure Detection using Machine Learning Classifiers

T. Jhansi Rani
Department of Computer Science& Engineering
Jawaharlal Nehru Technological University Anantapur
Anantapur, India
satyajhansii@gmail.com

D. Kavitha
Department of Computer Science& Engineering
G.Pulla Reddy Engineerng College(Autonomous)
Kurnool, India
dwaramkavithareddy@gmail.com

2021 6th International Conference on Communication and Electronics Systems (ICCES) | 978-1-6654-3587-1/21/$31.00 ©2021 IEEE | DOI: 10.1109/ICCES51350.2021.9488951

***Abstract*—The advancement in Artificial Intelligence (AI) and Machine Learning (ML) techniques helps to employ the clinical practice applications for Epilepsy seizure detection. The present research reviews advance techniques in health care and Epilepsy disease prediction to prevent further interventions. The consequences of epileptic seizures are avoided through advanced prediction of the disease and is remained to be the unsolved issue. The major problems that occurred in the existing machine learning models are likely due to an inadequate amount of data usage that obtained poor results. The advanced ML-based technologies have proven to be potentially useful for paradigm shift delivery for accurate and early prediction of epilepsy disease. The present research work provides a comprehensive review for all the state-of-the-art ML techniques applied for seizure detection at an early stage by using Electroencephalograph (EEG) signals. The present research work identifies the challenges and research gaps that occurred in existing researches, and also recommendations for future implementations.**

Keywords— Advance techniques, Artificial Intelligence, Early prediction, Electroencephalograph, Epileptic seizure, Machine Learning.

I. INTRODUCTION

Epilepsy disease is a neurological disorder that has affected individuals across all age groups people. Epilepsy disease detection arises from neurobiological processes that sustained the hyper synchronization process in the cerebral cortex part of the brain [1]. The commonly occurred brain disease is epilepsy disease; therefore, many types of research were conducted for epilepsy detection [2]. The present research uses EEG that is used as a particular diagnostic tool for epilepsy detection based on the functional anatomy of the brain. The medication and prediction of epilepsy are broadly studied using EEG and the measure of non–stationary and non-Gaussian signals gives the measure of the brain's electrical activity [3]. The EEG signals record the electrical impulses that resemble based on their peaks and way lines. These distortion lines allow the doctor to quickly analyses and assess the abnormal patterns recognizes the irregularities for detecting the seizure sign of brain disorders [4-5]. The EEG trial recognizes the electrical activity from the mental patients that are recorded in the EEG records. The neurons can communicate by traveling across or colliding with each other. The collisions of the neurons leading to a small amount of electricity generation [6]. The electric signal generated will flow and determines the person's behavior based on the EEG signals wave distortions. The normal electrical signal occurring in the brain will lead to a healthy person and that person's brain activities are used for deciding the person's behavior. The abnormal signals will pass to the unhealthy person as the electrical signal flow and therefore the signs that are recorded, analyzed solves various neurological disease disorders [7]. There are various analytical tools used for tackling the challenges that occur during data analysis and these tools will help in careful analysis of EEG signals which is very crucial for on-time and accurate detection of neurological disorders [8]. There are various ML algorithms used for addressing the problems in the existing methods, among which DL is an advanced ML technique, which can identify and learn patterns from a huge volume of collected data that processes in the hierarchical architecture [9]. There is various hand engineered techniques that have been utilized for extraction of features from the EEG signals that analyses time-frequency, nonlinear analysis, and complex models. The classifiers such as Support Vector Machine (SVM), K-Nearest Neighbour, Fuzzy systems, Extreme Learning techniques were trained based on the features for epileptic EEG signals recognition. There exist various contributions that has still some challenges for extracting the representative and discriminative features from the EEG signals for epileptic recognition. The developed model used for EEG signal recognition for epilepsy have limitations that includes more complication during the classification stages. The present survey is unique as it provides a comparative analysis of ML techniques. The prediction of ES evolves the DL and ML techniques that are relatively used for ES prediction for further researches.

The main objective of the present research is to determine the most suitable classification algorithm which will overcome the classification problems of the existing methods, as well as will accurately predict whether the person has an epileptic seizure or not. The organization of the paper is as follows: section 2 provides a brief background of neuroscience for Epilepsy seizure detection using machine learning and AI techniques. Section 3 describes the problems that occurred in the existing models during epilepsy detection. Section 4 describes the objectives for the future and section 5 provides the comparative analysis of the existing methods and the proposed method. Lastly, section 6 describes the conclusion for the research.

II. TAXONOMY FOR EPILEPSY SEIZURE DETECTION AND PREDICTION USING VARIOUS APPROACHES

A person diagnosed with epilepsy is most commonly treated with anticonvulsant medication. Remission of Seizure is the ultimate goal of imbibing anticonvulsants. Despite good drug compliance, patients still have seizures that require them to go through surgery. Thus, to detect epilepsy at an early stage, Artificial Intelligence (AI) and Machine

Indian Journal of Natural Sciences *www.tnsroindia.org.in ©IJONS*

Vol.13 / Issue 73 / August / 2022 *International Bimonthly (Print)* *ISSN: 0976 – 0997*

RESEARCH ARTICLE

Analysis of Chat bots based Artificial Intelligence (AI) Marketing

S.Mohana Murali[1]*, C.Sandhya[2], Nitesh Behare[3], Ajitharani Unnikrishnan[4] and B.Rajasekaran[5]

[1]Lecturer in Commerce Govt. Degree College Srisailam project, Nandyal Dist, Andhra Pradesh, India
[2]Assistant Professor, Department of Management Science S.A.Engineering College, Chennai,Tamil Nadu, India
[3]Associate Professor, Department of Management Studies, Balaji Institute of International Business (BIIB), Sri Balaji University, Pune, India
[4]Assistant Professor, Department of Commerce and Management Studies, Sri. C Achutha Menon Govt. College, Thrissur , Kerala, India
[5]Associate Professor, Department of Electronics and Communication Engineering Vinayaka Mission's, Kirupananda Variyar Engineering College, Vinayaka Mission's Research Foundation (Deemed to be University), Salem, Tamil nadu, India

Received: 10 June 2022 Revised: 29 June 2022 Accepted: 16 July 2022

***Address for Correspondence**
S.Mohana Murali,
Lecturer in Commerce,
Govt. Degree College Srisailam project,
Nandyal Dist, Andhra Pradesh, India

ABSTRACT

Artificial intelligence (AI) is a platform that allows marketers to develop highly tailored client experiences, improve organisation response, and solve customer problems. In this study, the chatbot is examined as an artificial intelligence tool in marketing, as well as its current application and future potential in the sector. A survey of respondents' behaviours, habits, and expectations when utilising various communication channels was undertaken, with a focus on chatbots and their benefits and drawbacks in comparison to other communication channels, with a total of 60 survey respondents. The findings revealed that the greatest benefit of employing chatbots in marketing services was when offering simple, quick information, but they also revealed respondents' worry of chat bots supplying them with incorrect information. Chatbots should be considered by businesses, particularly if they face communication issues with clients, but also if they want to keep up with the changing lifestyles of their customers.

Keywords: Artificial Intelligence, Customer, Chat bots, Pattern recognition,

IETE Journal of Research

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/tijr20

Effective Epileptic Seizure Detection Using Enhanced Salp Swarm Algorithm-based Long Short-Term Memory Network

T. Jhansi Rani & D. Kavitha

To cite this article: T. Jhansi Rani & D. Kavitha (2022): Effective Epileptic Seizure Detection Using Enhanced Salp Swarm Algorithm-based Long Short-Term Memory Network, IETE Journal of Research, DOI: 10.1080/03772063.2022.2153090

To link to this article: https://doi.org/10.1080/03772063.2022.2153090

Published online: 16 Dec 2022.

I.J. Image, Graphics and Signal Processing, **2022, 5, 72-83**
Published Online on October 8, 2022 by MECS Press (http://www.mecs-press.org/)
DOI: 10.5815/ijigsp.2022.05.06

Sliding Window Based High Utility Item-Sets Mining over Data Stream Using Extended Global Utility Item-Sets Tree

P. Amaranatha Reddy
Research scholar, Department of CSE, UCE, JNTU Kakinada
Email: amaranatha.p@gmail.com

MHM Krishna Prasad
Professor, Department of CSE, UCE, JNTU Kakinada
Email: krishnaprasad.mhm@gmail.com

Received: 12 February 2022; Revised: 16 March 2022; Accepted: 25 April 2022; Published: 08 October 2022

Abstract: High utility item-sets mining(HUIM)is a special topic in frequent item-sets mining(FIM). It gives better insights for business growth by focusing on the utility of items in a transaction. HUIM is evolving as a powerful research area due to its vast applications in many fields. Data stream processing, meanwhile, is an interesting and challenging problem since, processing very fast generating a huge amount of data with limited resources strongly demands high-performance algorithms. This paper presents an innovative idea to extract the high utility item-sets (HUIs) from the dynamic data stream by applying sliding window control. Even though certain algorithms exist to solve the same problem, they allow redundant processing or reprocessing of data. To overcome this, the proposed algorithm used a trie like structure called Extended Global Utility Item-sets tree (EGUI-tree), which is flexible to store and retrieve the mined information instead of reprocessing. An experimental study on real-world datasets proved that EGUI-tree algorithm is faster than the state-of-the-art algorithms.

Index Terms: Data mining, high utility item-sets mining, stream mining, sliding window.

1. Introduction

Data Mining techniques are useful to acquire enough knowledge to take certain decisions from the huge amounts of available data. Frequent item-sets mining (FIM) is one of the primitive data mining tasks [1, 2]. It extracts the item-sets having a frequency of occurrence more than user specified cut-off from the transactional database. Most of the basic FIM algorithms are designed to work on binary transactional databases. They assume, each item in a transaction is of one unit quantity and are equally profitable. However, in real life, each item generates different profit (also called external utility) and often their purchase quantity (also called internal utility) is not the same. For example, the quantity and profit generated by the items like rice packet and gold ring are for away from each other[3]. Hence, the same kind of perception about all the items may not produce valuable results. The Utility item-sets mining[4] came into the picture by addressing these issues. Even though utility item-sets are more useful compared with frequent item-sets, UIM is hard and intractable. The reason is FIM methods support anti-monotone property (or downward closure property) over frequency of item-sets which prune search space effectively whereas utility item-sets do not hold the property[5]. The property states that any superset of an infrequent item-set cannot be frequent[6].

Utility item-sets mining is created a space for new applications, those address the challenges in the areas of market basket analysis, web click stream analysis, wireless sensor networks, bio-medical data analysis, and stock market prediction[7,8]. It is also been combined with other mining techniques like sequential pattern mining, episode pattern mining, stream mining, top-k high utility item-sets mining, high utility item-sets mining, high utility rare pattern mining, high average utility item-sets mining[4, 9, 10, 11, 12]. This study aims to develop a high performance algorithm to retrieve high utility item-sets over data stream. It extracts item-sets having utility more than the user specified cutoff.

In a data stream, transactions come as a flow one after the other with high speed and the volume of transactions can be very large. Hence, it is no longer possible to store entire data into internal memory and process it because of limited resources. To address this, the continuously flowing data in the stream is need to cut into small chunks called batches. The set of batches used for processing is treated as a window. There are different kinds of window models available such as landmark window, sliding window and damped window [13]. The common activity in all the models

Phytology

A study of phytosociological attributes of shrubs plant resources in nallamalais

T. Shalisaheb[1*] and M. Manjula[2]

[1] Associate Professor of Botany, Govt. Degree College, Affiliated to Rayalaseema University, Kurnool, Andhra Pradesh, India

[2] Ravindra Degree College for Women, Affiliated to Rayalaseema University, Kurnool, Andhra Pradesh, India

Correspondence Author: T. Shalisaheb

Received 5 Jan 2023; Accepted 13 Feb 2023; Published 22 Feb 2023

Abstract

Biodiversity is essential for human survival and economic wellbeing and for the ecosystem function and stability.forest in India are considered as a source of livelihood for forest department people, as repository of rich biodiversity and source of timber for industries. Nallamalla, the study area of the present work is one of the 234 Centres of Plant Diversity of the World. Heavy biotic interference primarily pertaining to over-exploitation of wild plant resources is leading to alarming loss of species population in the study area.The present study is based on ramdom sampling method by quadrates in different vegetation types of Nallamalais & documents the diversity of shrubs plant resources of the forest.The total number of individuals TNI of shrubs in the study site was 606. The total abundance value for all the 37 shrubs is 210.22 which are average of 5.68.

Keywords: biodiversitty, nallamalla, diversity, shrubs, TNI

Introduction

Biodiversity is essential for human survival and economic well-being and for the ecosystem function and stability. It has attracted world attention because of the growing awareness of its importance on the one hand, and the anticipated massive depletion on the other. In this regard natural forests are critically important for maintaining biological diversity as they not only contain half of the world's total biodiversity and also have the highest species diversity and endemism of any ecosystem type (CBD, 2012) [4].

Forests can release the stored carbon as CO_2 that form nearly 17-25% of the total greenhouse gas emissions, at the same time forest conservation, afforestation, reforestation and sustainable forest management can curb about 25% of emissions. Hence, forests besides being home to more than 50% of biodiversity on land also provides an opportunity to promote actions that simultaneously protect climate, biodiversity and provide sustainable livelihoods to forest dependent people. In this context, India has become one of the strong proponents for the idea of reducing emissions from tropical deforestation and degradation.

To integrate forests in to climate change activities by reduction in forest degradation, baseline information about the forest plant diversity, forest structure, carbon sequestration potential in above ground and below ground biomass will be of most useful. Degradation of the tropical forests and destruction of habitats due to anthropogenic disturbances are a major cause of decline biodiversity at global level (Reddy and Ugle, 2008) [33]. The dry tropical, subtropical and woodlands covered more than half of the world's tropics (Janzen 1988) [16] but have decreased considerably during the last decennia. A total of 52% of the forests are tropical in world and in India, approximately 86% are tropical (Singh and Singh 1988) [40]. These forests, however, are strongly impacted by anthropogenic activities (Champion and Seth 1968; Singh *et al.,* 1991) [5]. Because of high anthropogenic pressures in the past several decades, the dry deciduous forest cover in most parts of India is being converted into dry deciduous scrub, dry savannah and dry grasslands which are progressively species poor. This situation calls for in-depth study of dry deciduous forests with respect to species diversity, structure and regeneration. Nallamalais, the study area of the present work is one of the 234 Centres of Plant Diversity of the world (Davis *et al.,* 1995) [10] and they are rich with diversified habitats supporting a wide array of plant and animal life and provides livelihood for indigenous tribal communities as well other forest dwellers. The local chenchu tribe has rich traditional botanical knowledge and is using over 450 plant species for curing different ailments. Forest dwellers collect process and market different types of Non-Timber Forest Produce, worth to mention the fruits, herbaceous medicinal plants, gums and beedi leaf. Besides, large amounts of fuel wood, fodder harvested from the forested tracts form the basic livelihood of rural populations. Despite of the ecological and economic importance of forests of Nallamalais, these ecosystems have been subjected to great stress, and continue to face multiple threats. Deforestation and forest degradation in the Nallamalais continue unabated. Even the protected areas face tremendous pressures from local communities living inside and around the forests and other 'biosphere people'. Heavy biotic interference primarily pertaining to over-exploitation of wild plant resources is leading to alarming loss of species populations in the study area. Nallamalais of Telangana state are present above the river Krishna and is home for many wild animals especially Tiger, Panther, Bear, Sambar, Wild Boar, Deer and variety of birds, reptiles and insects.

Lack of complete and consolidated information on plant resource is a major stumbling block in the whole process of conservation and utilization of plant resources of Nallamalais

ISSN: 2455-2631

March 2023 IJSDR | Volume 8 Issue 3

Effect of Fire on Plant Diversity And Germination

[1]M. Manjula, [2] T. Shalisaheb

[1]Lecturer in Botany, [2]Associate Professor of Botany
Ravindra Degree College for Women, Kurnool
Affiliated to Rayalaseema University, Kurnool

[2]Govt. Degree College, Nandikotkur.
Affiliated to Rayalaseema University, Kurnool.

Abstract- **A forest fire is a natural disaster & poses a threat not only to the forest wealth but disturbs the biodiversity & the environment of a region. Fire are a widespread phenomenon in Indian forests. In India forest areas prone to forest fires annual range from 33% in some state to over 90% in others. Fire occur during early January to June each year with the highest fire frequency in March-April with the proliferation of forest fire in the study area it is necessary to understand the effect of fire on the diversity, regeneration. The burned forest had, in general much lower tree species than the fire free forest. This is due to recurrent fire in fire impacted area over the year. In sampled plots, in the post fire season of the 31 species, 16 species are found regeneration & 15 species with poor regeneration. Burned forests are valuable and should conserved with long term monitoring programs.**

Key words: Forest fire, Diversity, Regeneration. Fire impacted area, Conservation.

INTRODUCTION

A forest fire is a natural disaster and poses a threat not only to the forest wealth but disturb the bio-diversity and the ecology and environment of a region. Forests fires are as old as the forests themselves. Natural fires have been a disturbance of several ecosystems throughout evolution thus plants have adapted to this regime. Man-made fires have also coexisted in equilibrium with ecosystems for centuries, but the continuous increment in pressure on forests and unmanaged fire use by stakeholders, has led to adverse consequences for the diversity and structure of forests.

The occurrence of fires in the tropics is regular and frequent and they have been associated with the dynamics of tropical savannas (Budowski, 1956; Clayton, 1961). There are two types of forest fire- the surface fires, spreading along the ground as the surface litter (senescent leaves and twigs and dry grasses etc.) on the forest floor and is engulfed by the spreading flames and crown fires, in which the crown of trees and shrubs burn, often sustained by a surface fire. Most fires today are thought to be human-caused and are commonly considered to be a major cause of forest degradation.

Forests play a crucial role in climate change mitigation and adaptation. The burning of vegetation gives off not only carbon dioxide but also a host of other, noxious gases such as carbon monoxide, methane, hydrocarbons, nitric oxide and nitrous oxide, that lead to global warming and ozone layer depletion.

Fires are a widespread phenomenon in Indian forests. In India, forest areas prone to forest fires annually range from 33% in some states to over 90% in others. An estimated annual economic loss of Rs.440 crores is reported on account of forest fires over the country (Bahuguna and Singh, 2002).

In India, of the 63 million ha of forests, an area of around 3.73 million ha can be presumed to be affected by fires annually (Roy, 2003) and fires occur during early January to June each year with the highest fire frequency in March-April.

There is need to carry out operational fire monitoring and its impacts on biodiversity in India in response to concerns over the loss of forests and effects of widespread burning on global atmosphere since our knowledge on its causes, their effect on forest ecosystems is extremely limited.

With the proliferation of forest fires in the study area, it is necessary to understand the effects of fire on the diversity, regeneration, forests before and after it has been disturbed by fire. The key objective of the present study is to assess and compare the diversity patterns, regeneration in burnt and un-burnt plots of the study area.

REVIEW OF LITERATURE

IMPACTS OF FOREST FIRES

Sowmya and Somashekar (2010) developed forest fire risk zone mapping using remote sensing and at Bhadra wild life sanctuary in India. They are studied 6.59% area falls in the very high fire risk, followed by 3.72% in high fire risk, 32.34% in medium fire risk, 49.55% in low, 7.72% and 0.05% in water and built up area respectively.

FOREST FIRE-GLOBAL CLIMATE

Forest fires affect the global carbon cycle, and thus the climate, in three main ways (Kasischke and Stocks, 2000). First, fire releases large quantities of carbon into the atmosphere through the combustion of plant material and surface soil organic matter.

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Radiation Physics and Chemistry 208 (2023) 110894

Contents lists available at ScienceDirect

Radiation Physics and Chemistry

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

Luminescence and photometric activity of an intense green emitting ZnBiBaBFTe:Tb^{3+} glasses

C. Sumalatha [a], Ramachari Doddoji [b,c], M. Venkateswarlu [a,*], K. Swapna [a], Sk Mahamuda [a], A.S. Rao [d]

[a] Department of Engineering Physics, Koneru Lakshmaiah Education Foundation, Vaddeswaram, 522502, Guntur (Dt.), A. P, India
[b] Institute of Research and Development, Duy Tan University, Da Nang, 550000, Viet Nam
[c] Faculty of Natural Sciences, Duy Tan University, Da Nang, 550000, Viet Nam
[d] Department of Applied Physics, Delhi Technological University, Bawana Road, New Delhi, 110042, India

ARTICLE INFO

Handling Editor: Dr. Chris Chantler

Keywords:
Tb^{3+}-doped glasses
DTA
Absorption
Photoluminescence
Decay curves
Green light emission

ABSTRACT

Borotellurite (ZnBiBaBFTe: ZnO + Bi_2O_3 + BaF_2 + B_2O_3 + TeO_2) glasses were fabricated by varying Tb_2O_3 concentration via the conventional melt and rapid quenching process. The glass stability (150 °C) and thermal stress (0.336) were evaluated using the differential thermal analysis. The rising value in the molar volume (39.69–43.86 cm^3/mol) and field strengths (6.69–19.41 × 10^{15} cm^{-2}) was due to the decrease in the density (2.932–2.804 gm/cm^3) and inter-atomic distances (5.25 - 3.08 Å) of Tb^{3+} ions in ZnBiBaBFTe glasses. Measured excitation (PLE) and de-excitation (PL) spectra indicated that Tb^{3+}:ZnBiBaBFTe glasses can be efficiently stimulated from 377 nm of UV radiation and exhibit a dazzle of green emission (543 nm) belonging to the transition $^5D_4 \rightarrow {}^7F_5$ of Tb^{3+} ion. The radiative parameters of the level $^5D_4$ of Tb^{3+} ion was predicted from the $\Omega_{2,\ 4,\ 6}$ intensity parameters by means of the JO (Judd-Ofelt) phenomenological formalism. Rise in Tb^{3+} concentration led to the enhancement of $^5D_4$ emission transitions and reduction of lifetimes (2.24–1.82 ms) via dipole-dipole interaction. The detailed analysis of glasses revealed efficient lasing action parameters corresponds to branching ratio (> 60%), emission cross-section (14.61 × 10^{-22} cm^2), gain bandwidth (15.34 × 10^{-28} cm^3), and quantum efficiency (79%) along with photometric parameters like (x, y) color coordinates (~0.29, 0.60), color purity (65%), and correlated color temperatures (~6000 K) for green lasing applications.

1. Introduction

The interest in the evolution of green-emitting materials for SSL (solid state-lighting) operating in the UV–Visible region has increased drastically in terms of energy-saving properties, effective light output, longer lifetime, and eco-friendly (Xia et al., 2015; Panse et al., 2016; Kalpana et al., 2016; Juárez-Batalla et al., 2016; Kaur et al., 2018; Swapna et al., 2014; Deopa and Rao, 2018; Yaacob et al., 2018a; dos Santos et al., 2018). Such green light-emitting materials are very beneficial in laser-projection displays for printing (bioinstrumentation, interferometers, medical scanning) and the pumping of solid-state lasers (Xia et al., 2015; Panse et al., 2016; Kalpana et al., 2016; Juárez-Batalla et al., 2016; Kaur et al., 2018; Swapna et al., 2014; Deopa and Rao, 2018; Yaacob et al., 2018a; dos Santos et al., 2018; Zang et al., 2009). In view of this, several kind of glasses (Xia et al., 2015; Panse et al., 2016; Kalpana et al., 2016; Juárez-Batalla et al., 2016; Kaur et al., 2018; Swapna et al., 2014; Deopa and Rao, 2018; Yaacob et al., 2018a; dos Santos et al., 2018; Zang et al., 2009; Halimah et al., 2018) activated with rare earths (RE^{3+}) play an indispensable role to have interesting applications in light emitting diodes (LEDs) owing to their specific benefits like low fabrication cost, simple formation of any shape, high optical transparency as well as spectral conversion. Considering the glass matrix, the glass formers such as borate (B_2O_3) and tellurite (TeO_2) have chosen in the current work and are highly stable glass network formers (B_2O_3–TeO_2) compared to the individual glass formers due to the excellent chemical durability, optical transparency, thermal and mechanical stability, and also low melting temperatures (Halimah et al., 2018; Lakshminarayana et al., 2019). Bismuth oxide (Bi_2O_3) modifier is also added to borotellurite glass to increase its density and to improve its structural and optical properties (Halimaha et al., 2019; Singh et al., 2014; Shaaban and Yousef, 2020; Gupta et al., 2017). This glass system potentially supports to improve its emission property by the further

* Corresponding author.
E-mail address: mvrmphil@gmail.com (M. Venkateswarlu).

https://doi.org/10.1016/j.radphyschem.2023.110894
Received 4 December 2022; Received in revised form 7 February 2023; Accepted 3 March 2023
Available online 4 March 2023

Structural, Electrical and Magnetic Behavior of Strontium Substituted Samarium Cobaltite Nanoparticles

K Lakshmana Gupta[a*], Dhirendra Kumar Gupta[b], Sonali Saha[c], T Kalimulla[d]

* *a Department of Physics, Government Degree College for Men, Kurnool, AP, India,*

E-mail: klg1967@gmail.com

b & c Department of Physics, IES University, Bhopal, MP, India,

d Department of Physics, Government Degree College, Nandikotkur, AP, India,

E-mail:kalimullaforu@gmail.com

Corresponding author E-mail: klg1967@gmail.com

Abstract

The uncommon earth cobaltite's, SmCoO3 perovskite nanoparticles were synthesized by EDTA–citrate complexing method. Thermal decomposition behaviour of the gel, phase formation and morphology of LSC powders were characterized by thermogravimetry/differential thermal (DSC/TG) analysis, Powder X-ray diffraction (XRD) Field emission scanning electron microscope (FESEM) and magnetic properties respectively. The data of all these characterization techniques confirmed the orthorhombic phase with particles size in the range of 20-60 nm. The structural, electrical and magnetic properties were measured for SmCoO3 nanoparticles. The purpose of all these application studies was to evaluate the prepared materials for practical applications. The substitution of Sm3+ and Co3+ respectively greatly influenced the structural, electrical and magnetic properties.

Key Words: Perovskite nanoparticles, Electrical conductivity, thermogravimetry, Magnetic Parameters, Powder X-ray diffraction and FESEM.

DOI Number: 10.14704/nq.2022.20.13.NQ88389 Neuro Quantology 2022; 20(13):3135-3142

1. Introduction

Researchers and engineers are already drawn to the developing discipline of nanoscience and nanotechnology. Metals, non-metals, polymeric materials, etc. can be used to create nanomaterials. However, due to the mixed twist provinces of Co particles, the transition metals and rare earth cobaltites constitute an intriguing class of material within the perovskites family. SmCoO3 has a unique concentration among the rare earth cobaltites due to its notable characteristics, which were discussed in the preceding sections. [1]. With their transaction of twist, charge, and cross section orderings, Sr substituted SmCoO3 perovskites are incredibly versatile materials with potential applications. Due to their numerous applications, perovskites, metal oxides with the general formula ABO3, are crucial in technology [2–6]. The stoichiometric ratio between transition metal B and unusual earth metal A can be used to alter the structure and other characteristics of perovskites [7]. The SmCoO3 is a rhombohedral perovskites that has been the subject of ongoing research for the past 50 years [8] among a variety of perovskites. Due to their high electronic and electrical conductivity, SmCoO3 perovskite-based materials have several exciting applications [9–12]. The replacement of Sm3+ in future applications of SmCoO3-based materials is of tremendous interest. [13]. We recently published a few novel perovskites for the evaluation of structural, electrical, and magnetic behaviour for cutting-edge technological applications [14]. Recently, the nanocrystalline cobaltites stand out enough to be highlighted in this article due to their new and attractive features as a component of particle size. Sm1-xSrxCoO3 (0.25x1mass)'s and nano forms have continuously been mixed

International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Thermoacoustic Parameters of Some Liquid Mixtures of O-chloroaniline with F, NMF and N, N-DMF

N. Umamaheswara Reddy[1], T. Kalimulla[1],

[1]N. Umamaheswara Reddy, Department of Physics, Government Degree, College, Banaganapalle, AP, India.

[2*]Dr T. Kalimulla Department of Physics, Government Degree College, Nandikotkur, AP, India.

Abstract

In this study, the density (ρ), speed of sound (u), and viscosity (η) of the binary liquid mixtures of an industrially important solvent O-Chloroaniline (O-CA) with Formamide (F), N-Methylformamide (NMF) and N,N-Dimethyl formamide (N,N-DMF) have been measured over the entire composition range and From these experimental values, thermo-acoustic parameters like Z, K_s, V, L_f, V_f, π_i, H and τ are calculated at temperatures from T = 303.15, 308.15 and 313.15K at atmospheric pressure. These results were compared with literature values.

Keywords: Ultrasonic velocity, Density, Viscosity, Binary liquid mixture and Acoustic parameters.

Introduction

The speed of sound (U) density (ρ) and viscosity (η) of binary or ternary liquids are indispensable in most fluid mechanics, solution theory, molecular thermodynamics, and various methodical uses.[1-5] These values carry a significant role to elucidate the behavior of liquids and their mixtures.[6, 7] The analysis of excess functions and deviations from ideality is essential to interpret the interactions in the mixing process. Therefore, the assessment and forecast of these mixtures as functions of temperature and composition are of noticeable importance. Researchers are highly devoted to discovering the real causes of possible interaction of organic molecules in binary mixtures using physical property data.[8-10] We display ρ and η values in the pure state and for their binary systems of O-Chloroaniline (O-CA) with amides, formamide (F), N-Methylformamide (NMF), and N, N-dimethyl formamide (N, N-DMF) at T = (303.15 to 318.15) K and atmospheric pressure over the entire range of composition. All liquids are used for laboratory and industrial purposes. Here, the O-Chloroaniline liquid (O-CA) has been considered as first component, while the other amides liquids F, NMF, and N,N-DMF have been considered as second component. This work is part of our program to give information/data for the characterization of molecular interactions between solvents in binary systems.[11,12] The liquids were chosen for the present study on the basis of their medical and Industrial importance. O-Chloroaniline is Intermediate for rubber chemicals, pigments, pesticides and dyes. On the other hand, Formamide is an amide derived from formic acid used as a feedstock in the manufacture of formate esters, as an ionizing solvent, as an RNA stabilizer in gel electrophoresis, and in tissue preservation. More intriguingly, it may be a key compound in the origin of life on Earth. *N*-Methylformamide (NMF) is closely related to other formamides, not ably formamide and dimethyl formamide (DMF).However, industrial use and production of NMF are far less than for either of these other formamides. DMF is favored over NMF as a solvent due to its greater stability.NMF is mainly used as a reagent in various