Research Publication 2022-23

ARTICLE NO 01

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Original Article

Biochemistry Section

Association of β-Globin Gene Haplotypes with Haematological Parameters and Foetal Haemoglobin among Patients with Sickle Cell Disorder in Raipur, Chhattisgarh, India

SANJANA BHAGAT[1], AMAR SINGH THAKUR[2]

ABSTRACT

Introduction: Sickle cell disease is caused by a single nucleotide substitution in the β-globin gene. The variations in Foetal Haemoglobin (HbF) levels, β-globin gene cluster haplotype have been used as predictors of disease severity in sickle cell disease patients.

Aim: To determine the frequency of β-globin gene haplotypes in sickle cell disease patients and also to establish their association with haematological parameters and HbF.

Materials and Methods: The present cross-sectional study was conducted in Department of Biochemistry, Government Medical College, Jagdalpur, Chhattisgarh, India, in collaboration with Department of Biotechnology, Government Nagarjuna PG College of Science, Raipur, Chhattisgarh, India, from April 2021 to May 2022. A total of 100 patients with Sickle Cell Disease (SCD) and 50 with sickle cell traits were included in the study. Haplotypes were identified by Restriction Fragment Length Analysis (RFLP) method for seven polymorphic sites in β-globin gene cluster. Haematological parameters such as Hb, Haematocrit (HCT), Mean Cell Volume (MCV), Mean Cell Haemoglobin (MCH) and HbF levels were estimated. Data was analysed using various statistical tests such as Shapiro-Wilk test, Levene's test, student t-test, Mann-Whitney test and Kruskal-Wallis tests as per analysis requirement.

Results: In the present study, 51 (51%) males and 49 (49%) females were in sickle cell disease group (SS), while 25 (50%) males and 25 (50%) females were in sickle cell trait group (AS). The mean age of the sickle cell disease patients was 23.84±8.38 years and for sickle cell trait group was 26.3±7.37 years. There was a significant difference (p-value <0.0001) in HbF levels among haplotypes. Additionally, higher HbF concentration was found in Arab-Indian haplotypes in SCD patients. No significant association was observed between the haplotypes and haematological parameters.

Conclusion: The findings suggested that haematological parameters were not significantly associated with β-globin gene haplotypes. The β-globin gene haplotypes influence the HbF levels in sickle cell patients.

Keywords: Chromatography, Disease severity, Restriction fragment length analysis, Sickle cell traits

ARTICLE NO 02

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Original Research Paper

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Open Access Journal

Isolation, Identification and Characterization of Novel Azo Dye Degrading Bacteria from the Industrial Effluents of Raipur City, Chhattisgarh

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Key Words:
Aneurinibacillus
Azo-dye degradation
Bioremediation
Dye decolorization
Methyl orange

ABSTRACT

Various chromophores are used to make our day-to-day life colorful. Dyes that are used at a large scale are made using these chromophores. The dyes, especially azo dyes are recalcitrant to the degradation due to the presence of aromatic rings in their structure. Several methods have been developed to reduce the harmful impacts of these dyes on the environment. However, none of the processes is safe and fully effective. In this study, we used bacteria as a bioremediation agent and optimized the various parameters for the bacteria to degrade the dye at its maximum ability. It was found that the isolated bacteria were *Aneurinibacillus* sp. and it completely decolorized methyl orange at a concentration of 20 $mg.L^{-1}$ after 4 days of incubation. The optimum pH for the functioning of bacteria was 5 and the activity decreased as the pH increased. It was also observed that the addition of glucose and yeast extract increased the dye degradation significantly.

Article no 03

Cover Page

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GEOMORPHIC CONTROLS ON OCCURRENCES AND CONSERVATION OF NATURAL MEDICINAL WILD FLORA IN BANKS AND ISLAND OF KHARUN RIVER, RAIPUR, C.G., INDIA

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ABSTRACT

Various kinds of wild flora including the Medicinal plant varieties naturally occurs in the riparian tract containing current flood plains, old flood plains, river banks, river levees, river terraces, sand bar islands, alluvium deposits etc. The vegetation growth, density, species types, plant morphology largely depends on soil types, geomorphic characteristics and lithology of fluvial regime. An area of 30Sq kms in a stretch of Lower Kharun Course, lies in midst of Raipur and Durg districts have been investigated for wild flora habitat. The spatial arrangement of geomorphic units and vegetation have been demarcted, using Remote Sensing Satellite Imageries Interpretation with inductive and deductive reasoning and ground truth i.e. field checks. The topographical map of S.O.I. no. 64 G/11 in scale 1:50,000 have been utilized as a base map. The study reveals that the occurrences and prolific growth of a specific medicinal plant confined to a particular geomorphic set up. It is also observed that in locality of Akola and Gomachi villages, the peoples are traditionally aware about medicinal properties and use of lemon Gras (Cymaogen Citratua) Babool (Accacia Nilotica), Arjuna (Terminala Arjuna), Euphorbeace plants etc. for treatment of skin diseases, body pain, cough etc Plants organs like leaves, bark, root and seeds are frequently used for preparing medicines. For conservation of Medicinal Plants (MPS), Some protective measures are essential through Public Awareness Programmes, NGO's Govt, Local agencies, can take care. Protection of medicinal herbs may be provided by declaring the Natural Vegetation Growth Zone as Herbal Zone or Oxyzone and Protected zone under NWPE- 2014 National Policies.

Keywords: Kharun River, Chhattisgarh, Conservation, Geomorphic Units, Sand Bar, Medicinal Plants, Flood Plains, River Bank, Protective Measures, Remote Sensing

ARTICLE NO 04

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The impact of human restrainment on backyard diversity of Lycaenidae butterfly and their host plants

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Abstract:
Butterflies are considered as bio indicator of the environment..Our native butterflies are disappearing fast due to habitat destruction for different activities in urban environment and unscientific management of natural resources, in a word their survival is under threat. Availability of host plants, food plants and pure air, are some of the requisites for their survival. The lock down has shown a very positive effect of on environment for flora and fauna. The present study reveals the direct relation of abundance of butterfly with vegetation composition and the impact of human restrainment on backyard diversity of Lycaenidaebutterfly.In 2020 during the complete lockdown and non irrigated backyard maximum 17 species under 15 genera were recorded from family Lyceinidae..But in 2021 in planed vegetation with less wild plants only 10 species were recorded. Maximum diversity was observed during the month of April.,*Euchrysopscnejus cnejus* was the most temperature tolerant species. *Chiladespandava* was the most abundant species in 2021. Species were grouped as very common, common and rare based on their relative abundance in occurrence. Out of 17species reported, 4 were listed under the Indian Wildlife (Protection) Act, 1972 WPAII.
During 2020 , 21 plant species which were frequently visited by butterflies were recorded as host plant and nectar providing plant species of Lycaenid butterflies. Most visited plants by butterflies were wild plant *Tridex procumbens* and *Parthenium hysterophorus*. During the year 2021 depletion of butterfly diversity were recorded as wild plants vareity like *Tridex , Parthenium*, species of Poaceae family were completely irradiated.The present study emphasizes the relationship between the Lycenidae butterfly, and the phenology of its host plant. Lycenidae butterflies showed sensitivity towards changes in microclimate like temperature, humidity solar radiation, rainfall and host plant diversity.
The present survey was carried out to see the effect of human intervention and environmental changes on diversity of Phytophagous Lycaenidae butterflies during the lockdown period.The objective was to critically analyze the effect of human activities on environment.
Key points: Phinology, phytophagous, Lycenidae, human restrainment

Introduction- Butterflies are considered as the sensitive biota (Pollard, 1988) because they get severely affected by environmental variations and changes in vegetation structure and availability of host plants, food plants.. Small Lycaenidae, butterflies are good indicators of

ARTICLE NO 05

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A COMPARATIVE STUDY OF AEROMYCOFLORA BASED ON SEASONAL VARIATION OF PT. SUNDAR LAL SHARMA LIBRARY, PT.RSU, RAIPUR, (C.G.), INDIA

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Abstract

A relative study of aeromycoflora in Pt. Sundar Lal Sharma Library in Pt. Ravishankar Shukla University(C.G.) was studied during 2014- 15 . In the present disquisition period it was observed that fungal population varied from season to season and month to month. Environmental factor plays an important part for the distribution of the fungal spores. The fungal population isn't homogenous throughout the time and shows seasonal variation. The present work was grounded on the collection of fungal spores from the atmospheric air from the spore trapper technique, potato dextrose agar media was used for the culture of fungal spores. The disquisition showed variation in number as well as in composition of fungal species of these areas. It was observed that maximum fungal population was observed in winter season, due to favorable temperature and relative moisture, moderate in rainy season and minimal number of fungal populations was recorded in summer season, conceivably due to inimical temperature and relative moisture for mycoflora.

Article no 06

IJFANS INTERNATIONAL JOURNAL OF FOOD AND NUTRITIONAL SCIENCES

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Research paper UGC CARE Listed (Group -I) Journal Volume 11, S Iss 3, Dec 2022

EFFECT OF AUXIN ON VEGETATIVE GROWTH OF STEM CUTTING OF SOLANUM XANTHOCARPUM SCHRAD&WENDL

Dr. Kritika Jyoti Namdeo
Assistant Professor Botany, Govt. N.P.G. College of Science, Raipur C.G.

ABSTRACT

Solanum xanthocarpum belonging to the family Solanaceae is very diffusely branched and creeping and perennial herb. The presence of thorns on stem it's also called Kantakari. The all parts of the plants are medicinally important. The cuttings of *Solanum xanthocarpun* treated with IAA and IBA in different concentrations (10, 50 and 100ppm) and their effect on plant growth have studied. IBA treated cutting showed better response on plant growth as height/length, number of leaves, size of leaves, number of nodes and internodes, number of branches, number and length of root as compared to IAA treated cuttings and control.

Key Words: Solanum Xanthocarpum, IAA (Indole Acetic Acid) IBA (Indole Butyric Acid).

Article no 07

Original Article

Effect Of Fertilizer Treatment On Primary Metabolites Of Boerhaavia Diffusa Linn

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Assistant professor, Govt. Nagarjuna PG College of Science Raipur CG
DOI: 10.47750/pnr.2023.14.02.426

Abstract

Metabolites are very important products for plants because they are directly involved in the all activity like reproduction, growth and their development and play a very significant role in their life. They produced from metabolism and catalyzed by different types of enzymes. Estimation of primary metabolites have made in cutting of B. diffusa treated with different fertilizer doses as cow dung 10 ton/ha N:P:K 60:40:20 kg/ha, cow dung 10 ton/ha N:P-K 45:30:15 kg/ha, cow dung 10 ton/ha+ N:P:K 30:20:10 kg ha, and cow dung 5 ton/ha + N:P:K 60:40:20 kg/ha, cow dung 5 ton/ha+ NPK 45.30:15 kg/ha and cow dung 5 ton/ha+ N:P:K 30:20:10 kg/ha.

Maximum amount of total sugar, was found with in treated cutting was found with root, leaf and stem respectively in cow dung 10 ton/ha + N:P:K 45:3±0:15 kg/ha. Maximum amount of total soluble protein was found with root and stem respectively of cow dung 10 tan/ha+ N:P:K 45:30:15 kg/ha but in leaf it was maximum in cow dung 10 tanha N:P:K 30:20:10 kg/ha treated cutting and the maximum amount of total soluble protein was found with root and stem respectively of cow dung 10 tan/ha+ N:P:K 45:30:15 kg/ha but in leaf it was maximum in cow dung 10 tanha N:P:K 30:20:10 kg/ha treated cutting. Maximum amount of TCA precipitated protein was leaf in cow dung 10 ton/ha N:P:K 45:30:15 kg/ha treated cutting but in stem it was maximum in cow dung 10 ton/ha NPK 60:40:20 kg/ha treated cutting as compared to control.

Article no 08

Research Paper | Environmental Science | E-ISSN No : 2454-9916 | Volume : 8 | Issue : 5 | May 2022

DETERMINATION OF PHYSICO-CHEMICAL PARAMETERS OF PARMANAND NAGAR, POND RAIPUR, (C.G) INDIA

Varsha Verma[1], S. K. Patle[2], Radha Krishnan[1], *Piyush Kumar Thakur[3]

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[2]Govt. Nagarjuna PG College of Science, Raipur (CG) India.

[3]Faculty of Science and Technology, ICFAI University, Raipur (CG) India. (*Corresponding Author)

ABSTRACT

Water is the physical foundation of all living things. It is necessary for our bodies growth and function since it is involved in a variety of biological activities. Drinking water is an essential component for all living things. Groundwater is an important natural resource that contributes to human health, economic prosperity, and biological variety. The current research focuses on determining physico-chemical characteristics in water samples from various sampling places, such as pH, EC, hardness, alkalinity, DO, BODs, and COD. An rise in pollution concentration indicates an increase in pollution load due to domestic sewage and industrial effluents, as well as anthropogenic activities and garbage discharge into the Raipur district's river. The physico-chemical properties of surface water collected from four locations along the Parmanand Nagar River in Kota, Raipur, were analyzed.

KEY WORDS : Drinking Water, Groundwater, Physicochemical Parameters.

Article no 09

ACS APPLIED BIO MATERIALS

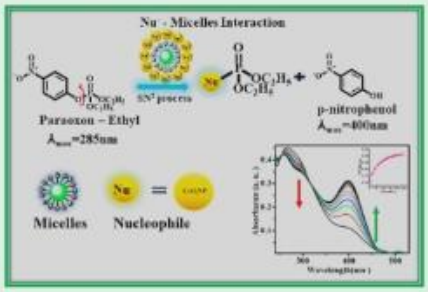
www.acsabm.org Article

β-Cyclodextrin Stabilized Nanoceria for Hydrolytic Cleavage of Paraoxon in Aqueous and Cationic Micellar Media

Pinki Miri, Indrapal Karbhal, Manmohan L. Satnami,* Vinod K. Jena, and Sanjay Ghosh*

Cite This: ACS Appl. Bio Mater. 2023, 6, 1488−1494 Read Online

ABSTRACT: Beta-cyclodextrin (β-CD) stabilized cerium oxide nanoparticles (β-CD@CeO_2 NPs) were synthesized through a hydrothermal route. The electronic properties, surface functional group, surface composition, size, and morphologies of the as-synthesized β-CD@CeO_2 NPs were characterized using UV−visible spectroscopy, FTIR analysis, high resolution X-ray photoelectron spectroscopy (HRXPS), high resolution transmission electron microscopy (HRTEM), and field emission scanning electron microscopy (FESEM). The pH-dependent variation of the ζ-potential of β-CD@CeO_2 NPs and the catalytic activity of the NPs for the hydrolysis of paraoxon were investigated. The observed pseudo-first-order rate constant (k_{obs}) for the hydrolysis of paraoxon is increased with increasing pH and the ζ-potential of β-CD@CeO_2 NPs. The kinetics and mechanism of hydrolysis of paraoxon in the aqueous and cationic micellar media have been discussed.



KEYWORDS: *organophosphorus pesticides, paraoxon, nanoceria, hydrolytic cleavage, pH-dependent reactions, cationic surfactant, micellar catalysis*

Article no 10

Research & Reviews: Journal of Agriculture and Allied Sciences

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Quality Assessment of Soil in the Vicinity of Rice Mill and Sponge Iron Industry at Central India

Preeti Verma[1*], SK Chatterjee[1], Sanjay Ghosh[2], Deepak Sinha[2]

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Research Article

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ABSTRACT

Proposed study based on the biosorptive removal of chromium (III) heavy metal in the soil using a domestic plant: Cicer arietinum. This plant was selected, based on economic value and adsorption efficiency. In the column mode adsorption method, the maximum chromium (III) adsorption capacity was found as 91.72 mg/g of dry biomass. For adsorption process optimum pH and time were pH 5.0 and 60 min respectively at 26 ± 2 °C temperatures. SEM, EDX and FTIR were used to characterize the surface property of the bioadsorbent. This study was completed by optimizing various parameters like pH, initial ion concentration, biosorbent dose, contact time and temperature. NaOH is known as the best eluting agent. The research also recognized that the concentration of chromium (III) heavy metal is found very high around sponge iron comparatively rice mill.

Article no 11

BIOSCIENCES BIOTECHNOLOGY RESEARCH ASIA, December 2022. Vol. **19**(4), p. 1045-1050

The Effect of Temperature on the Critical Micelle Concentration and Micellar Solubilization of Poorly Water Soluble Drugs

Manoj Jangde[1]*, S.K. Chatterjee[2], Monika Jain[3], Sanjay Ghosh[4], Rajendra Jangde[5] and Deepak Sinha[4]

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Non-ionic surfactants, poly oxyethylene sorbitan adipose acid esters (polysorbate), were used in this work to explore the consequence of temperature on CMC throughout a wide temperature range. The phase separation model is used to analyze the enthalpy and entropy of micelle conformation. The Du Nöuys ring was used to determine the results' face pressure. The CMC standards were derived after the strong break down in surfactant attention plots of face pressure vs. logarithms. The CMC at continuous temperature decreases as the chain length of the surfactants rises, which is completely connected to the reduction in hydrophilicity of the motes. Because of the lower possibility of hydrogen bond conformation on high temperatures, the CMC of each surfactant initially declines and then increases as the system temperature rises. As the temperature rises, the commencement of micellization tends to happen at a faster rate. The focus of this research is on the characterization of solubilization of drugs that aren't sufficiently responsive. Face pressure measurements for nonionic surfactant TritonX-100 were also taken in order to assess the solubilization features. In the presence of colourful organic detergent, the medium's opposition and the likely positions of SMX and TMP were also discussed. TritonX-100, a nonionic surfactant, was also tested. In the presence of colourful organic detergents, the medium's opposition and the likely position of SMX and TMP were also discussed.

Keywords: Ciprofloxacin; Effect of Temperature; Surfactant; Solubilization.

ARTICLE NO 12

A portable smartphone-assisted digital image fluorimetry for analysis of methiocarb pesticide i vegetables: Nitrogen-doped carbon quantum dots as a sensing probe

Authors Sanyukta Patel, Kamlesh Shrivas, Deepak Sinha, Indrapal Karbhal, Tarun Kumar Patle

Publication date 2023/10/15

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Description The increasing use of pesticides in the agriculture fields strengthen the crop production to meet the needs of increasing population. The residues in water and food materials cause several health hazards. Herein, nitrogen-doped carbon quantum dot (N-CQDs) is designed for determination of methiocarb pesticide in vegetables by fluorescent paper sensor and compared the results with fluorimetry. The fluorescent paper-based detection is performed by recording the change in fluorescence of N-CQDs with introduction of methiocarb using smartphone and ImageJ software. Good linear range was acquired for analysis of methiocarb from 10 to 1000 μgL^{-1} with a low detection limit (LOD) of 3.5 μgL^{-1} in fluorimetry; and 700–10,000 μgL^{-1} with a LOD of 500 μgL^{-1} in fluorescent paper sensor. A better recovery from 92.0 to 95.4% illustrating the selectivity of both methods for analysis of methiocarb in vegetables. Thus …

ARTICLE NO 13

BIOSCIENCES BIOTECHNOLOGY RESEARCH ASIA, December 2022. Vol. **19**(4), p. 1045-1050

The Effect of Temperature on the Critical Micelle Concentration and Micellar Solubilization of Poorly Water Soluble Drugs

Manoj Jangde[1]*, S.K. Chatterjee[2], Monika Jain[3], Sanjay Ghosh[4], Rajendra Jangde[5] and Deepak Sinha[4]

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(Received: 12 March 2022; accepted: 15 September 2022)

Non-ionic surfactants, poly oxyethylene sorbitan adipose acid esters (polysorbate), were used in this work to explore the consequence of temperature on CMC throughout a wide temperature range. The phase separation model is used to analyze the enthalpy and entropy of micelle conformation. The Du Nöuys ring was used to determine the results' face pressure. The CMC standards were derived after the strong break down in surfactant attention plots of face pressure vs. logarithms. The CMC at continuous temperature decreases as the chain length of the surfactants rises, which is completely connected to the reduction in hydrophilicity of the motes. Because of the lower possibility of hydrogen bond conformation on high temperatures, the CMC of each surfactant initially declines and then increases as the system temperature rises. As the temperature rises, the commencement of micellization tends to happen at a faster rate. The focus of this research is on the characterization of solubilization of drugs that aren't sufficiently responsive. Face pressure measurements for nonionic surfactant TritonX-100 were also taken in order to assess the solubilization features. In the presence of colourful organic detergent, the medium's opposition and the likely positions of SMX and TMP were also discussed. TritonX-100, a nonionic surfactant, was also tested. In the presence of colourful organic detergents, the medium's opposition and the likely position of SMX and TMP were also discussed.

Keywords: Ciprofloxacin; Effect of Temperature; Surfactant; Solubilization.

ARTICLE NO 14

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Occurrence of uranium, thorium and rare earth elements in the environment: A review

Khageshwar Singh Patel[1]*, Saroj Sharma[2], Jyoti Prakash Maity[3], Pablo Martín-Ramos[4], Željka Fiket[5]*, Prosun Bhattacharya[6] and Yanbei Zhu[7]*

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Uranium, thorium, and rare earth elements (REEs) are important strategic elements in today's world with a range of applications in high and green technology and power generation. The expected increase in demand for U, Th, and REEs in the coming decades also raises a number of questions about their supply risks and potential environmental impacts. This review provides an overview of the current literature on the distribution of these elements in different environmental compartments. For example, the processes of extraction, use, and disposal of U-, Th-, and REE-containing materials have been reported to result in elevated concentrations of these elements in air, in some places even exceeding permissible limits. In natural waters, the above processes resulted in concentrations as high as 69.2, 2.5, and 24.8 mg L^{-1} for U, Th, and REE, respectively, while in soils and sediments they sometimes reach 542, 75, and 56.5 g kg^{-1}, respectively. While plants generally only take up small amounts of U, Th, and REE, some are known to be hyperaccumulators, containing up to 3.5 and 13.0 g kg^{-1} of U and REE, respectively. It appears that further research is needed to fully comprehend the fate and toxicological effects of U, Th, and REEs. Moreover, more emphasis should be placed on developing alternative methods and technologies for recovery of these elements from industrial and mining wastes.

KEYWORDS

rare earth elements, environment, secondary resource, uranium, thorium

ARTICLE NO 15

ACS APPLIED BIO MATERIALS

www.acsabm.org Article

β-Cyclodextrin Stabilized Nanoceria for Hydrolytic Cleavage of Paraoxon in Aqueous and Cationic Micellar Media

Pinki Miri, Indrapal Karbhal, Manmohan L. Satnami,* Vinod K. Jena, and Sanjay Ghosh*

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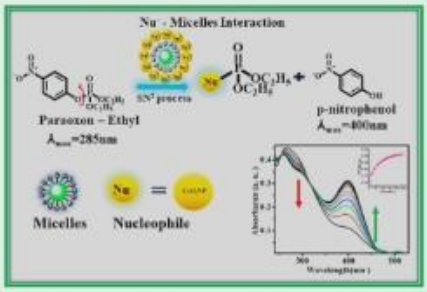
ABSTRACT: Beta-cyclodextrin (β-CD) stabilized cerium oxide nanoparticles (β-CD@CeO_2 NPs) were synthesized through a hydrothermal route. The electronic properties, surface functional group, surface composition, size, and morphologies of the as-synthesized β-CD@CeO_2 NPs were characterized using UV−visible spectroscopy, FTIR analysis, high resolution X-ray photoelectron spectroscopy (HRXPS), high resolution transmission electron microscopy (HRTEM), and field emission scanning electron microscopy (FESEM). The pH-dependent variation of the ζ-potential of β-CD@CeO_2 NPs and the catalytic activity of the NPs for the hydrolysis of paraoxon were investigated. The observed pseudo-first-order rate constant (k_{obs}) for the hydrolysis of paraoxon is increased with increasing pH and the ζ-potential of β-CD@CeO_2 NPs. The kinetics and mechanism of hydrolysis of paraoxon in the aqueous and cationic micellar media have been discussed.



KEYWORDS: *organophosphorus pesticides, paraoxon, nanoceria, hydrolytic cleavage, pH-dependent reactions, cationic surfactant, micellar catalysis*

16.

Journal of the Indian Chemical Society
Volume 99, Issue 9, September 2022, 100648

Green fabrication of silver nanoparticles via *Ipomea carnea* latex extract: Antibacterial activity

Varsha Chandrakar [a], Kavita Tapadia [a], Geetika Wag [b]

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Abstract

A versatile green and nontoxic begin method for bio-reduction of silver nanoparticles (AgNPs) using latex extract of *Ipomea carnea* was reported. Different instrumental tools were applied to evaluate the formation of AgNPs, as an example UV–Visible spectroscopy (UV–Vis), Fourier transform infra-red (FT-IR), X-ray diffraction (XRD), scanning electron microscopy (SEM) and high resolution transmission electron microscopy (HR-TEM). The absorption peak of AgNPs obtained at around 413 nm. FTIR study confirmed that the bio-capping components present in latex extract served as reducing and stabilizing agent. The findings of XRD, SEM and HR-TEM images revealed that the formation of crystalline and spherical shape nanoparticles and showed well size distribution with mean size 9.8±0.27 nm. Additionally, the green fabricated AgNPs exhibited considerable zone of

17.

Accurate Prediction of Type II Diabetes using Artificial Neutral Networks

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Volume 13, Special Issue 3, October 2022

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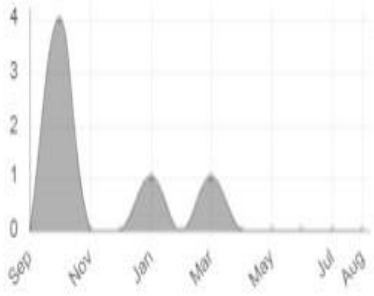

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Abstract

Diabetes is a serious and progressive condition that is rapidly increasing in incidence and currently ranks third on the list of all causes of mortality throughout the globe. A key challenge for any nation, but particularly for one that is undergoing substantial change is the high diabetes prevalence rate. Research in the field of epidemiology has demonstrated that obesity and Type II diabetes are the result of a combination of genetic predisposition and lifestyle factors such as bad eating habits and a lack of physical exercise. This article presents machine learning and feature selection enabled framework for diabetes type 2 prediction. This article uses artificial neural network for classification and prediction of diabetes type 2 data. Input data used in experiment is gathered from Pima Indian Diabetes Dataset. Results are compared on the basis of certain parameters like- accuracy, sensitivity, specificity. Accuracy of artificial neural network is better for classification and prediction of type 2 diabetes.

ARTICLE NO 18

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Vol.11, S Iss.1, 2022

 UGC CARE Listed (Group -I) Journal

Application of Artificial Neural Networks to Predict Type II Diabetes Blood Glucose Levels Accurately.

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ABSTRACT

In diabetes, the body produces insufficient or no insulin, does not properly utilize the insulin it produces, or shows a combination of both. As a result of any of these conditions, the body cannot absorb sugar from the blood into the cells, causing high blood sugar levels. Diabetic blood glucose levels are elevated either because of inadequate insulin release (type I diabetes) or because of impeded insulin action (type II diabetes). Health problems such as this can cause physical disability and even death in some cases. Diabetes has affected over 246 million people worldwide as indicated by the World Health Organization (WHO) report, and this number is predicted to ascend to more than 592 million in 2035. Unlike the western world, India has a different type of diabetes - Type I diabetes is relatively rare, while Type II diabetes affects more than 90% of the population. Forecasting and early prediction of Type II diabetes have become increasingly important due to the high incidence of the disease in recent years.

An artificial neural network (ANN) is a network of artificial neurons, similar to those found in the human brain, which is used to solve artificial intelligence problems such as image recognition, pattern recognition, classification, prediction, data compression and optimization. Diabetes has been predicted and classified using ANN techniques. The purpose of

ARTICLE NO 19

Original Article

Effect of Covid-19 and Role of AI Approaches in the Context of India

Sunita Kushwaha[1], Varsha Thakur[2], Latika Tamrkar[3]
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Email: Sunita.skushwaha@gmail.com[1], Varshathakur1308@gmail.com[2], Latika.tamrakar@gmail.com[3]
DOI: 10.47750/pnr.2022.13.S01.234

INTRODUCTION

From few decades AI almost uses in everywhere to make a decision, in problem solving concept etc. As AI stand for Artificial Intelligence a human generated intelligence of machine which is used to solve many problems either by self learning or by human interaction. AI uses to solve complex problem using intelligences by Reasoning learning, and self-correction. Machine learning and deep learning are component of AI, ML is a algorithmic approach while Deep learning use multi layer neural networks for data analysis. Deep learning is a subset of machine learning in which huge amount of data are used to learn from multilayered neural network. Machine learning is an algorithmic approach where the performance of algorithm is increased as the amount of data increased. Machine learning belongs to the artificial intelligence as a subset. Artificial intelligence is a set of command that designed to sense, act and adapt by self learning. It is learns like a human, as human learn from their experiences, in artificial intelligence machine or algorithm learn by the earlier database. As like the human learn more as he/she became more experience similarly in this area machine and algorithm become more accurate and useful as the amount of data increases. Nowadays, deep learning used as a tool in various study areas such as speech theory, computer vision, NLP, health sector and many more [1][2].

ARTICLE NO 20

Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 5, 8588-8601

Prediction Using Machine Learning Algorithms For Type 2 Diabetes Mellitus

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ABSTRACT

Diabetes is precarious health issue and huge population of India are afflict from it. Entire world is adversely affected by this problem. In the modern world, it affects the any individual regardless of Age, the factor leading to diabetes problem are fatness, living style, bad diet, high blood pressure, less physical activity, etc. People suffering from diabetes have more chance of getting stirred of various diseases like stroke, eye problem, heart disease, kidney disease, nerve damage, etc. Data analysis concepts are helpful in detection of complication of diabetes at the primary stage and prevent the patient form the bed effects of diabetics. Healthcare industries generate huge amount of data which is used for analysis. Diabetes must be prevented and cured in order to enhance the lives of all those who are impacted by it. Data analysis concepts are helpful in the detection and prevention of the complication of diabetes at the primary phase. This paper studies the diabetes data of various state of India. According to the data obtained, prevalence of diabetes in percentage is almost half in rural area as compare to urban areas; prevalence of pre-diabetes is approximately 10% to 20% less in rural area than urban areas. The experimental observation shows that the performance of random forest and SMO are surpass than logistic regression, naive base and decision tree. The accuracy of random forest is highly acceptable than others.

KEYWORDS: Logistic Regression, Decision tree, Naive Bayes, SMO.

ARTICLE NO 21

ISSN 2063-5346

ENHANCED AFFINITY AWARE LOADBALANCING ALGORITHM

Varsha Thakur [1], Sunita Kushwaha [2]

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[2]Computer Science, MATS University, Raipur,India

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Abstract

Parallel and distributed computing is in vogue as it proffers an approach to prevail over the limitations inflicted by the sequential computers. The issue is to dispense tasks in such a way that load among processors and resources should be in egalitarianism. Load balancing means providing optimal load to each processor in a multiple processor environment for which task is migrated from the over loaded processor to under loaded processor. Load balancing envisions by enhancing the design of scheduling process. This conveys the indispensability and reflects the main idea behind the work. In this work a new algorithm is designed in which affinity of task is taken into consideration. Simulation results show that most of the time newly proposed algorithm has better performance than other algorithms in terms of speedup, schedule length, efficiency, throughput, average utilization, unbalance parameter and load balance parameter.

Keywords: *Load balancing; Affinity; Multiprocessor; Schedule Length; Parallel Computing*

ARTICLE NO 22

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महाराष्ट्र–मध्यप्रदेश–छत्तीसगढ़ त्रि सीमा संगम में नक्सली गतिविधियों का विश्लेषण

(A Analysis of Naxal Movement MMC Tri Junction)

प्रो. गिरीश कांत पाण्डेय

प्राध्यापक एवं विभागाध्यक्ष, रक्षा अध्ययन विभाग

शासकीय नागार्जुन स्नातकोत्तर विज्ञान महाविद्यालय, रायपुर (छ.ग.)

भारत में राज्यों के मध्य की सीमा प्राकृतिक सीमा होती है जो प्रायः नदियों, पहाड़ों, घने जंगलों जैसे अवरोधों से युक्त होते हैं। ऐसे प्राकृतिक दुर्गम क्षेत्र नक्सली गतिविधियों के लिए अनुकुल होती है। ऐसे क्षेत्रों में प्रायः विकास, प्रशासनिक पहूंच तथा राजनीतिक सहभागिता की कमी होता है जो कि नक्सली गतिविधि को उर्वर भूमि प्रदान करता है। यदि सीमा तीन राज्यों का संगम हो तो नक्सली गतिविधियों का स्वर्ग होता है। नक्सली प्रभावित त्रि सीमा संगम राज्य है।

Abstract :-

नक्सली गतिविधि के लिए प्राकृतिक दृष्टि से निर्धारित तीन राज्यों की सीमा सबसे अनुकुल जगह होती है। एम.एम.सी. की इसी अनुकुलता के दृष्टिगत नक्सलियों ने इसे नया जोन क्षेत्र के रूप में गठित किया है। इस एम.एम.सी. जोन के कारण ही इसके निकट के सभी वन क्षेत्र, आरक्षित वन, अभ्यारण्य तथा राष्ट्रीय उद्यान पर खतरा उत्पन्न हो गया है।

प्रस्तावना :

भारत में राज्यों के मध्य की सीमा प्राकृतिक सीमा होती है जो प्रायः नदियों, पहाड़ों, घने जंगलों जैसे अवरोधों से युक्त होते हैं। ऐसे प्राकृतिक दुर्गम क्षेत्र नक्सली गतिविधियों के लिए अनुकुल होती है। ऐसे क्षेत्रों में प्रायः विकास, प्रशासनिक पहूंच तथा राजनीतिक सहभागिता की कमी होता है जो कि नक्सली गतिविधि को उर्वर भूमि प्रदान करता है। यदि सीमा तीन राज्यों का संगम हो तो नक्सली गतिविधियों का स्वर्ग होता है। नक्सली प्रभावित त्रि सीमा संगम राज्य है–

- बिहार–झारखण्ड–पं. बंगाल
- झारखण्ड–छत्तीसगढ़–ओड़िसा
- छत्तीसगढ़–ओड़िसा–आन्ध्र प्रदेश
- तेलंगाना–छत्तीसगढ़–ओड़िसा
- महाराष्ट्र–मध्य प्रदेश–छत्तीसगढ़
- कर्नाटक–तमिल नाडु–केरल

गतिविधि :

एम.एम.सी. ट्राइ जंक्शन पूर्व में नक्सलियों के दण्डकारण्य जोन का अंग रहा है। 22 अप्रैल 1980 को सीता रमैया ने नक्सली संगठन "भारत की साम्यवादी पार्टी (मार्क्सवादी–लेनिनवादी) पीपुल्स वार ग्रुप" का गठन किया था, जो पी. डब्ल्यु. जी. के नाम से जाना जाता था, ने वर्ष 1980 में ही अविभाजीत मध्य प्रदेश में प्रवेश कर लिया था। नक्सली वर्ष 1990 तक बस्तर प्रक्षेत्र, गढ़चिरौली, राजनांदगॉव व बालाघाट क्षेत्रों में क्रियाशील हो चुके थे। जमीनी स्तर पर संगठन को मजबूत करने के लिए नक्सलियों ने दण्डकारण्य जोन से एम.एम.सी. जोन गठित कर पृथक किया।

आरम्भ में एम.एम.सी. प्रक्षेत्र को मजबूत करने का कार्य पहाड़ सिंह के हाथों पर था, पर बाद में यह दायित्व दीपक तेलतुमड़े को दिया गया। कुछ समय पूर्व महाराष्ट्र में ६60 ने दीपक सहित कुल 27 नक्सलियों को मार कर एम.एम.सी. जोन में नक्सलियों को बड़ा धक्का पहुंचाया है। हांलाकि दीपक के मारे जाने से कई क्षेत्रों में नक्सलियों ने भारी उत्पात मचाया था। मध्य प्रदेश में भी तीन जगहों पर आगजनी की। दीपक के जाने से संगठन

Article 23

RNI : CHHBIL/2021/80395
ISSN: 2583-0775 (P), 2583-3189 (E)

AMOGHVARTA

DECEMBER 2022 TO FEBRUARY 2023
YEAR-02, VOLUME-02, ISSUE-03

भारतीय अंटार्कटिक कार्यक्रम का विश्लेषण

ORIGINAL ARTICLE

Author

प्रो. गिरीश कांत पाण्डेय

प्राध्यापक एवं विभागाध्यक्ष, रक्षा अध्ययन विभाग
शासकीय नागार्जुन स्नातकोत्तर विज्ञान महाविद्यालय
रायपुर, छत्तीसगढ़, भारत

शोध सार

श्वेत महाद्वीप के रूप में पहचाने जाने वाला अंटार्कटिक महाद्वीप भविष्य में बड़ी शक्तियों के मध्य रस्साकशी का क्षेत्र बनने की आशंका है। अंटार्कटिक संधि प्रणाली के वर्ष 1959 में लागू होने के पश्चात् भी कई देशों ने टेरोटेरियल क्लेम किया हुआ है। भारत वर्ष 1981 से अब तक कुल 41 अभियान दल अंटार्कटिक महाद्वीप में सफलतापूर्वक भेज चुका है। भारतीय अभियान दल पूर्णतः वैज्ञानिक अनुसंधान, अध्ययन एवं प्रशिक्षण तक सीमित रहा है। चूंकि भविष्य की सम्भावित चुनौतियों के दृष्टिगत भारत को अपने उद्देश्य में नवीन बदलाव की आवश्यक्ता है। भारत को अपने अंटार्कटिक बजट में वृद्धि तथा नवीन प्रशिक्षण एवं अनुसंधान केन्द्र की आवश्यक्ता हैं।

मुख्य शब्द

भारत, अंटार्कटिक, बजट।

विश्व का पांचवां सबसे बड़ा और निर्जन महाद्वीप अंटार्कटिक है, जो ग्रीक शब्द आर्कटिक (उत्तरी ध्रुवीय) शब्द का विपरित (एंटी) से जोड़कर एंटी + आर्कटिक अर्थात् एंटार्कटिक, दक्षिण ध्रुवीय क्षेत्र के रूप में वर्ष 1890 में स्काटिस भूगोलवेत्ता जान जार्ज बार्थोलोक्यू ने प्रस्तुत किया। अंटार्कटिक, आर्कटिक वृत्त (60'S) से घिरा हुआ है जिसे अंटार्कटिक सागर या दक्षिण सागर भी कहा जाता है। यह 1.42 करोड़ वर्ग कि.मी. क्षेत्रफल में फैला हुआ है तथा इसकी मोटाई औसतन 1.9 कि.मी. है।

वर्ष 1959 में "अंटार्कटिक संधि प्रणाली" लागू होने के पश्चात् अंटार्कटिक में सैनिक गतिविधि, खनिज भंडारो से खनिज निकालना, नाभिकीय गतिविधि चलाना तथा नाभिकीय कचरों को यहां फेंकना प्रतिबंधित है। भारत, वर्ष 1981 से अंटार्कटिक के लिए अभियान भेजना शुरू किया था, जो अब तक 41 अभियान भेज चुका है।

प्रवेश

भारत ने अंटार्कटिक में प्रवेश करने के लिए सोवियत संघ से संधि किया। भारत के अतंरिक्ष अनुसंधान संगठन और सोवियत संघ के हाइड्रोमेटोरोलॉजिकल सेंटर के मध्य हुए समझौते के आधार पर भारत के डॉ परमजीत सिंह सेहरा ने वर्ष 1971–73 में सोवियत संघ के 17वें अंटार्कटिक अभियान में शामिल होकर अंटार्कटिक पहुंचने वाले पहले भारतीय बने।

आधिकारिक रूप से भारत ने अंटार्कटिक अभियान डॉ. सैयद जहूर कासिम जो कि एक समुद्र जीव वैज्ञानिक

Article 24

RNI : CHHBIL/2018/77892
ISSN: 2582-1792 (P), 2581-6918 (E)
SHODH SAMAGAM
JANUARY TO MARCH 2023
YEAR-04,VOLUME-04, ISSUE-03

भारतीय सशस्त्र सेनाओं के आपूर्ति प्रणाली का विश्लेषण

गिरीश कांत पाण्डेय, (D.Litt.), रक्षा अध्ययन विभाग
शासकीय नागार्जुन स्नातकोत्तर विज्ञान महाविद्यालय, रायपुर, छत्तीसगढ़, भारत

ORIGINAL ARTICLE

Corresponding Author
गिरीश कांत पाण्डेय, (D.Litt.),
रक्षा अध्ययन विभाग
शासकीय नागार्जुन स्नातकोत्तर विज्ञान महाविद्यालय, रायपुर, छत्तीसगढ़, भारत
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शोध सार

भारत के सशस्त्र सेनाओं के ज्यादातर हथियार सोवियत काल के तथा रूस उत्पादित है। इन हथियारों के लगातार प्रतिस्थापन होने से भारत द्वारा नए वैश्विक व्यवस्था के आधार पर स्वदेशीकरण को बढ़ावा दिया जा रहा है। भारत ने वर्ष 2001 से इस दिशा में नवीन कदम उठाए है। वर्ष 2014 के पश्चात् मैक इन इंडिया, रक्षा अधिग्रहण प्रक्रिया, नकारात्मक सूची, स्वदेशी क्रम को बढ़ावा जैसे कदम उठाने से रक्षा उत्पाद के वैश्विक क्रय में कमी होना शुरू हुआ है। इन कदमों से निजी इकाईयों को रक्षा क्षेत्र में बढ़ावा मिल रहा है।

मुख्य शब्द

स्वदेशीकरण, रक्षा अधिग्रहण, मैक इन इंडिया, निजी इकाई.

भारत के पास लगभग 15 लाख नियमित एवं सक्रिय सशस्त्र सेना है, जो विश्व की बड़ी शक्तियों में एक है। भारतीय रक्षा की द्वितीय पंक्तियों में सम्मिलित बल की संख्या 50 लाख से अधिक है। इन भारतीय बलों की आवश्यकताओं की नियमित एवं समयबद्ध आपूर्ति सदैव चुनौतीपूर्ण रहा है। अभी हाल ही में वित्तिय वर्ष 2023–2024 के लिए प्रस्तुत प्रस्तावित बजट में राशि रू 5.94 लाख करोड़ रक्षा के लिए आबंटित है। यह राशि संयुक्त राज्य अमेरिका और चीन के पश्चात् तीसरा सबसे बड़ा वार्षिक बजट है।

भारतीय सशस्त्र सेनाओं के आपूर्ति के लिए भारत 1970 के दशक तक ब्रिट्रेन और सोवियत संघ से आयात पर ज्यादातर निर्भर रहा है। भारत–चीन युद्ध वर्ष 1962 के पश्चात् भारत ने सेनाओं

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रायपुर, छत्तीसगढ़, भारत

शोध सार

ऐतिहासिक रूप से भारत में कई पड़ोसी देशों के शरणार्थियों आए हैं। शरणार्थी राज्य के लिये एक समस्या बन जाते हैं क्योंकि इससे देश के संसाधनों पर आर्थिक बोझ बढ़ जाता है साथ ही अवधि में जनसांख्यिकीय परिवर्तन में वृद्धि कर सकता है, इसके अतिरिक्त सुरक्षा जोखिम भी उत्पन्न हो सकता है। भारत में शरणार्थियों की समस्या विभाजन के बाद शुरू हुई और इसके बाद भोजन, आश्रय, दवा, स्वच्छता जैसी बुनियादी जरूरतों से लेकर अपनी मातृभूमि को खोने की भावनात्मक उथल–पुथल तक कई मुद्दों का सामना करना पड़ा। इससे सीमाओं के दोनों ओर शरणार्थियों में वैमनस्य की भावना भी पैदा हो गई, जो अपने नुकसान के लिए दूसरे राष्ट्र के लोगों को जिम्मेदार मानते है। हालांकि शरणार्थियों की देखभाल मानवधिकार प्रतिमान का मुख्य घटक है। इसके अलावा किसी भी स्थिति में भारत में शरणार्थी प्रवास के भू–राजनीतिक, आर्थिक, जातीय और धार्मिक संदर्भों को देखते हुए इसके जल्द समाप्ति की संभावना नहीं दिख रही है।

मुख्य शब्द

शरणार्थियों, शरण एवं संरक्षण, आश्रय।

प्रस्तावना

शरणार्थी यानि शरण में उपस्थित असहाय, लाचार, निराश तथा रक्षा चाहने वाले व्यक्ति या उनके समूह को कहते हैं। इस प्रकार का व्यक्ति विशेष या उनका समूह जो किसी भी कारण वश अपना घरबार या देश छोड़कर अन्यत्र को शरणागत हो जाता है, वह शरणार्थी कहलाता है। उदाहरण के लिए सीरिया में जंग छिड़ने के कारण से वहां के लाखों नागरिक दूसरे मुल्क में शरणार्थी बनकर शरण ले रहे हैं।

दो तिहाई से ज्यादा शरणार्थी सिर्फ 5 देशों से आते हैं जिनमें सीरिया 67 लाख, अफगानिस्तान 27 लाख, दक्षिण सूडान 23 लाख, म्यांमार 11 लाख और सोमालिया 9 लाख जैसे देश शामिल है। UNHCR की एक रिपोर्ट के मुताबिक साल 2018 में सिर्फ 3 प्रतिशत शरणार्थी ही अपने देशो में वापस लौटे हैं।

भारत में शरणार्थियों के आने का इतिहास बहुत पुराना है और भारत में बसे कानूनी और गैर कानूनी शरणार्थियों की संख्या कई विकसित देशों की जनसंख्या से भी ज्यादा है। आमतौर पर अनभिज्ञतावश लोग भारत

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DEFENSIVE IDEAL VAN DURG, HINDU AJAIGARH FORT OF CHANDELA DYNASTY ON VINDHYAN HILLOCKS OF BUNDELKHAND REGION, PANNA DISTRICT, CENTRAL INDIA

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ABSTRACT

The Ajaigarh fort is a Van Durg hilltop fort in Vindhayan ranges of Bundelkhand region, Panna district, M.P. Central India. The fort is located on a forested steep hill KedarParvat raised about 240 metres high from the surrounding plains. It was occupied by Chandela kings in 9th Century AD. The fort premises big in size and it was considered strongholds of Rulers in Central India. The fort is known for its rich historical-cultural heritages and Chandela Architecture of Bundelkhand. Many legends and tales of battles, War, Valour, strength, power repleted about the rulers. The Ajaigarh is significant for being the last stayed place of Chandelas in 13th Century AD. The aim of the study is to elaborate the facts scientifically about fort, Temples, palaces, natural environment of fort site, adopting multidisciplinary approach with interpretation of Historical indigenous Hindu Architecture, heritages and efforts made by Chandella Dynasty in defends against the Non Hindu Invaders (NHI) attackers during medieval periods in Bundelkhand region, Central India. The Chandellas were rising growth and extended reign over a vast area of Central India in early medieval period. Under methodology the Satellite Remote Sensing data product imagery have been utilized for recognition of physical domains of region adopting standard interpretation keys and correlated with facts available in records, archives, literatures, and presented in form of Table and maps. The study indicates that the Ajaigarh fort was built in strategic sound site on the mounds of hillock and in the vicinity of Ken river valley. The study reveals that the Ajaigarh fort represents ideal Van Durg type fort built in Bundelkhand and its similarity with Kalinjar fort of Banda, built by the Chandela rulers. It was strong hold and prestige for Rulers until the NHI attacks in 13th Century AD. The major portion of fort precincts was destroyed by attackers. It needs conservation and protective measures to survive the Hindu Prestigious Bundelkhand heritage of Central India.

Keywords: Ajaigarh Fort, Central India, Vindhyan Hill, Chandela Kingdom, Van Durg, Hindu Temples, Defence, Bundelkhand, Remote Sensing.

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HINDU ARCHITECTURAL FEATURES, RELIGIOUS- CULTURAL HERITAGES AND MEDIEVAL SETTLEMENT, NATURAL CAVES IN VINDHYAN TRACT OF HISTORICAL STRATEGIC CHANDERI HILL FORT, CENTRAL INDIA

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ABSTRACT

The Chanderi Hill Fort of Central India was built by Hindu Pratihar King Kirti Pal in 11th Century AD. It is also known as Kirti Fort in his name. The present Chanderi Township of Ashok Nagar district, M.P. was the capital of his reign. Earlier to Vedic period, the Chanderi region was ruled by King Shishupal, mentioned in Hindu Epic Mahabharata. It had been located strategically on the border of Malwa and Bundelkhand and connected Ancient Trade Route (ATR) from Central India to sea ports of Gujarat via. Malwa, Mewar, Deccan. The aim of study is multidisciplinary to elaborate the scientific interpretation of physical domain, terrain and landscape characteristics, correlation with the Histo-Archaeological, Architectural features of Hindu Arts and Cultural Heritages of Chanderi region and its tourism prospects. Under methodology, the Satellite Remote Sensing Imagery Data (2020-2021) have been utilized for demarcation of natural features and manmade physical structures, geomorphic, geologic units, settlement etc. and correlated with existing literatures records of the region. The study indicates that the Medieval Urban Settlement layout Plan of Chanderi Township evolved Ancient Hindu Vastushastra representing Vashtu Purusha Mandla with main axis orientation in stone walled fortified Ander Shahar (Inner Township). The Architectural Characteristics reveals the artistic carvings and decoration on Facades, Palaces, Havelis, Religeous Hindu Temples, Monuments shows mature Architectural style and Cultural Heritages of Medieval Rajputana period. The monuments including Kirti Fort, Havelis, Palace Badal Mahal, Gateways Mata Jageshwari Temple, religious places, Caves, reservoir of Rajghat dam etc. are major attractions for tourist and pilgrimages. Some effective protective measures are required under caretaking of professional environmentalist, archeologist, architects, historians with the help of NGO's and public- participation of Chanderi Community. It will rise the Tourism Prospects of ancient cultural, religious heritage and Traditional Silk Trade Centre of Malwa region.

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रायपुर, छत्तीसगढ़, भारत

शोध सार

ऐतिहासिक रूप से भारत में कई पड़ोसी देशों के शरणार्थियों आए हैं। शरणार्थी राज्य के लिये एक समस्या बन जाते हैं क्योंकि इससे देश के संसाधनों पर आर्थिक बोझ बढ़ जाता है साथ ही अवधि में जनसांख्यिकीय परिवर्तन में वृद्धि कर सकता है, इसके अतिरिक्त सुरक्षा जोखिम भी उत्पन्न हो सकता है। भारत में शरणार्थियों की समस्या विभाजन के बाद शुरू हुई और इसके बाद भोजन, आश्रय, दवा, स्वच्छता जैसी बुनियादी जरूरतों से लेकर अपनी मातृभूमि को खोने की भावनात्मक उथल–पुथल तक कई मुद्दों का सामना करना पड़ा। इससे सीमाओं के दोनों ओर शरणार्थियों में वैमनस्य की भावना भी पैदा हो गई, जो अपने नुकसान के लिए दूसरे राष्ट्र के लोगों को जिम्मेदार मानते है। हालांकि शरणार्थियों की देखभाल मानवधिकार प्रतिमान का मुख्य घटक है। इसके अलावा किसी भी स्थिति में भारत में शरणार्थी प्रवास के भू–राजनीतिक, आर्थिक, जातीय और धार्मिक संदर्भों को देखते हुए इसके जल्द समाप्ति की संभावना नहीं दिख रही है।

मुख्य शब्द

शरणार्थियों, शरण एवं संरक्षण, आश्रय।

प्रस्तावना

शरणार्थी यानि शरण में उपस्थित असहाय, लाचार, निराश तथा रक्षा चाहने वाले व्यक्ति या उनके समूह को कहते हैं। इस प्रकार का व्यक्ति विशेष या उनका समूह जो किसी भी कारण वश अपना घरबार या देश छोड़कर अन्यत्र को शरणागत हो जाता है, वह शरणार्थी कहलाता है। उदाहरण के लिए सीरिया में जंग छिड़ने के कारण से वहां के लाखों नागरिक दूसरे मुल्क में शरणार्थी बनकर शरण ले रहे हैं।

दो तिहाई से ज्यादा शरणार्थी सिर्फ 5 देशों से आते हैं जिनमें सीरिया 67 लाख, अफगानिस्तान 27 लाख, दक्षिण सूडान 23 लाख, म्यांमार 11 लाख और सोमालिया 9 लाख जैसे देश शामिल है। UNHCR की एक रिपोर्ट के मुताबिक साल 2018 में सिर्फ 3 प्रतिशत शरणार्थी ही अपने देशो में वापस लौटे हैं।

भारत में शरणार्थियों के आने का इतिहास बहुत पुराना है और भारत में बसे कानूनी और गैर कानूनी शरणार्थियों की संख्या कई विकसित देशों की जनसंख्या से भी ज्यादा है। आमतौर पर अनभिज्ञतावश लोग भारत

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GRANITIC LANDSCAPE, ARCHITECTURAL FEATURES, ARCHAEOLOGICAL IMPORTANCE OF DEFENSIVE MEDIEVAL, HINDU KAKATIYA FORT OF QUEEN RANI RUDRAMA DEVI WARANGAL CITY, TELANGANA STATE, INDIA

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ABSTRACT

Warangal is a district place of Telangana State, India, earlier it was known as Oragullu City i.e. carved out of Single Rock. The Warangal fort of Kakatiya Dynasty is located towards eastern part of Warangal City. The fort is expanded over 1.3 x 1.3 km areal extent with circular frame work including Water filled moat on outer peripheries. The aim of the study is multidisciplinary, scientific elaboration and interpretation of the facts regarding natural landscape of Granitic terrain. Historical Hindu forts, monuments, Temples, structures, Architectural Design and evidences of archaeological objects correlated with cultural, religious heritages of the study area. The Kirti Toranam (Gateway) of fort has been adopted in the state Govt. of Telangana logo. Many temples in the fort premises were constructed in a unique style of Kakateya Architecture between 1240 to 1309 AD during the reign of King Ganapati Deva, Rani Rudrama Devi and King Rudra Dev II. Under methodology, the Satellite Remote Sensing data product Imagery has been utilized for the identification and interpretation of physical domain of the terrain e.g. landscape, geomorphic units, drainages, hillocks and other structures and correlated with the existing literatures regarding the history, Architecture, Archaeological objects, Archives, reports, literatures etc. The study reveals that the invaders attacks made by the Non Hindu Invaders (NHI) had demolished the fort structure and monuments many times. The most of the building structures found in ruins conditions, Pillars, Stone Slab, Statues, Lintel, Wall rock blocks, Shikhars, and other parts of Hindu Temples are scattered in the ground of the fort. The Archaeological Survey of India has planned to excavate some eastern parts of Gateways and preserve & reconstruct the scattered materials. Earlier the ASI had identified and classified historical monuments time to time and found evidences of Archaeological objects and materials of Kakatiya Dynasty. The conservation of Hindu Heritage monuments & reconstruction, renovation of temple is necessary to preserve and to restore the

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PATHETIC SENTIMENT IN THE SELECTED WORKS OF ANAND NEELAKANTAN

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Abstract
Emotion is a part of human being's life, after breathing if anything makes human alive that is emotion. One such emotion or sentiment is Pathetic that one experiences throughout his life. The Pathetic Sentiment is a sentiment of sadness, grief, and compassion. The feeling of tragedy and despair, heartbreak, sorrow caused by parting with a lover, the suffering caused by the death of a loved one are all Pathetic. It is an emotion or feeling that one feels whenever he is sad in his life. Thus, Pathetic Sentiment is one of the most important emotions for not only humans but for all the living beings' lives. Pathetic Sentiment is one of the *rasas* depicted in *Bharat Muni's* work *Natya Shastra*. It is a part of Indian Aesthetics and has universality in it, for it signifies sorrow or grief and it is an omnipresent emotion in human being's life as well as literature that one feels throughout his life. Anand Neelakantan is a renowned contemporary Indian Mythological and Historical fiction writer in English. This paper intends to study Pathetic Sentiment or the feeling of sorrow and grief depicted by the eminent contemporary author Neelakantan in his selected works such as *Asura: Tale of the Vanquished*, *Ajaya: Roll of the Dice*, and *Ajaya: Rise of Kali*.
Keywords: Aesthetics, *Rasa Theory, Yama*, *Shoka*, *Sthayibhava*, Catharsis.

Aesthetics is a philosophical term concerned with the nature of art and with judgements concerning beauty. It is and has always been an eternal part of the Indian philosophy and differs in context and approach from that of the Western. *Indian Aesthetics* has always aimed for realizing the meaning of in-depth beauty of art and self. The practice of aesthetics in India has been from ages but it was never recorded until 1st Century BC with Bharat Muni's epic work on dramaturgy the *Natya Shastra*. It intensively discourses about the expression of art through limitation, transportation, unities, manners, etiquettes, acting, dancing, music, costume, make-up, spectacle, characters, limb movements, diction, gestures, and most importantly the 'sentiments' i.e., the *Rasa*. The *Rasa Theory* is an eternal part of *Natya Shastra* and chiefly the soul of it as discussed in its chapters 6 and 7. One of the *Rasas* discussed in *Natya Shastra* is Pathetic Sentiment or *Karuna Rasa*. It is ash-colored and the deity related to it is Lord *Yama*. '*Shoka*' is its *Sthayibhava* (Durable Psychological State) and it deals with the feelings of sadness, grief, the feeling of tragedy and despair, the suffering caused by the death of a loved one are all *Karuna*. The original *Sanskrit* word *Karuna* means sadness. It can also be refered to the catharsis of Aristotle which means purgation of pain and delight.

In the novel *Asura: Tale of the Vanquished*, as the tale starts Ravana depicts his last moments of his life, his feelings towards death, and the pain he is going through at the very moment. After getting defeated by Lord *Rama*, he narrates that tomorrow is his funeral and he doesn't know that the conquered side people will give him the respectful funeral as the former King of Lanka or treat him just like a dirty dog. He further explains the painful feeling he is going through because jackals are eating his dead and injured family members and friends. Each and every part of his body is paining because big rats are tearing him apart and having feast from his body. He feels, soon his death is arriving and nothing matters now. He is badly injured and feels the pain of the last moments of his life. In this way author Neelakantan depicts *Karuna Rasa* or Pathetic Sentiment in the work *Asura: Tale of the Vanquished*.

Tomorrow is my funeral. I do not know if they will bury me like a mangy dog or whether I will get a funeral fit for an Emperor – an erstwhile Emperor. But it does not really matter. I can hear the scuffing sounds made by the jackals. They are busy eating my friends and family. Something scurried over my

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EROTIC SENTIMENT IN THE SELECTED WORKS OF ANAND NEELAKANTAN

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Abstract
Emotion is a part of human being's life, after breathing if anything makes human alive that is emotion. One such emotion or sentiment is erotic that one experiences in his life. *Shringara Rasa* or Erotic Sentiment is an emotion or feeling that one feels when he is in love. Love is a feeling that one wants to be in it all the time in his life. Especially when life is a long journey which is full of ups and downs, good and bad experiences, love is a feeling that gives joy and bliss to human beings. Thus, *Shringara Rasa* or Erotic Sentiment is one of the very important emotions for not only humans but for all the living beings' lives. Erotic Sentiment is one of the *rasas* depicted in *Bharat Muni's* work *Natya Shastra*. It is a part of Indian Aesthetics and has universality in it, for it signifies love and love is an omnipresent emotion in human being's life as well as literature that one feels throughout his life. Anand Neelakantan is a renowned contemporary Indian Mythological and Historical fiction writer in English. This paper intends to study Erotic Sentiment or the feeling of love depicted by the eminent contemporary author Anand Neelakantan in his selected works such as *Asura: Tale of the Vanquished*, *Bhoomija: Sita*, *Ravana's Sister: Meenakshi*, and *Shanta: The Story of Rama's Sister*.
Keywords: Aesthetics, *Rasa Theory, Vishnu*, *Rati*, Asura

1. Introduction

Aesthetics is a philosophical term concerned with the nature of art and with judgements concerning beauty. It is and has always been an eternal part of the Indian philosophy and differs in context and approach from that of the Western. *Indian Aesthetics* has always aimed for realizing the meaning of in-depth beauty of art and self. The practice of aesthetics in India has been from ages but it was never recorded until 1st Century BC with Bharat Muni's epic work on dramaturgy the *Natya Shastra*. It intensively discourses about the expression of art through limitation, transportation, unities, manners, etiquettes, acting, dancing, music, costume, make-up, spectacle, characters, limb movements, diction, gestures, and most importantly the 'sentiments' i.e., the *Rasa*. The *Rasa Theory* is an eternal part of *Natya Shastra* and chiefly the soul of it as discussed in its chapters 6 and 7. One of the *Rasas* discussed in *Natya Shastra* is Erotic Sentiment or *Shringara Rasa*. its color is light green and the deity related to is Lord *Vishnu*. Its *Sthayibhava* (Durable

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COMIC SENTIMENT IN THE SELECTED WORKS OF ANAND NEELAKANTAN

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Abstract

Emotion is a part of human being's life, after breathing if anything makes human alive that is emotion. One such emotion or sentiment is comic that one experiences throughout the life.*Hasya Rasa* or Comic Sentiment is an emotion or feeling that one wants to feel all his life. Happiness is a feeling that one wants to be in it all the time in his life especially when life is a long journey which is full of ups and downs, good and bad experiences, *Hasya* is a *rasa* that gives joy and bliss to human beings. Thus, *Hasya Rasa* is one of a very important emotions for not only humans but for all the living beings' lives.Comic Sentiment is one of the *rasas* depicted in *Bharat Muni's* work *Natya Shastra*. It is a part of Indian Aesthetics and has universality in it, for it signifies laughter and laughter is an omnipresent emotion in human being's life as well as literature that one feels throughout his life. Anand Neelakantan is a renowned contemporary Indian Mythological and Historical fiction writer in English. This paper intends to study Comic Sentiment depicted by the eminent contemporary author Anand Neelakantan in his selected works such as *Asura: Tale of the Vanquished*, *Ayaya: Roll of the Dice*, *Bhoomija: Sita*, and *Ravana's Sister: Meenakshi*.

Keywords

Aesthetics, *Rasa Theory*, *Pramatha*, *Hasa*, Mahabali, Chandali, Acharya.

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Furious Sentiment: Anger Induced by the Customs of Untouchability and Slavery in the Selected Works of Anand Neelakantan

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Abstract: Emotion is a part of human being's life, after breathing if anything makes human alive that is emotion. One such emotion is an emotion of anger that one faces throughout the life. Whenever anything doesn't go one's way anger arises, whenever there is any difficulty or hardship in the path of life anger arises in the form of frustration, where there is a will of existence of oneself anger arises because of the suppression of the prevailing customs and society. In other words, anger or furious sentiment is always present in a living being's life. Furious Sentiment is one of the *Rasas* depicted in *Bharat Muni's* work *Natya Shastra*. It is a part of Indian Aesthetics and has universality in it, for it signifies anger and anger is an omnipresent emotion in this world as well as literature that one faces throughout his life. Anand Neelakantan is a renowned contemporary Indian Mythological and Historical fiction writer in English. His works and style of writing inconceivably depicts the customs of untouchability and slavery as well as the caste system which prevailed in the ancient India. In this way his works contribute to the Dalit Literature of India. This paper intends to study Furious Sentiment or anger induced by the customs of untouchability, slavery, and the caste system that prevailed in ancient India depicted by the eminent contemporary author Anand Neelakantan in his selected works such as Asura: Tale of the Vanquished, Ayaya: Roll of the Dice, and The Rise of Sivagami.

Keywords: *Natya Shastra*, Aesthetics, *Rasa Theory*, *Rudra*, Half Caste.

Aesthetics is a philosophical term concerned with the nature of art and with judgements concerning beauty. It is and has always been an eternal part of the Indian philosophy and differs in context and approach from that of the Western. *Indian Aesthetics* has always aimed for realizing the meaning of in-depth beauty of art and self. The practice of aesthetics in India has been from ages but it was never recorded until 1st Century BC with Bharat Muni's epic work

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Hydro-geochemical elucidation and its implications in the Wardha valley coalfields of central India

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Abstract

The performed endeavour is to elucidate the hydro-geochemistry of the groundwater in the Wardha valley coalfield of central India. Being a coalfield of well-appreciated coal exploiting region, many studies has also disclosed the prevailing contamination issues in the same. The study is motivated to understand the groundwater chemistry and its possible implications in contamination prevalence. The measured hydro-geochemical parameters from 45 groundwater samples have manifested the rock-water interaction as a controlling mechanism with the dominance of CaMgCl facies to the extent of 67 % to 81 % in pre- and post-monsoon respectively. The hydro-geochemical facies analysis specified the ascendency of strong acid (SO_4^{2-}-Cl^--NO_3^-) over weak acids (HCO_3^-). Such domination not only lowers the pH of the groundwater but also provide an encouraging hydro-

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An Evaluation Over The Methodological Efficiency In Groundwater Contamination Studies: A Case Study From Wardha Valley Coalfields.

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Abstract
The coalfields are very usual with the groundwater contaminations and a proficient methodology is always sought by the researchers. The present article deals with the evaluation of methodology adopted in the heavy metals contamination studies in the Wardha valley coalfields, Maharashtra. On evaluating the methodology with the respective outcomes and other related works, it is suggestive to inflate the heavy metal contamination analysis by including the hydro-geochemical approach, which ultimately contributes an understanding of accountability for the contamination. The hydro-geochemical parameters not only disclose the groundwater chemistry but also illustrate the geological influence. The statistical approach like of Principal Component Analysis (PCA) augmented with an interpolation technique executed by the ArcGIS is evident to be a competent tool to approximate the source of contamination spatially. The interpolation of factor loadings generated from the PCA on the study area maps aids in sorting spatial contamination hotspots. The petrography and mineral chemistry study of the rock taken from spatially located contamination points validates the source. The cumulative effect of all such versatile methods could be apparently reflected in the designing of the mitigation policy. The study evidently supports the adopted methodology for the fruitful groundwater contamination studies but also

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DEFENSIVE IDEAL VAN DURG, HINDU AJAIGARH FORT OF CHANDELA DYNASTY ON VINDHYAN HILLOCKS OF BUNDELKHAND REGION, PANNA DISTRICT, CENTRAL INDIA

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ABSTRACT

The Ajaigarh fort is a Van Durg hilltop fort in Vindhayan ranges of Bundelkhand region, Panna district, M.P. Central India. The fort is located on a forested steep hill KedarParvat raised about 240 metres high from the surrounding plains. It was occupied by Chandela kings in 9th Century AD. The fort premises big in size and it was considered strongholds of Rulers in Central India. The fort is known for its rich historical-cultural heritages and Chandela Architecture of Bundelkhand. Many legends and tales of battles, War, Valour, strength, power repleted about the rulers. The Ajaigarh is significant for being the last stayed place of Chandelas in 13th Century AD. The aim of the study is to elaborate the facts scientifically about fort, Temples, palaces, natural environment of fort site, adopting multidisciplinary approach with interpretation of Historical indigenous Hindu Architecture, heritages and efforts made by Chandella Dynasty in defends against the Non Hindu Invaders (NHI) attackers during medieval periods in Bundelkhand region, Central India. The Chandellas were rising growth and extended reign over a vast area of Central India in early medieval period. Under methodology the Satellite Remote Sensing data product imagery have been utilized for recognition of physical domains of region adopting standard interpretation keys and correlated with facts available in records, archives, literatures, and presented in form of Table and maps. The study indicates that the Ajaigarh fort was built in strategic sound site on the mounds of hillock and in the vicinity of Ken river valley. The study reveals that the Ajaigarh fort represents ideal Van Durg type fort built in Bundelkhand and its similarity with Kalinjar fort of Banda, built by the Chandela rulers. It was strong hold and prestige for Rulers until the NHI attacks in 13th Century AD. The major portion of fort precincts was destroyed by attackers. It needs conservation and protective measures to survive the Hindu Prestigious Bundelkhand heritage of Central India.

Keywords: Ajaigarh Fort, Central India, Vindhyan Hill, Chandela Kingdom, Van Durg, Hindu Temples, Defence, Bundelkhand, Remote Sensing.

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GEOMORPHIC CONTROLS ON OCCURRENCES AND CONSERVATION OF NATURAL MEDICINAL WILD FLORA IN BANKS AND ISLAND OF KHARUN RIVER, RAIPUR, C.G., INDIA

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ABSTRACT

Various kinds of wild flora including the Medicinal plant varieties naturally occurs in the riparian tract containing current flood plains, old flood plains, river banks, river levees, river terraces, sand bar islands, alluvium deposits etc. The vegetation growth, density, species types, plant morphology largely depends on soil types, geomorphic characteristics and lithology of fluvial regime. An area of 30Sq kms in a stretch of Lower Kharun Course, lies in midst of Raipur and Durg districts have been investigated for wild flora habitat. The spatial arrangement of geomorphic units and vegetation have been demarcted, using Remote Sensing Satellite Imageries Interpretation with inductive and deductive reasoning and ground truth i.e. field checks. The topographical map of S.O.I. no. 64 G/11 in scale 1:50,000 have been utilized as a base map. The study reveals that the occurrences and prolific growth of a specific medicinal plant confined to a particular geomorphic set up. It is also observed that in locality of Akola and Gomachi villages, the peoples are traditionally aware about medicinal properties and use of lemon Gras (Cymaogen Citratua) Babool (Accacia Nilotica), Arjuna (Terminala Arjuna), Euphorbeace plants etc. for treatment of skin diseases, body pain, cough etc Plants organs like leaves, bark, root and seeds are frequently used for preparing medicines. For conservation of Medicinal Plants (MPS), Some protective measures are essential through Public Awareness Programmes, NGO's Govt, Local agencies, can take care. Protection of medicinal herbs may be provided by declaring the Natural Vegetation Growth Zone as Herbal Zone or Oxyzone and Protected zone under NWPE- 2014 National Policies.

Keywords: Kharun River, Chhattisgarh, Conservation, Geomorphic Units, Sand Bar, Medicinal Plants, Flood Plains, River Bank, Protective Measures, Remote Sensing

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GRANITIC LANDSCAPE, ARCHITECTURAL FEATURES, ARCHAEOLOGICAL IMPORTANCE OF DEFENSIVE MEDIEVAL, HINDU KAKATIYA FORT OF QUEEN RANI RUDRAMA DEVI WARANGAL CITY, TELANGANA STATE, INDIA

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ABSTRACT

Warangal is a district place of Telangana State, India, earlier it was known as Oragullu City i.e. carved out of Single Rock. The Warangal fort of Kakatiya Dynasty is located towards eastern part of Warangal City. The fort is expanded over 1.3 x 1.3 km areal extent with circular frame work including Water filled moat on outer peripheries. The aim of the study is multidisciplinary, scientific elaboration and interpretation of the facts regarding natural landscape of Granitic terrain. Historical Hindu forts, monuments, Temples, structures, Architectural Design and evidences of archaeological objects correlated with cultural, religious heritages of the study area. The Kirti Toranam (Gateway) of fort has been adopted in the state Govt. of Telangana logo. Many temples in the fort premises were constructed in a unique style of Kakateya Architecture between 1240 to 1309 AD during the reign of King Ganapati Deva, Rani Rudrama Devi and King Rudra Dev II. Under methodology, the Satellite Remote Sensing data product Imagery has been utilized for the identification and interpretation of physical domain of the terrain e.g. landscape, geomorphic units, drainages, hillocks and other structures and correlated with the existing literatures regarding the history, Architecture, Archaeological objects, Archives, reports, literatures etc. The study reveals that the invaders attacks made by the Non Hindu Invaders (NHI) had demolished the fort structure and monuments many times. The most of the building structures found in ruins conditions, Pillars, Stone Slab, Statues, Lintel, Wall rock blocks, Shikhars, and other parts of Hindu Temples are scattered in the ground of the fort. The Archaeological Survey of India has planned to excavate some eastern parts of Gateways and preserve & reconstruct the scattered materials. Earlier the ASI had identified and classified historical monuments time to time and found evidences of Archaeological objects and materials of Kakatiya Dynasty. The conservation of Hindu Heritage monuments & reconstruction, renovation of temple is necessary to preserve and to restore the

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Energy-Efficient Hybrid Routing Protocol to Extend the Network Lifetime in IoT Applications

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Abstract - A Wireless Sensor Network (WSN) is made up of several inexpensive, low-power, compact sensor nodes that are densely placed across the monitoring area. Wireless connection creates a multi-hop wireless network system. WSN is particularly well suited for deployment in harsh environments and remote monitoring locations that are not suitable for personnel. It has significant advantages like a large coverage area and broad application prospects in the fields of military, environmental monitoring, industrial control, and urban transportation. IoT-enabled networks, however, suffer a variety of difficulties because of the enormous heterogeneous data generated by many sensing devices, including long communication delays, limited throughput, and short network lifetimes. In this study, a hybrid cluster-based routing protocol model is suggested that makes use of the advantages of both butterfly and particle swarm optimization methods. The suggested approach splits the network into many clusters and chooses the best node as the cluster leader to exacerbate the network's premature demise. The typical cluster-based routing protocols PSO and BOA are assessed using simulation results in terms of the quantity of alive nodes, throughput, and remaining energy of the nodes.

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1. INTRODUCTION

In wireless sensor networks, the energy is consumed when the communication is between nodes to nodes and between nodes and base stations, so efficient routing protocols have a crucial impact on the performance of the entire network. Clustering routing protocols,

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A Study on the Implications of NLARP to Optimize Double Q-Learning for Energy Enhancement Cognitive Radio Networks with IoT Scenario

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Description	The study on the topic has an intention of increasing energy life increases with the possible logics like optimized double Q-learning, application of intellectual cognitive radio network system and the entrenched Internet of Things on the Network Lifetime Aware Routing Protocol (NLARP). A system has been developed using such an algorithm, the study has covered the problem of overestimation in the Q-learning, and the solution by double Q-learning has been recorded. Spectrum and energy conservation or enhancement was another logic where the battery usage of 50% has been studied and found that the energy has been saved or better utilized. The study concludes that the chosen technology has reflected very positively in all aspects.
Scholar articles	A Study on the Implications of NLARP to Optimize Double Q-Learning for Energy Enhancement in Cognitive Radio Networks with IoT Scenario

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Gulab Das, B.P.Tripathi, Swati Verma, and B.K.Sharma, Management of the Oil and Gas Industry Using the Chameleon Hash Algorithm for Blockchain Technology

Management of the Oil and Gas Industry Using the Chameleon Hash Algorithm for Blockchain Technology

Gulab Das[1]*, B.P.Tripathi[2], Swati Verma[3], and B.K.Sharma[4]

Abstract

The approach for monitoring and safeguarding petroleum product distribution records in a decentralized ledger database is proposed in this research paper using blockchain technology. Using this method aims to secure distributed ledger transactions in a database and safeguard data from manipulation, fraud, and corruption by chain participants. The blockchain technology solution offers both innovative benefits and an effective security measure, such as the management of the distribution ledger and existence of transactions between the depot, transporter, and retailing filling station. Transparency, fraud protection, resistance to manipulation, and keeping record order are further benefits. The telematics approach used for this secure distributed ledger database is an embedded system integrated into an in-vehicle model for remote tracking of geolocation (using the Global Positioning System (GPS)), monitoring, and far-off data acquisition in a real-time. The technique used for this secure distributed ledger database is Chameleon hash algorithm based public permission blockchain and telematics. The identification (ID) of the tanker operator, Depot name, Source station ID, Destination station ID, Petroleum product volume, Transporter ID, and Geographic car location are the types of information included in the secure distributed ledger database (using blockchain) that was constructed. This method has shown to be effective, secure, and simple to manage because it forbids any individual from tampering with the data while supporting agreement of around 75% of chain members to make modifications.

Key words: Blockchain; Chameleon Signature; Chameleon Hashing; Petroleum Product; Security; Telematics.

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1 Introduction

The national economy and its development have relied heavily in recent decades on oil and gas (petroleum products) as major sources of income, vitality, and industry [1]. In the Organization of the Petroleum Exporting Countries (OPEC) 11, Nigeria is acknowledged as one of the top exporters of petroleum products [2]. However, this product's distribution in Nigeria has historically been quite difficult and has often led to fluctuations in the economy of the nation. These difficulties include a lack of fuel, theft of oil and gas, price inflation, and numerous others.

Due to the numerous issues with its distribution, the supply interruption of this combustible resource in Nigeria has become a recurring issue. In addition to other occupations in the marketing supply chain, Aminu et al. suggested that petroleum products (oil and gas) are typically a crucial source of energy on a global scale and play a significant role in the economies of the majority of developed countries, including the USA, UAE, and other countries [3]. The transaction's susceptibility to corruption, fraud, and a lack of transparency among the parties engaged in the supply chain and distribution process was one of the factors contributing to this product's scarcity in the country [4].

The technology that underpins bitcoin, known as blockchain, has progressed innovative servic es that can have an impact on financial transact

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42

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Mathematical Analysis of g^*p – Super Continuity and g^*p -Supercompactness

Dr. S. S. Dubey[1], A. K. Adil[2] and Dr. Animesh Kumar Sharma[3]

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Abstract:

In earlier 2002, Veerakumar introduced and studied the concept ofg^*p-closed sets and g^*p -continuity. Later, In 2011, Patil , Rayanagoudar and Bhat defined g^*p - compactness. In this paper we have defined g^*p- supercontinuity and g^*p-supercompactness which are more generalized concept of g^*p-continuity and g^*p-compactness. We have also examined the topological and hereditary properties of g^*p-supercompactness .The concept is also examined for their product spaces.

Keywords: Supercontinuity, Supercompactness, topological space, open cover, closed cover.

1.Introduction :

In 2002 Veerakumar [5] introduced the concept of g^*p -closed sets. In the sequel Patil ,Rayanagoudar and Bhat [4] introduced and studied the new class of functions called g^*p-continuous and almost contra g^*p -continuous functions in topological spaces and defined the notion of g^*p-compactness. In this paper we have defined g^*p-supercontinuity and g^*p -supercompact spaces.The paper has been divided into four sections. In section 2, some necessary preliminaries are given. In section 3 we define g^*p - supercontinuity and study some of its properties. In section 4 we have defined and studied g^*p -supercompact spaces.

2.Preliminaries :

The following definitions and results are necessary in the sequel:

Definition 2.1. A family S of subsets of a space X is called linked if every pair of elements of Shas a nonempty intersection.

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Overview of Advancement of Inventory Models for Deteriorating Items with Time Based Uniform Price

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Abstract: *A Inventory control describes the items, products, or stocks kept indefinitely to meet the anticipated demand. In reality, however, the shelf's life span is impossible due to deteriorated items. The quality of the items (like fruits, vegetables) improves each day, and after a specific time, customers aren't inclined to purchase the items to consume. The decrease in the standard of the product is referred to as deterioration. Different researchers such as Gregory P.[1] Fred Raafat[2], S. K. Goyal[3] & B. C. Giri, N. Khanlarzade[4] et.al, L. Janssen, T. Claus & J. Sauer[5], J. Kaushik[6] with A. Sharma have been involved in inventory modeling, using an alternative method of calculating demands, functions as well as assumptions. Deterioration is a frequent cause of loss for retailers, and we present an exhaustive review of constant order and time-dependent requests in inventory models for deteriorating items. We focused on models for inventory with various demand patterns, such as ramp type, linear trapezoidal, etc., in our current research. A comprehensive list of references is included to assist readers in exploring the subject of their interest.*

Mathematics Subject Classification(MSC2022): *90B05*
Key Word: *inventory model; deteriorating item; price; stock; price-dependent demand;*

I.INTRODUCTION

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Estimation of Menstrual Cycle Period (Days) From Phoenetic Features

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Abstract

In this paper we discuss a new non- invasive, user friendly approach to estimate the menstrual cycle period (days) using phonetic features of users voice. The wavelet transform has been used for analyzing phoneme properties.
AMS Classification: 00A06, 00A71, 42C40, 92B05, 92C50
Keywords: Female harmonal cycle, phonetic study, mathematical model, wavelet transform.

1. INTRODUCTION

In this paper we are going to discuss an approach to estimate the total days of menstrual cycle of females from the analysis of phonetic features with the utterance of International Phonetic Alphabets (IPA table). The previous studies have shown that the physiological state of females change with their hormonal changes especially during their menstrual period, in the both fertile and non- fertile phases. In 2017 Grazyna [4] highlighted the change in voice parameters during different phases of menstrual cycle.

Global Journal of Pure and Applied Mathematics.
ISSN 0973-1768 Volume 18, Number 2 (2022), pp. 575-581

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Convergence of Wavelet Expansion at Generalized Continuous Points

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and

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Govt. K.H. College Abhanpur, Raipur (C.G.)

Abstract

The purpose of this paper is to discuss convergence of wavelet expansion at generalized continuous points. Our result generalizes the result of Zhao [11]. As an application our result generalizes the results about convergence of wavelet expansion of a function at a continuous point.
Mathematics Subject Classification 2020: 40A15, 40A30, 43A50
Keywords and Phrases: convergence and divergence , wavelet expansions, generalized continuous points.

Transactions of A. Razmadze
Mathematical Institute
Vol. **177** (2023), issue 1, 77–83

A NOTE ON THE CONVERGENCE OF WAVELET FOURIER SERIES

VARSHA KARANJGAOKAR[1], NAMRATA SHRIVASTAV[2] AND VISHNU NARAYAN MISHRA[3*]

Abstract. In this paper, we discuss the rate of convergence of Wavelet Fourier series of periodic functions. Our result generalizes the results of M. Skopina [13] [Localisation Principle for wavelet expansion, self seminar system, Proceedings of the International Workshop, Dubna, (1999), 125-133] and V. Karanjgaokar [5] *et al.* [On the rate of Convergence of Wavelet Fourier Series, *Jñānābha*, 51(1) (2021), 12-18], by introducing a general monotonically decreasing function $P_n(x)$, satisfying certain conditions.

1. Introduction

The concept of wavelet has been viewed as a synthesis of various ideas originated from different disciplines including mathematics (see Loknath and Debnath [9]). It was observed that the computational efficiency of wavelet expansions is related to their multiresolution form and other well-studied properties. Wavelets are local in time and frequency, and a wavelet basis for $L^2(\mathbb{R})$ consist of translations and dilations of one or more functions (see M. A. Kon [7]) and then wavelet becomes a very important tool for signal analysis. Wavelet Fourier Series is a special type of wavelet expansion which is a Fourier Series with wavelet bases. In this paper, we discuss the convergence of wavelet Fourier Series.

The main aim of discovery of wavelets is to study the time-frequency signal analysis. Wavelets have been introduced by A. Grossmann and J. Morlet [2], as functions whose translations and dilations could be used for expansions in $L^2(\mathbb{R})$. The prototype of wavelets can be found in the works of A. Haar [3]. S. Mallat [10] and Y. Meyer, both independently developed the framework of multiresolution analysis to generate orthonormal bases for $L^2(\mathbb{R})$. P. G. Lamarie and Y. Meyer [8] constructed wavelets in $S(\mathbb{R}^n)$, the space of rapidly decreasing smooth functions.

In this paper, we are going to study the rate of convergence of Wavelet Fourier Series of periodic functions, i.e., we analyse the convergence rate of Periodic Multiresolution Analysis (PMRA) of functions $f \in L_p(\mathbb{R})$, $(1 \leq p \leq \infty)$. We generalize the results of M. Skopina [12] and V. Karanjgaokar *et al.* [5] by introducing a general monotonically decreasing function of x and n, satisfying certain specific conditions. For this purpose, first let us have a look on the following definitions.

1.1. **Periodic multiresolution analysis (PMRA).** The concept of PMRA has been defined and used in Deng Feng and Si Long [1], Prestin and Selig [11] and Skopina [12]. Let $\phi \in L^2(\mathbb{R})$ and $\psi \in L^2(\mathbb{R})$ be respectively a scaling function of MRA and a wavelet function given by

$$\hat{\phi}(x) = m_0\Big(\frac{x}{2}\Big)\hat{\phi}\Big(\frac{x}{2}\Big)$$

and

$$\hat{\psi}(x) = m_0\Big(\frac{x+1}{2}\Big)\hat{\phi}\Big(\frac{x}{2}\Big)e^{i\pi x},$$

where $m_0 \in L^2(\mathbb{T})$ is a low pass filter. The normalized integer shifts and scales of ψ given by

$$\psi_{j,n}(x) = 2^{\frac{j}{2}}\psi(2^j x + n), \quad j, n \in \mathbb{Z}$$

2020 *Mathematics Subject Classification.* 42C40, 40A05, 41A25.

Key words and phrases. Wavelet Fourier series; Convergence and divergence of series and sequences; Periodic multi resolution analysis; Rate of convergence of wavelet series.

*Corresponding author.

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Impact of Female Menstrual Cycle on Voice Production with Special Reference to Wavelet Transform

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Abstract

The main objective of this review is to discuss the impact of female hormonal changes on voice production throughout the whole life cycle of female starting from the puberty continued in reproductive year and then declined at menopause. For this purpose we analyse the voice signals by using the very effective and robust method of wavelet analysis called wavelet transform.

Keywords and Phrases: female hormones and hormonal fluctuation, voice production, female life cycle, voice and wavelet transform.

Mathematical science citation: 92-10, 92 C50, 43A32.

1 INTRODUCTION

The previous studies investigated that the fluctuation of hormones around female life cycle affects their psychology, physiology and behavior [15, 12]. Thus, female voice production might also be affected during menstruation just as it is during the follicular and luteal phase [1, 8]. Previous studies have shown that hormonal changes in females across the menstrual cycle period affects vocal production and the documentations in this field indicated the most changes in premenstrual or ovulation period. That showed the impact of menstruation on vocal fold functioning and voice production. Recent studies shows that there is a perceptual difference between voice recordings in different phases of the menstrual cycle. The human voice analysis has been a very important area of study for it's multiple application in Engineering and Medical

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Original Research Paper

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Open Access Journal

Isolation, Identification and Characterization of Novel Azo Dye Degrading Bacteria from the Industrial Effluents of Raipur City, Chhattisgarh

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Key Words:
Aneurinibacillus
Azo-dye degradation
Bioremediation
Dye decolorization
Methyl orange

ABSTRACT

Various chromophores are used to make our day-to-day life colorful. Dyes that are used at a large scale are made using these chromophores. The dyes, especially azo dyes are recalcitrant to the degradation due to the presence of aromatic rings in their structure. Several methods have been developed to reduce the harmful impacts of these dyes on the environment. However, none of the processes is safe and fully effective. In this study, we used bacteria as a bioremediation agent and optimized the various parameters for the bacteria to degrade the dye at its maximum ability. It was found that the isolated bacteria were *Aneurinibacillus* sp. and it completely decolorized methyl orange at a concentration of 20 $mg.L^{-1}$ after 4 days of incubation. The optimum pH for the functioning of bacteria was 5 and the activity decreased as the pH increased. It was also observed that the addition of glucose and yeast extract increased the dye degradation significantly.

ELSEVIER

Optical Materials

Volume 130, August 2022, 112575

Synthesis and characterization of ambient-processed FTO/ZnO/$CsPbBr_2Cl$/C perovskite solar cell deposited by SILAR method

Asha Chauhan [a], A.K. Shrivastav [a], Anjali Oudhia [b]

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https://doi.org/10.1016/j.optmat.2022.112575

Abstract

In the present study, for the very first time, an HTL-free perovskite solar cell (PSC) FTO/ZnO/$CsPbBr_2Cl$/C was fabricated via successive ionic layer adsorption and reaction methods (SILAR) under an ambient atmosphere. Each layer of synthesized PSC was characterized by various sophisticated techniques like UV–Visible spectroscopy (UV–Vis), Photoluminescence spectroscopy (PL), X-ray diffraction (XRD), Scanning electron microscopy (SEM), Energy dispersive X-Ray spectroscopy (EDX), and Field emission electron microscopy (FESEM). We explored the optical, morphological, and electrical

50.

Article | Publisher preview available

Analysis of eco-friendly tin-halide Cs2SnI6-based perovskite solar cell with all-inorganic charge selective layers

January 2022 · Journal of Materials Science: Materi... 33(37) · Follow journal
DOI: 10.1007/s10854-022-07723-x

Asha Chauhan · Anjali Oudhia · Ashok Kumar Shrivastav

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Abstract and figures

In this research work, eco-friendly and tin-halide Cs2SnI6-based perovskite coupled with the various all-inorganic charge collective layers like ZnO, TiO2, CdS, GO; CuI, Cu2O, and MoO3, via one-dimensional solar cell capacitance simulator (SCAPS 1D). Among the various proposed electron and hole transport layers (ETLs and HTLs), Cs2SnI6, GO, and Cu2O are the most adequate materials for the efficient and stable perovskite solar cells (PSCs). In the present study, we have proposed a novel architecture FTO/GO/Cs2SnI6/Cu2O/Au with outstanding device performances. Also, we have analyzed and validated the impact of various factors like thickness of absorber, ETL, and HTL layer; defect density, and working temperature on the performances of the solar cells. The novel configuration possessed excellent photovoltaic outputs with a power conversion efficiency of 25.12%. The other obtained performances for the proposed novel configuration were 27.15 mA/cm², 1.3 V, and 68.78% for the short-circuit current (Jsc), open-circuit voltage (Voc), and fill factor (FF). The effect of series resistance is also reported in this theoretical work. The proposed material is in very good agreement with the existing experimental work and is apt for future lead-free and tin-halide-based PSCs.

51.

Journal of Crystal Growth

Journal of Crystal Growth
Volume 591, 1 August 2022, 126718

The impact of excessive ethanol on synthesis and characterization of Zinc oxide nanoparticles

Asha Chauhan [a], A.K. Shrivastav [a], Anjali Oudhia [b]

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https://doi.org/10.1016/j.jcrysgro.2022.126718

Abstract

Zinc oxide (ZnO) nanostructures are one of the most prominent areas of research in the present scenario. In this work, we have synthesized ZnO nanoparticles (NPs) using a simple sol–gel method with varying amounts of ethanol, changes in the amount of ethanol led to some promising changes in the quality of ZnO. With an increase in the amount of ethanol the size of ZnO, gets reduced since ethanol. UV–Visible (UV–Vis) spectroscopy and photoluminescence (PL) analysis confirmed the existence and behavior of ZnO nanostructure. Photoluminescence emission spectra suggested that the ethanol

Ab Initio Investigation on Interaction of Zig-Zag Graphene Nanoribbon and ZnO Buckyball

Show affiliations

Sharma, Sakshi ; Shrivastav, A. K. ; Oudhia, Anjali ; Verma, Mohan L.

The first-principle Density Functional Theory (DFT) approach was used for the optimization of nanostructured ZnO Buckyball (ZnO-B) and Zig-Zag Graphene nanoribbon (Z-Graphene). Different investigations were carried out to study its structural, electronic, and optical properties, for better understanding. Initially, ZnO-B and Z-Graphene structures were investigated separately, and finally, the interaction between the two of them was observed. The acquired Bandgap of ZnO-B and Z-Graphene structure was around 1.5 eV and 0.7 eV, respectively. The detailed study included the observation of structures, bond length, and the density of states, the partial density of states, absorbance, refractive index, and reflectance. This DFT study produced good comparative results with solid-state physics, showing improved electronic and optical properties. The outcomes may be useful for various applications in the field of optoelectronic devices.

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Bibcode:	2022JIEIE.103..149S
Keywords:	ZnO; Graphene; Density functional theory; Buckyball; Density of states; Partial density of states

53.

Journal of Molecular Graphics and Modelling
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Computational simulation-based study of novel ZnO Buckyball structures

Sakshi Sharma [a], Anjali Oudhia [b], A.K. Shrivastav [a], Mohan L. Verma [c]

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https://doi.org/10.1016/j.jmgm.2022.108241 Get rights and content

Abstract

A novel Zinc Oxide Buckyball (ZnO-b) system has been optimized using the first principle density functional theory (DFT). The study of the structural, electronic, and optical properties of both the pristine and Al, Ga, and Ag-doped ZnO-b and ZnO-h (ZnO hexagonal) systems have been reported here. A comparative study of the variations which occurred due to changes in the crystal structure, dopant element as well as doping site was done for both systems. The study includes the structural analysis followed by the electronic analysis with the study of Density of States (DOS), Partial Density of States (PDOS), and at last the Optical analysis of the systems. The bandgap engineering due to structural variations in ZnO is observed here as metal-doped ZnO-h structures showed a

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Boosting the Power Conversion efficiency of $CsPb_{0.75}Sn_{0.25}IBr_2$ Alloy-based Perovskite Solar Cell with Charge Transport Layer $Mg:SnO_2$: A Theoretical Study

Asha Chauhan[1*], A K Shrivastav[2], Anjali Oudhia[3]

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Abstract: ***The perovskite-based photovoltaic cells are the best way to convert photon radiation into electrical energy. The fundamental focus of this work is to stimulate and boost the power conversion efficiency (PCE) of an alloy-based $CsPb_{0.75}Sn_{0.25}IBr_2$ perovskite solar cell. The simulation was run on SCAPS-1D cell simulator software (ver. 3.3.09). In this current work, a perovskite $CsPb_{0.75}Sn_{0.25}IBr_2$ with the suitable composition of ions coupled with Tin-based electron transport layers (ETLs)-SnO_2 and $Mg:SnO_2$. The thickness and defect density of absorber layer-$CsPb_{0.75}Sn_{0.25}IBr_2$ has been optimized. The impact of the thickness variation of ETL-SnO_2 and $Mg:SnO_2$ on device performances was also studied. The effect of working temperature, rate of charge carrier generation, and recombination on photovoltaic outputs like open-circuit voltage (Voc), short-circuit current (Jsc), fill factor (FF), and PCE has been studied and analyzed. The simulated cell achieved an efficiency of 13.82% under optimum conditions. The optimized efficiency was comparatively higher than the experimental efficiency of 11.85%. This study demonstrates the role of optimization of various properties of different layers of solar cells.***

Keywords: SCAPS-1D; $Mg:SnO_2$; Perovskite; $CsPb_{0.75}Sn_{0.25}IBr_2$.

55.

Original Paper | Published: 02 May 2022

Synthesis and characterization of ambient-processed all-inorganic perovskite $CsPbBr_2Cl$ micro-crystals and rods

Asha Chauhan ✉, A. K. Shrivastav & Anjali Oudhia

Chemical Papers **76**, 5023–5032 (2022) | Cite this article

Abstract

Highly crystalline, all-inorganic $CsPbBr_2Cl$ perovskite micro-crystals and rods were prepared by the inexpensive solution-based processing method. The optical, morphological, and thermal properties of the prepared $CsPbBr_2Cl$ micro-crystals and micro-rods have been characterized by various sophisticated techniques like UV–visible spectroscopy (UV–Vis), photoluminescence (PL), X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), scanning electron microscopy (SEM), energy dispersive X-ray analysis (EDX)

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The impact of human restrainment on backyard diversity of Lycaenidae butterfly and their host plants 90

Dr. Kavita Das[1]*, Dr. Suneeta Patra[2], Dr. Renu Maheshwari[3] 90

A STUDY OF FACTORS AFFECTING EMPLOYEE TURNOVER AND ITS INFLUENCE ON ORGANIZATIONAL EFFICIENCY IN IT SECTOR 107

Blood Groups and Behaviour

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ABSTRACT:

Early in the twentieth century, a most important discovery was made in blood transfusion when Karl Landsteiner showed that by cross-testing one blood sample with another, some samples would mix successfully with no visual signs of reaction while others would react strongly, causing agglutination, which is a massive clumping of the red cells.