Web of Science™

JNU Publications for the month of February 2025

Record 1 of 28

Title: Displacement and the Reframing of Reproductive Autonomy: A Case of Rohingya Women in India

Author(s): Jana, M (Jana, Madhusree)

Source: JOURNAL OF ASIAN AND AFRICAN STUDIES **DOI:** 10.1177/00219096251318254 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 18

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 64

Abstract: Women's narratives are often absent or distorted in theorisations of displacement, reflecting an 'androcentric' international human rights framework. This paper examines the transformation of gender roles and reproductive rights among Rohingya women in Indian refugee camps. Based on qualitative research in the National Capital Region of Delhi and Haryana districts, I argue that displacement operates as both a barrier and a catalyst, reconfiguring public-private boundaries and enabling subtle negotiations of power. Women's life histories reveal strategies of mobility and agency within oppressive structures. By integrating discussions on marriage, family planning and childbearing, the paper challenges reductive refugee stereotypes and advocates centring reproductive rights in policymaking.

Accession Number: WOS:001423731400001

Language: English

Document Type: Article; Early Access

Author Keywords: Reproductive rights; displacement; Rohingya; reproductive health

KeyWords Plus: REFUGEE CAMPS; VIOLENCE; GENDER; HUMANITARIANISM; NARRATIVES; ACCESS

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Publisher: SAGE PUBLICATIONS INC

Publisher Address: 2455 TELLER RD, THOUSAND OAKS, CA 91320 USA

Web of Science Index: Social Science Citation Index (SSCI)

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Research Areas: Area Studies

IDS Number: X2L5V

ISSN: 0021-9096

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29-char Source Abbrev.: J ASIAN AFR STUD

ISO Source Abbrev.: J. Asian Afr. Stud.

Source Item Page Count: 16

Output Date: 2025-03-04

Record 2 of 28

Title: New Trends in Emerging Power-Great Power Conflicts

Author(s): Ganeshpandian, P (Ganeshpandian, Porkkodi); Freddy, HJ (Freddy, Haans J.); Bijukumar, V (Bijukumar, V.)

Source: CANADIAN JOURNAL OF POLITICAL SCIENCE-REVUE CANADIENNE DE SCIENCE POLITIQUE **DOI:** 10.1017/S0008423924000490 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 4

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 5

Accession Number: WOS:001413971800001

Language: English

Document Type: Book Review; Early Access

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Publisher: CAMBRIDGE UNIV PRESS

Publisher Address: EDINBURGH BLDG, SHAFTESBURY RD, CB2 8RU CAMBRIDGE, ENGLAND

Web of Science Index: Social Science Citation Index (SSCI)

Web of Science Categories: Political Science

Research Areas: Government & Law

IDS Number: U8B1V

ISSN: 0008-4239

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29-char Source Abbrev.: CAN J POLIT SCI

ISO Source Abbrev.: Can. J. Polit. Sci.-Rev. Can. Sci. Polit.

Source Item Page Count: 2

Output Date: 2025-03-04

Record 3 of 28

Title: Synthesis of Phosphinylated Naphthalene Diimides and Radical Anions: A SeT-Mediated Route Circumvents the Use of Metal/Photocatalyst

Author(s): Tamim, R (Tamim, Rustam); Saini, P (Saini, Poonam); Kumar, MSK (Kumar, M. S. Krishna); Kumar, Y (Kumar, Yogendra); Mukhopadhyay, P (Mukhopadhyay, Pritam)

Source: JOURNAL OF ORGANIC CHEMISTRY **DOI:** 10.1021/acs.joc.4c02501 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 13

Abstract: Phosphinylation of pi-scaffolds is of huge current interest; however, the ensuing C-P(O) bond formation necessitates catalyst, light, heat, etc. We report that electron-deficient halogenated naphthalene diimide (NDI) scaffolds can enable catalyst-free, room-temperature phosphinylation via a possible single-eT-mediated reaction. The arylphosphinylated NDIs show multielectron acceptor property, and LUMO of -4.24 eV, rendering the Ph2PO group equally potent as the electron-withdrawing C N group. Thus, in situ reduction can be propelled leading to radical anions and dianions.

Accession Number: WOS:001420629700001

PubMed ID: 39945295

Language: English

Document Type: Article; Early Access

KeyWords Plus: ROOM-TEMPERATURE; ELECTRON-TRANSFER; PERI-ARYLENES; P-ARYLATION; PERYLENE; SUBSTITUTION; DIPHENYLPHOSPHINE; ACTIVATION; STABILITY; HALIDES

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Publisher: AMER CHEMICAL SOC

Publisher Address: 1155 16TH ST, NW, WASHINGTON, DC 20036 USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Chemistry, Organic

Research Areas: Chemistry

IDS Number: W7W5C

ISSN: 0022-3263

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Science and Engineering Research Board	CRG/2021/008494
Indian Council for Culture Relation (ICCR)	
DST-FIST grant	

P.M. acknowledges CRG/2021/008494 for financial support and the Indian Council for Culture Relation (ICCR) for research fellowship to R.T. Instrumentation facilities were supported by DST-FIST grant. P.M. thanks AIRF, JNU, for all of the instrumentation facilities.

Output Date: 2025-03-04

Record 4 of 28

Title: Illuminating Nonluminescent DNA Copper Nanoclusters via Protein Encapsulation: The Role of Protein Characteristics

Author(s): Negi, P (Negi, Pooja); Munde, M (Munde, Manoj)

Source: LANGMUIR **DOI:** 10.1021/acs.langmuir.4c04178 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 10

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 44

Abstract: DNA-based luminescent copper nanoclusters (DNACuNCs) have had promising applications in biosensing and bioimaging. However, a significant number of DNA sequences still form undesirable nonluminescent DNACuNCs called "dark" clusters. The scarcity of efficient and accurate approaches for turning such "dark" clusters into luminescent ones hampers their application. To overcome this problem, we have shown how protamine, a basic protein, can be used as an encapsulating agent to convert nonluminescent DNACuNCs into luminescent ones. In this method, protamine encapsulation resulted in a 2500% enhancement of the emission intensity of "dark" DNACuNCs. The results were compared with those of lysozyme and human serum albumin (HSA) as the other encapsulating agents with diverse features; however, they were found to be not as effective as protamine in illuminating the "dark" clusters. Protamine, due to its highly cationic nature and flexible conformation compared to those of lysozyme and HSA, can adjust according to the charge distribution on the surface of NCs, leading to an effective interaction supported by the binding study. It prompts the assembly of NCs into stable and well-defined three-dimensional structures with extremely small sizes of similar to 1.7 nm that support the discrete electronic transitions, resulting in an exceptionally strong fluorescence emission intensity. In addition, these NCs sustained better stability over a wider pH range, making them ideal for biological applications. The approach for achieving high emission efficiency proposed here can be extended to other nonluminescent DNA-based NCs.

Accession Number: WOS:001418214600001

PubMed ID: 39930565

Language: English

Document Type: Article; Early Access

KeyWords Plus: DSDNA-TEMPLATED FORMATION; FLUORESCENCE; CLUSTERS; NANOPARTICLES; MICROSCOPY; LEAD

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Publisher: AMER CHEMICAL SOC

Publisher Address: 1155 16TH ST, NW, WASHINGTON, DC 20036 USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Chemistry, Multidisciplinary; Chemistry, Physical; Materials Science, Multidisciplinary

Research Areas: Chemistry; Materials Science

IDS Number: W4H8B

ISSN: 0743-7463

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UPEII JNU	
DST Purse	
CSIR	

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Output Date: 2025-03-04

Record 5 of 28

Title: Order parameter symmetry in superconducting 2H-TaSeS

Author(s): Yadav, K (Yadav, K.); Lamba, M (Lamba, M.); Singh, M (Singh, M.); Yadav, M (Yadav, M.); Kumar, A (Kumar, A.); Patnaik, S (Patnaik, S.)

Source: JOURNAL OF PHYSICS-CONDENSED MATTER **Volume:** 37 **Issue:** 7 **Article Number:** 075602 **DOI:** 10.1088/1361-648X/ad9656 **Published Date:** 2025 FEB 17

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 7

Usage Count (Since 2013): 7

Cited Reference Count: 60

Abstract: Superconductors based on transition metal dichalcogenides are of substantial current relevance towards the material realization of topological superconductivity. Here, we report a detailed study on the synthesis and characterization of single crystals of 2H-TaSeS. A superconducting transition is confirmed at 4.15K that coexists with a charge-density wave ordering at 66K. The temperature dependence of the RF penetration depth indicates s-wave characteristics in the weak-coupling limit. Moderate electronic anisotropy is observed in the upper critical fields. DFT calculations confirm that the most stable structure belongs to the P63mc space group. Negative values in the phonon dispersion curves verify the possibility of coexisting superconductivity with a charge-density wave in 2H-TaSeS. We also study vortex dynamics in this novel superconductor. Overall, our analysis suggests that 2H-TaSeS is a conventional Type-II superconductor without any evidence for topological superconductivity.

Accession Number: WOS:001371257000001

PubMed ID: 39577099

Language: English

Document Type: Article

Author Keywords: topological superconductivity; charge density wave; flux pinning; penetration depth

KeyWords Plus: UPPER-CRITICAL-FIELD; DIFFRACTION PATTERNS; DISORDER; RESISTIVITY; DEPENDENCE; ANISOTROPY; PHASE; WAVE

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Publisher: IOP Publishing Ltd

Publisher Address: TEMPLE CIRCUS, TEMPLE WAY, BRISTOL BS1 6BE, ENGLAND

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Research Areas: Physics

IDS Number: O5A6U

ISSN: 0953-8984

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29-char Source Abbrev.: J PHYS-CONDENS MAT

ISO Source Abbrev.: J. Phys.-Condes. Matter

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Council for Scientific and Industrial Research (CSIR)	

University Grant Commission (UGC)	
Department of Science and Technology, Government of India	DST/NM/TUE/QM-10/2019(G)/6
Nano-mission project	

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Output Date: 2025-03-04

Record 6 of 28

Title: Theoretical investigation of quantum oscillations of specific heat in Kondo insulators

Author(s): Pushkar, A (Pushkar, Arnav); Kumar, B (Kumar, Brijesh)

Source: PHYSICAL REVIEW B **Volume:** 111 **Issue:** 7 **Article Number:** 075112 **DOI:** 10.1103/PhysRevB.111.075112 **Published Date:** 2025 FEB 5

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 24

Abstract: The electronic specific heat of Kondo insulators in a magnetic field is studied for the half-filled Kondo lattice model on a simple cubic lattice using low-temperature theory in Kumar representation. The calculated specific heat is found to show quantum oscillations, which appear soon after the inversion transition and become prominent with decreasing Kondo coupling. Interestingly, it is noted that the field derivative of specific heat closely resembles the magnetic quantum oscillations, and exhibits more pronounced oscillations at finite temperatures than the magnetization itself. An empirical Lifshitz-Kosevich fit with two frequencies given by the theory describes these quantum oscillations reasonably well, where the frequencies correspond to the extremal areas on the surface of the charge gap, a remnant of the Fermi surface in the insulating case.

Accession Number: WOS:001423187800001

Language: English

Document Type: Article

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Publisher: AMER PHYSICAL SOC

Publisher Address: ONE PHYSICS ELLIPSE, COLLEGE PK, MD 20740-3844 USA

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Web of Science Categories: Materials Science, Multidisciplinary; Physics, Applied; Physics, Condensed Matter
Research Areas: Materials Science; Physics
IDS Number: X1Q7T
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ISO Source Abbrev.: Phys. Rev. B
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DST-FIST	

We acknowledge the DST-FIST funded HPC cluster at the School of Physical Sciences, JNU for computations.

Open Access: Green Submitted
Output Date: 2025-03-04

Record 7 of 28

Title: Hydration characteristics of blood-compatible poly(2-methoxyethyl acrylate) (PMEA) polymer chains at infinite dilution

Author(s): Yadav, HOS (Yadav, Hari O. S.); Chauhan, R (Chauhan, Ritika); Kuo, AT (Kuo, An-Tsung)

Source: MOLECULAR SIMULATION **DOI:** 10.1080/08927022.2025.2467216 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 20
Times Cited in Web of Science Core Collection: 0
Total Times Cited: 0
Usage Count (Last 180 days): 0
Usage Count (Since 2013): 0
Cited Reference Count: 62

Abstract: PMEA polymer is an excellent non-thrombogenic polymer. Its non-thrombogenicity has been found due to the hydration water of the polymer. When the PMEA polymer comes in contact with water, it forms a complex interface consisting of nanoscale water-rich and polymer-rich domains. To understand the hydration behaviour of PMEA polymer in both domains, molecular dynamics simulations are employed to investigate the hydration characteristics of PMEA chains of different lengths at infinite dilution, as well as bulk polymer with experimental equilibrium water content, which are considered relevant to water-rich and polymer-rich domains, respectively. Investigations show that short PMEA chains behave like ideal polymer chains at infinite dilution, despite having a comb-like structure. The probability of water molecules around different oxygens in PMEA chains decreases with increasing chain length, reflecting a reduction in the hydrophilicity of the oxygen sites. Furthermore, the lifetime of hydrogen bonds between water and oxygen sites at infinite dilution is around 1-20 ps. By contrast, lifetimes of hydrogen bonds in the bulk polymer are the order of several hundred ps for alkoxy and methoxy oxygens and ns for carbonyl oxygen. The findings will aid in experimentation and the design of blood-compatible polymers.

Accession Number: WOS:001427432600001
Language: English

Document Type: Article; Early Access

Author Keywords: PMEA polymer; hydration; hydrogen bonds; molecular dynamics simulation

KeyWords Plus: PARTICLE MESH EWALD; MOLECULAR-DYNAMICS; POLY(OMEGA-METHOXYALKYL ACRYLATE)S; WATER-MOLECULES; SIMULATION; GROMACS; CHARMM; PEG

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Publisher Address: 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND

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Research Areas: Chemistry; Physics

IDS Number: X7X6A

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Output Date: 2025-03-04

Record 8 of 28

Title: A Multi-Omics Meta-Analysis of Rhizosphere Microbiome Reveals Growth-Promoting Marker Bacteria at Different Stages of Legume Development

Author(s): Sahil, R (Sahil, Rishav); Pal, V (Pal, Vivek); Kharat, AS (Kharat, Arun S.); Jain, M (Jain, Mukesh)

Source: PLANT CELL AND ENVIRONMENT **DOI:** 10.1111/pce.15429 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 14

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 3

Usage Count (Since 2013): 3

Cited Reference Count: 95

Abstract: Plant-microbe interactions have been studied extensively in legumes, but the influence of host developmental stages on its microbiome remains poorly understood. The rhizospheric region enriched with microbial diversity presents an optimal environment to investigate this relationship. We employed a multi-omics meta-analysis approach to identify the rhizospheric bacteria co-existing with legumes at different developmental stages. The data from eight different legume species across various geographical locations, soil conditions and developmental stages (vegetative, reproductive and maturation) were included in the study. A total of 10 developmental stage-specific marker bacteria were identified and found to be positively associated with plant growth phenotypes. The functional profiling elucidated the expression of these marker bacterial genes, indicating the active presence of marker bacteria. Co-expression network analysis revealed the involvement of gene clusters in biological processes such as cobalt and nitrogen metabolism. Further, pathway enrichment analysis illustrated the role of these bacteria in plant metabolic pathways, such as biosynthesis of various plant secondary metabolites, biotin metabolism and carbon fixation in photosynthetic organisms. Our study identified a positive relationship between marker bacteria and the host plant, suggesting their crucial role in legume growth and development that could further aid in crop improvement strategies.

Accession Number: WOS:001420537200001

PubMed ID: 39950378

Language: English

Document Type: Article; Early Access

Author Keywords: biotin metabolism; developmental stages; legumes; marker bacteria; multi-omics; rhizospheric microbiome

KeyWords Plus: PLANT; NITROGEN; SOIL; WILD; COMMUNITIES; ASSEMBLAGE; DIVERSITY; CYTOSCAPE; SYMBIOSIS; MELILOTI

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Publisher: WILEY

Publisher Address: 111 RIVER ST, HOBOKEN 07030-5774, NJ USA

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Web of Science Categories: Plant Sciences

Research Areas: Plant Sciences

IDS Number: W7S9N

ISSN: 0140-7791

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29-char Source Abbrev.: PLANT CELL ENVIRON

ISO Source Abbrev.: Plant Cell Environ.

Source Item Page Count: 16

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Department of Biotechnology, Government of India	
Department of Biotechnology, Government of India under the National Network Project scheme	
UGC	

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Open Access: Green Submitted

Output Date: 2025-03-04

Record 9 of 28

Title: The representation of temperature over Northeast India: assessing the performance of CORDEX-CORE model experiments

Author(s): Ahamed, RA (Ahamed, R. A.); Maharana, P (Maharana, P.); Sharma, A (Sharma, Aka); Dimri, AP (Dimri, A. P.)

Source: THEORETICAL AND APPLIED CLIMATOLOGY **Volume:** 156 **Issue:** 2 **Article Number:** 88 **DOI:** 10.1007/s00704-024-05336-4 **Published Date:** 2025 FEB

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 87

Abstract: Performance of the latest high-resolution COordinated Regional Climate Downscaling EXperiment-Coordinated Output for Regional Evaluation (CORDEX-CORE) model experiment suites for simulating temperature over Northeast India (NEI) during 1979-2005 are assessed. Three different suites of Regional Climate Models (RCMs), i.e., COSMO, RegCM4.7 and REMO suites dynamically downscaled from three different Global Circulation Models (GCMs) available over the CORDEX South Asia domain are considered. The three RCMs are evaluated to assess the performance in simulating the spatial pattern of temperature over the study area. The model experiments could simulate pre- and post-monsoon temperatures fairly well as compared to monsoon and winter seasons. The RCMs show a higher positive correlation coefficient (CC) of 0.9 - 0.98. Over the majority of NEI, the added value (AV) and Brier skill score (BSS) exhibit positive values of 0.4-0.8 and 0.2-0.8 respectively, indicating additional information and/or improvement after downscaling. The inter-comparisons show that the present-day temperature over the study region is better captured in the ensemble than in the individual model. Individually, the MPI_LR_COSMO model better simulates the spatial pattern of temperature with a higher spatial correlation of similar to 0.956 than the other RCMs. The temperature extremes are also well represented spatially by the model. Overall, the COSMO model experiment suites were identified to be the best with the corresponding observation across the year over NEI.

Accession Number: WOS:001396045900015

Language: English

Document Type: Article

Author Keywords: CORDEX-CORE; Regional climate model (RCM); Global climate model (GCM); Northeast India; Temperature

KeyWords Plus: REGIONAL CLIMATE MODEL; LONG-TERM TRENDS; HIMALAYAN REGION; PROJECTIONS; PRECIPITATION; ASIA; RESOLUTION; SIMULATIONS; VARIABILITY; RAINFALL

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Publisher: SPRINGER WIEN

Publisher Address: Prinz-Eugen-Strasse 8-10, A-1040 Vienna, AUSTRIA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Meteorology & Atmospheric Sciences

Research Areas: Meteorology & Atmospheric Sciences

IDS Number: S1Q0W

ISSN: 0177-798X

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ISO Source Abbrev.: Theor. Appl. Climatol.

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UGC	

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Output Date: 2025-03-04

Record 10 of 28

Title: Community perceptions of climate change in Manipur, India

Author(s): Ahamed, RA (Ahamed, R. A.); Mal, S (Mal, Suraj); Maharana, P (Maharana, P.); Dimri, AP (Dimri, A. P.)

Source: THEORETICAL AND APPLIED CLIMATOLOGY **Volume:** 156 **Issue:** 2 **Article Number:** 92 **DOI:** 10.1007/s00704-024-05319-5 **Published Date:** 2025 FEB

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 101

Abstract: Climate change poses a significant threat to the lives and livelihoods of local communities in the Himalayan regions. These regions do not have an extensive network of meteorological stations due to poor infrastructure for climate change studies. Understanding how the local community perceives climate change provides an important insight into specific features of climate change in the data-scarce regions. This study aimed to understand how local communities of Manipur in northeast India have perceived climate change, including its causes and impacts, its influences on their life and their responses. In this study, a survey was conducted in the valley and hill regions of Manipur on local community perceptions of climate change. The survey sample comprised of 193 randomly selected local inhabitants in both the regions. Through this survey, we aimed to determine how local communities respond to the effects of climate change in the study area based on their personal experiences. The results indicated that the local community has fairly strong perceptions of climate change with more than 80% of respondents reporting a change in the cultivation patterns and agricultural productivity have been changing over the years. Another 98% of the respondents acknowledged a change in "summer temperature" over the past 15-20 years as a result of climate change. Further, the majority of respondents (> 97%) are concerned that climate change may increase the frequency of natural disasters in the state. The consistency of this local's perception with meteorological data was also evaluated. The annual mean temperature had increased at a rate of 0.027 and 0.024 degrees C/year in the valley and hill, respectively, while the annual precipitation declined at a rate of 0.08 and 0.12 mm/year in the valley and hill, respectively, in the past 44 years (1979-2022). The results reveal an overall consistency between local community perceptions of climate change and the scientific observations of these changes. A better understanding of how communities perceive climate change would enable decision-makers to devise local adaptation measures and formulate an effective mitigation strategy that efficiently tackles the negative impact of climate change impacts.

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Language: English

Document Type: Article

KeyWords Plus: ADAPTATION STRATEGIES; FARMERS PERCEPTIONS; NORTHEAST INDIA; IMPACTS; VULNERABILITY; AGRICULTURE; RESILIENCE; HIMALAYAS

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Record 11 of 28

Title: Single same-cell multiome for dissecting key plant traits

Author(s): Garg, R (Garg, Rohini); Sahu, SK (Sahu, Sunil Kumar); Jain, M (Jain, Mukesh)

Source: TRENDS IN PLANT SCIENCE **Volume:** 30 **Issue:** 2 **Pages:** 128-130 **DOI:** 10.1016/j.tplants.2024.10.008 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 1

Usage Count (Since 2013): 1

Cited Reference Count: 12

Abstract: Understanding molecular dynamics at the single cell level is crucial to understand plant traits. Recently, Liu et al. and Cui et al. reported multiome analysis in the same cell/nucleus to dissect the key plant traits (osmotic stress response and pod development). Their results provide novel insights into pathways and regulatory networks at a single cell resolution.

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PubMed ID: 39487081

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Document Type: Editorial Material

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Web of Science Categories: Plant Sciences
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China National GeneBank (CNGB)	

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Output Date: 2025-03-04

Record 12 of 28

Title: Weighted index of graph efficiency improvements for by-production technology and its application to the Indian coal-based thermal power sector

Author(s): Murty, S (Murty, Sushama); Nagpal, R (Nagpal, Resham)

Source: JOURNAL OF PRODUCTIVITY ANALYSIS **DOI:** 10.1007/s11123-024-00750-2 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 15

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

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Abstract: In contrast to conventional output-based efficiency indexes that hold input-levels fixed, a graph index of efficiency-improvements (EIs) is derived for a by-production technology by optimizing a weighted average of EIs in input and good and bad-output directions. Under the by-production approach, EIs in the input directions are non-positively related to EI in the good-output direction and non-negatively related to EI

in the bad-output direction. The optimal configurations of EIs balances between the gains for the graph efficiency index from increase in EI in the emission direction and the loss from reduction in EI along the good-output direction when there are EIs in the input directions. A comprehensive classification of possible optimal configurations of EIs is provided. The optimal configuration that materializes depends crucially on the weights given to EIs in the input and output directions. Even with zero weights given to EIs in all the input directions, the optimal configuration can involve EIs in the directions of the emission-causing inputs. The optimal configurations of graph EIs for the plants in the Indian coal-based thermal power sector are studied.

Accession Number: WOS:001421495000001

Language: English

Document Type: Article; Early Access

Author Keywords: Emission-generating technologies; By-production technologies; Output-based efficiency indexes; Weighted graph efficiency indexes; Efficiency improvements; Q50; Q40; D24

KeyWords Plus: ENVIRONMENTAL EFFICIENCY; ENERGY

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Record 13 of 28

Title: Plasma screening effects on the above-threshold ionization spectra of argon atom in an intense laser field

Author(s): Sharma, A (Sharma, Ashish); Tyagi, M (Tyagi, Manisha); Mohan, M (Mohan, Man); Jha, AKS (Jha, Alok Kumar Singh)

Source: EUROPEAN PHYSICAL JOURNAL D **Volume:** 79 **Issue:** 2 **Article Number:** 12 **DOI:** 10.1140/epjd/s10053-025-00962-7 **Published Date:** 2025 FEB

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 1

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Cited Reference Count: 68

Abstract: Plasma screening effects on the above-threshold ionization (ATI) of the argon atom in Gaussian windowed soft-core Coulomb (GSC) potential is investigated using the time-dependent Schrodinger equation (TDSE), by employing the Crank-Nicolson numerical method. The variation in the ground-state population and ionization probabilities with time is calculated in the Debye plasma environment. The effect of laser intensity variations on the ATI spectra of argon atom is calculated, and ATI spectra show a similar pattern of redshift, as discussed in the available literature. Plasma screening effects on the population of ground state, ionization probabilities, and ATI spectra of argon atom are studied in GSC potential for the first time, at different laser intensities and Debye lengths.

Accession Number: WOS:001419153100001

Language: English

Document Type: Article

KeyWords Plus: MULTIPHOTON IONIZATION; HYDROGEN; XENON

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Web of Science Categories: Optics; Physics, Atomic, Molecular & Chemical

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Output Date: 2025-03-04

Record 14 of 28

Title: Structural stability of the robust GdYTi₂O₇ pyrochlore under high pressure

Author(s): Singh, Y (Singh, Yogendar); Kumar, V (Kumar, Vivek); Vazhappilly, T (Vazhappilly, Tijo); Poswal, HK (Poswal, Himanshu Kumar); Pandey, KK (Pandey, K. K.); Kulriya, PK (Kulriya, Pawan Kumar)

Source: JOURNAL OF THE AMERICAN CERAMIC SOCIETY **DOI:** 10.1111/jace.20444 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 21

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 50

Abstract: Complex ceramics with pyrochlore (A(2)B(2)O(7)) and defect-fluorite ((A, B)(4)O-7) type structures experience structural modifications under high pressure. Here, we used mechanical milling and sintering followed by compression in diamond anvil cell to determine the high-pressure behavior using in-situ synchrotron diffraction. Raman spectroscopy and X-ray diffraction at ambient pressure confirm the pyrochlore phase of as-prepared GdYTi2O7 ceramic. In-situ high-pressure experiments reveal no structural phase transition in GdYTi2O7 pyrochlore up to approximately 50 GPa. The variation in the x positional coordinate of O-48f oxygen and cation-anion bond lengths shows that disordering occurs at high pressure above similar to 43 GPa. The Rietveld refinement results indicate the pyrochlore phase of GdYTi2O7 ceramic at the highest pressure of similar to 50 GPa. Compared to Y2Ti2O7, the equal substitution of Y3+ and Gd3+ at the A-site increases phase stability at high pressures. The experimental results indicate that mainly cation disordering occurs with increasing pressure, and lower compressibility of < Ti-O-48f > bonds should play a significant role in the robustness of GdYTi2O7 pyrochlore to sustain pyrochlore structure up to very high pressures. DFT-derived cation-anion bond lengths and bulk modulus value agree with the experimental results in supporting the robustness of the GdYTi2O7 pyrochlore.

Accession Number: WOS:001427842000001

Language: English

Document Type: Article; Early Access

Author Keywords: disorder transformation; high-pressure; pyrochlore; synchrotron radiation

KeyWords Plus: TOTAL-ENERGY CALCULATIONS; SINGLE-CRYSTAL; RE2TI2O7 RE; TRANSITION

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Record 15 of 28

Title: Signals of eV-scale sterile neutrino at long baseline neutrino experiments

Author(s): Parveen, S (Parveen, Sabila); Sharma, K (Sharma, Kiran); Patra, S (Patra, Sudhanwa); Mehta, P (Mehta, Poonam)

Source: EUROPEAN PHYSICAL JOURNAL C **Volume:** 85 **Issue:** 2 **Article Number:** 181 **DOI:** 10.1140/epjc/s10052-025-13834-6 **Published Date:** 2025 FEB 13

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

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Cited Reference Count: 93

Abstract: While most of the results of the neutrino oscillation experiments can be accommodated within the standard paradigm of three active flavors, there are tantalizing hints of an eV-scale sterile neutrino from anomalous results of a few short baseline experiments. This additional light sterile neutrino is expected to leave an imprint on the physics observables pertaining to standard unknowns such as determination of the Dirac-type leptonic CP phase, delta(13), the question of neutrino mass hierarchy and the octant of theta(23). The upcoming long baseline neutrino experiments such as T2HK, DUNE and P2O will be sensitive to active - sterile mixing. In the present work, we examine and assess the capability of these long baseline experiments to probe the sterile neutrino at the level of probabilities and event rates. We perform a detailed study by taking into account the values of parameters that are presently allowed and (a) study the impact on CP violation by examining the role played by various appearance and disappearance channels, (b) address the question of disentangling the intrinsic effects from extrinsic effects in the standard paradigm as well as three active plus one light sterile neutrino, and finally (c) assess the ability of these long baseline experiments to distinguish between the two scenarios. Our results indicate that for the true values of sterile parameters and for all values of delta(13), the sensitivity of P2O is the lowest while the sensitivity of T2HK is modest (<3 sigma) and the sensitivity of DUNE is >3 sigma. For larger values of the sterile mixing angles, there is an improvement in the sensitivity for all the three considered experiments.

Accession Number: WOS:001421594000003

Language: English

Document Type: Article

KeyWords Plus: CP-VIOLATION; OSCILLATION EXPERIMENTS; SIMULATION; MODEL; SOLAR

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Record 16 of 28

Title: Embodying the Mind: Anagrammatical Storytelling in Harriet Powers' Pictorial Quilt II

Author(s): Böke, P (Boeke, Paula)

Source: TEXTILE-CLOTH AND CULTURE **DOI:** 10.1080/14759756.2025.2459936 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 13

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 18

Abstract: This paper examines Harriet Powers' Pictorial Quilt II as an alternative form of storytelling that reflects the complex experience of African Americans in the 19th century. Through a detailed analysis of the quilt's materiality, visual elements, and cultural context, the paper situates Powers' work within African American quiltmaking traditions, emphasizing its role in resistance to racialization and the aftermath of slavery. The paper argues that the quilt serves as an anagrammatic medium, rearranging stories and symbols to create new meanings that transcend conventional Western narrative frameworks. Powers' use of biblical stories and natural phenomena reflects both African spiritual traditions and Christian theology, offering a polyphonic commentary on the trauma of slavery and ongoing racial oppression. The act of quiltmaking is framed as both a spiritual and intellectual process of empowerment, resilience, and resistance. This study highlights Powers' role not just as an artist but as a storyteller and creator of a visual narrative that addresses the paradoxes of Black existence in post-slavery America.

Accession Number: WOS:001420420700001

Language: English

Document Type: Article; Early Access

Author Keywords: textile; African American quiltmaking; critical fabulation; cultural identity; race and material culture; artistic resistance; abolitionism

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Record 17 of 28

Title: Dry Powder Inhalation of Nintedanib in Dibasic Calcium Phosphate for Targeting the Lungs in Pulmonary Fibrosis

Author(s): Singh, S (Singh, Sanjay); Francis, F (Francis, Frinto); Barsain, M (Barsain, Mohit); Kothuri, N (Kothuri, Naresh); Verma, S (Verma, Sonia); Bansode, H (Bansode, Himanshu); Chakradhar, JVUS (Chakradhar, J. V. U. S.); Yadav, C (Yadav, Chunna); Sharma, AK (Sharma, Ashok Kumar); Moharana, B (Moharana, Baisakhi); Panda, G (Panda, Gautam); Misra, A (Misra, Amit)

Source: MOLECULAR PHARMACEUTICS **DOI:** 10.1021/acs.molpharmaceut.4c01190 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 4

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 2

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Cited Reference Count: 43

Abstract: We prepared three variants of nintedanib dry powder inhalations (DPIs), one with dibasic calcium phosphate dihydrate (CaHPO4<middle dot>2H2O) and two with lactose monohydrate as the carrier. CaHPO4 is not reported as a DPI excipient. We compared nintedanib pharmacokinetics and efficacy of the CaHPO4 formulation against bleomycin-induced pulmonary fibrosis following oral (3.875 mg/q12h) and DPI (200 mu g/12 h) dosing in rats. Blood plasma C max, T max, and AUC resulting from oral dosing and DPI were 780 versus 147.5 mu g/mL, 2.47 versus 2.22 h, and 5562 versus 1094 mu g/mL<middle dot>h, respectively. Drug remaining in the lungs and airways at the end of 12 h of dosing with the DPI (2.41 +/- 0.37 mu g/g of tissue) was double the amount found after oral dosing (1.25 +/- 0.56 mu g/g). Lung fibrosis

induced in rats using bleomycin was resolved equally well by the two interventions administered q12h for 14 days. We submit that the reduction in systemic exposure to nintedanib and enhanced exposure to target tissue could offer significant therapeutic and safety advantages, and CaHPO4 can be easily developed as an excipient for DPIs.

Accession Number: WOS:001413266100001

PubMed ID: 39903817

Language: English

Document Type: Article; Early Access

Author Keywords: nintedanib; dicalcium phosphate; aerosol; pulmonary drug delivery; preclinical pharmacokinetics; preclinical efficacy

KeyWords Plus: INHALABLE MICROPARTICLES; SYSTEM CA(OH)2-H3PO4-H2O; SOLUBILITY; ATTRITION

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Research Areas: Research & Experimental Medicine; Pharmacology & Pharmacy

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Record 18 of 28

Title: Preferences for energy efficient cars in New Delhi: a discrete choice experiment exploring regulatory and non-regulatory interventions

Author(s): Sharma, CG (Sharma, Charu Grover); Bansal, S (Bansal, Sangeeta); Martinez-Cruz, AL (Martinez-Cruz, Adan L.)

Source: TRANSPORTATION **DOI:** 10.1007/s11116-025-10581-1 **Early Access Date:** FEB 2025 **Published Date:** 2025 FEB 7

Abstract: Tackling India's contribution to global carbon emissions is a priority from both national and international perspectives. Energy efficiency gains in Indian's transportation sector have been suggested as a promising way to mitigate carbon emissions. The Indian government is considering fuel efficiency labels for new passenger cars. Via a discrete choice experiment, this paper investigates how regulatory and non-regulatory interventions can be used to boost adoption of energy efficient cars in India. It estimates New Delhi's car buyers' willingness to pay (WTP) for a car displaying a best-efficiency label (which is about 54 to 85% more fuel efficient as compared to a usual car) to be 6 thousand USD or about 30% of what respondents would be willing to pay for a new car. However, the informational nudge embedded in labeling systems may not be enough to boost uptake of efficient cars. Thus, via a split-sample approach, it further investigates the potential of combining non-regulatory interventions-labeling system and peer effects-with a driving restrictions regulation. WTP for a best-efficiency label car increases by over 100% to 13.46 thousand USD under a driving restrictions regulation. The difference in WTP for a best-efficiency label across driving restrictions and no driving restrictions scenarios reflect regulatory costs faced by car drivers. By including an interaction effect between best-efficiency label and mileage in the econometric specifications, we show that these costs depend on the actual mileage of the car under consideration-with lower regulatory costs as actual efficiency improves. A latent class logit specification suggests that around 40% to 52% of respondents-labeled extrinsically-motivated adopters-would be responsive to peer effects.

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Document Type: Article; Early Access

Author Keywords: Driving restrictions; Fuel efficiency labels; Extrinsically-motivated adopters; Peer effects; New Delhi

KeyWords Plus: AIR-QUALITY; GREEN; INFORMATION; CONSUMPTION; EMISSIONS; HEALTH; PAY

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Record 19 of 28

Title: Unveiling Cannabinoids and Terpenes Diversity in Cannabis sativa L. From Northern India for Future Breeding Strategies

Author(s): Ghosh, D (Ghosh, Dipayan); Kundu, A (Kundu, Anitika); Chaudhary, N (Chaudhary, Neha); Gupta, D (Gupta, Darshan); Dwivedi, M (Dwivedi, Mridula); Verma, RS (Verma, Ram Swaroop); Shanker, K (Shanker, Karuna); Kumar, B (Kumar, Birendra); Kumar, N (Kumar, Narendra)

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Cited Reference Count: 81

Abstract: Cannabis sativa L. is an important medicinal plant with high commercial value. In recent years, the research interest in cannabidiol (CBD) and terpene-rich cannabis has been rapidly expanding due to their high therapeutic potential. The present study aims to explore the phytocannabinoids and terpenes diversity in

C. sativa collected from different parts of northern India. Our findings revealed that the cannabinoids and terpenes synthesize together in capitate stalked and capitate sessile glandular trichomes, whereas bulbous glands synthesize only terpenes. The North Indian C. sativa is mainly dominated by tetrahydrocannabinol. The CBD-rich plant diversity is nominal (1.11%) in studied north Indian C. sativa. The essential oil profiling reveals (E)-caryophyllene (10.30%-36.80%) as the major constituent, followed by alpha-humulene (0.50%-15.29%) and alpha-bisabolol (0.00%-16.40%) in the North Indian population. The cannabinoids and terpenes content showed significant diversity among and within the five studied populations. The correlation analysis between cannabinoids and terpenes indicates that alpha-pinene, beta-pinene and limonene positively correlated with CBD content. Similarly, alpha- and beta-selinene correlate positively with tetrahydrocannabinolic acid content. This study could help to identify the key cultivars from India and establish a consistent chemotype for future breeding programs.

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Author Keywords: cannabidiol | <italic>Cannabis sativa</italic> | diversity | phytocannabinoids | terpenes

KeyWords Plus: ESSENTIAL OIL; CHEMOTAXONOMIC ANALYSIS; DELTA(9)-TETRAHYDROCANNABINOL; CONSTITUENTS; ANTIOXIDANT; CULTIVARS; MEDICINE; DISEASE; IMPACT

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Output Date: 2025-03-04

Record 20 of 28

Title: Fatigue behavior of friction stir welded AA6061 alloy using brass insert

Author(s): Nagu, K (Nagu, Korra); Varun, A (Varun, A.); Kumar, MS (Kumar, Mechiri Sandeep); Kumar, KK (Kumar, Kethavath Kranthi); Satyanarayana, MVNV (Satyanarayana, M. V. N. V.); Kumar, A (Kumar, Adepu)

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Abstract: Aluminum alloys, broadly used in aerospace and automotive, are particularly susceptible to fatigue failures. The grain refinement characteristics can improve the fatigue behavior of aluminum alloys, which can be achieved using friction stir welding (FSW). The primary aim of this study is to examine how incorporating a brass insert influences the fatigue crack growth behavior of AA6061-T6 alloy welded through FSW, comparing welds with and without the insert. Microstructural analysis showed fine recrystallized grains are obtained for both welds. However, welding with the insert exhibited smaller grains.

Moreover, robust intermetallics are formed for welding with insert due to the intermixing reaction at FSW temperature, which improves mechanical properties such as hardness and tensile strength. The findings on fatigue indicate that the fatigue resistance of the weld with insert is significantly high, which can be attributed to the increased grain boundaries and development of strong intermetallic compounds, which hindered the crack propagation. Fractographic analysis of the fracture surfaces indicated the presence of striation marks in the weld with the insert, which slowed crack propagation and prolonged fatigue life. The findings suggest real-world applications in industries, where improving the fatigue life and structural reliability of welded aluminum components is critical.

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Language: English

Document Type: Article; Early Access

Author Keywords: Fatigue; friction stir welding; AA6061; brass insert; microstructure

KeyWords Plus: MECHANICAL-PROPERTIES; INTERMETALLIC COMPOUNDS; TENSILE-STRENGTH; JOINTS; MICROSTRUCTURE; ENHANCEMENT

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Record 21 of 28

Title: Aqueous extract of Enantia chlorantha Oliv. demonstrates antimalarial activity and improves redox imbalance and biochemical alterations in mice

Author(s): Evbuomwan, IO (Evbuomwan, Ikponmwosa Owen); Adeyemi, OS (Adeyemi, Oluyomi Stephen); Oluba, OM (Oluba, Olarewaju Michael)

Source: BMC COMPLEMENTARY MEDICINE AND THERAPIES **Volume:** 25 **Issue:** 1 **Article Number:** 73 **DOI:** 10.1186/s12906-025-04745-w **Published Date:** 2025 FEB 24

Abstract: Background Malaria is an infectious disease, which has continued to cause inconceivable loss of lives every year, almost unabatedly. Currently, it has become more difficult to treat the disease due to the emergence and spread of resistance to recommended antimalarial drugs. This situation necessitates an urgent search for antimalarial compounds with unique modes of action. Here, we investigate the antimalarial activity, antioxidant and anti-inflammatory capacity of Enantia chlorantha aqueous stem bark extract (EcASBE) in vivo. Methods The extract was screened for selected phytoconstituents including alkaloids and flavonoids. We evaluated the antimalarial activity of EcASBE against Plasmodium berghei NK65 infection in mice, using curative, prophylactic, and suppressive antimalarial test models, respectively. In addition, the antioxidant and anti-inflammatory activities of the extract were assessed. Results The EcASBE significantly ($p < 0.05$) inhibited parasitaemia dose-dependently, with the highest inhibition (80.4%) and prolonged survival (MST = 20) observed in the curative test. Our findings reveal significant ($p < 0.05$) improvement of serum ALT, AST, ALP, GGT, and levels of TNF-alpha, creatinine and urea following extract administration. Furthermore, the extract led to a significant ($p < 0.05$) rise in the levels of CAT, SOD, GPx, and GSH, with a concomitant reduction in NO and MDA levels. Conclusion The antimalarial, antioxidative, antiperoxidative, and inflammatory-inhibiting properties of the plant in infected mice demonstrate its great value for therapeutic intervention, and substantiate its use in traditional medicine for malaria treatment. Hence, further investigation to identify the repertoire of the active antimalarial components is warranted.

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Author Keywords: Cytokines; Drug discovery; Malaria; Plasmodium berghei; Oxidative stress

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Record 22 of 28

Title: Role of EhLINE1_ORF1p outside retrotransposition: Downregulation causes growth defects in Entamoeba histolytica

Author(s): Kaur, D (Kaur, Devinder); Singh, SS (Singh, Shashi Shekhar); Sharma, S (Sharma, Shraddha); Bhattacharya, S (Bhattacharya, Sudha)

Source: JOURNAL OF BIOSCIENCES **Volume:** 50 **Issue:** 1 **Article Number:** 10 **DOI:** 10.1007/s12038-024-00485-0 **Published Date:** 2025 FEB 19

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Abstract: The constitutive expression of EhLINE1_ORF1p in Entamoeba histolytica cells in the absence of retrotransposition suggests that this protein may serve roles beyond retrotransposition. To delve into this possibility, we generated and analyzed transcriptomic data of EhLINE1_ORF1p partial-knockdown cell lines. This analysis unveiled the significance of EhLINE1_ORF1p in the growth of E. histolytica cells. Our

investigation of the consequences of EhLINE1_ORF1p partial knockdown highlighted its impact on the genes involved in ribosome biogenesis, pre-rRNA processing, RNA helicase, and oxidoreductase activity, particularly those associated with amoebiasis. These affected genes are categorized as having high expression and are essential for optimal cell growth. Validation through western blotting confirmed a substantial and pronounced decline in EhLINE1_ORF1p level, and growth kinetics confirmed decline in cell growth. These findings provide compelling evidence supporting the plausible role of EhLINE1_ORF1p in regulating the growth of E. histolytica.

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Language: English

Document Type: Article

Author Keywords: EhLINE1_ORF1p; natural antisense transcripts (NATs); nucleotide binding protein; partial knockdown; RNA-Seq; splicing; transcriptomics

KeyWords Plus: ORF1 PROTEIN; EXPRESSION; INVOLVEMENT; METABOLISM; REDUCTION; BLOCKING; ELEMENTS; STRESS; LINES

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Title: Fuzzy modelling and cost optimization of fault-tolerant system with service interruption

Author(s): Singh, VP (Singh, Vijay Pratap); Jain, M (Jain, Madhu); Meena, RK (Meena, Rakesh Kumar); Kumar, P (Kumar, Pankaj)

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Abstract: Redundancy and maintainability-supported fault-tolerant machining systems are used in many industries to achieve pre-specified reliability and system capability. In this investigation, a non-Markov model for the machining system has been developed by involving the concepts of server vacation, server breakdown, and reboot process. The server may fail and undergo primary repair which may be unsuccessful in recovering the server. In case of imperfect server repair, an additional repair is also performed to bring the server back into functional mode. By using the supplementary variable for the residual repair, we obtain the analytic solution of the finite population M/G/1 queueing model for the performance prediction of FTMS. The method of parametric non-linear programming has been implemented to evaluate the performance measures in both crisp and fuzzy environments. The meta-heuristic approaches PSO, GA and classical optimization technique quasi-Newton method are employed to determine the optimal design descriptors by minimizing the total cost. The sensitivity of performance indices with respect to system parameters has been examined for the specific repair time distributions by taking illustrations.

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Record 24 of 28

Title: Transforming landscapes: mapping urbanization and forest cover degradation in Dehradun, Uttarakhand (2000-2020)

Author(s): Jaiswal, R (Jaiswal, Rahul); Sharma, A (Sharma, Ajay); Prakash, D (Prakash, Divya); Choudhary, A (Choudhary, Ayesha); Verma, S (Verma, Sunita)

Source: ENVIRONMENTAL EARTH SCIENCES **Volume:** 84 **Issue:** 3 **Article Number:** 84 **DOI:** 10.1007/s12665-024-12047-6 **Published Date:** 2025 FEB

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Abstract: Urbanization is a rapidly intensifying global phenomenon, reshaping landscapes and altering ecosystems across regions. In India, the foothills of the Himalayas, particularly Dehradun, has witnessed significant transformations due to urban expansion. Rapid urbanization has given rise to various adverse consequences affecting the environment, economy, and the well-being of its inhabitants. Among these challenges, land-use change stands out as a significant issue linked to urbanization. This research investigates alterations in land use and land cover (LULC) during the period from 2000 to 2020 within the Dehradun District of Uttarakhand. Forest cover degradation is one of the main threats to the area. LULC changes are determined with an interval of 5 years, that is, 2000, 2005, 2010, 2015, and 2020. Remote sensing (RS) and Geographical information system (GIS) methods detect changes in urban and forested areas using a multi-temporal supervised classification approach for generating LULC maps. The classifications reveal significant changes in the study area from 2000 to 2020. It was found that there was a decline in dense vegetation by 9.00% and an increase in built-up area by 2.32%, which may be due to the increase in urbanization and industrialization across 20 years. The outcome of current research can help

significantly improve future development initiatives within the study area and is essential for the effective implementation of Sustainable Development Goal 15. The spatial analysis techniques contribute to a deeper understanding of potential strategies for prioritizing land use policies aimed at restoration at the priority level. These insights can then be extrapolated to benefit other socio-environmental tropical forest systems.

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Record 25 of 28

Title: Deep transfer learning hybrid techniques for precision in breast cancer tumor histopathology classification

Author(s): Gupta, M (Gupta, Muniraj); Verma, N (Verma, Nidhi); Sharma, N (Sharma, Naveen); Singh, SN (Singh, Satyendra Narayan); Singh, RKB (Singh, R. K. Brojen); Sharma, SK (Sharma, Saurabh Kumar)

Source: HEALTH INFORMATION SCIENCE AND SYSTEMS **Volume:** 13 **Issue:** 1 **Article Number:** 20 **DOI:** 10.1007/s13755-025-00337-7 **Published Date:** 2025 FEB 11

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Abstract: The breast cancer is one of the most prevalent causes of cancer-related death globally. Preliminary diagnosis of breast cancer increases the patient's chances of survival. Breast cancer classification is a challenging problem due to dense tissue structures, subtle variations, cellular heterogeneity, artifacts, and variability. In this paper, we propose three hybrid deep-transfer learning models for breast cancer classification using histopathology images. These models use Xception model as a base model, and we add seven more layers to fine-tune the base model. We also performed an extensive comparative analysis of five prominent machine-learning classifiers, namely Random Forest Classifier (RFC), Logistic Regression (LR), Support Vector Classifier (SVC), K-Nearest Neighbors (KNN), and Ada-boost. We incorporate the best performing two classifiers, namely RFC and SVC, in the fine-tuned Xception model, and accordingly, they are named as Xception Random Forest (XRF) and Xception Support Vector (XSV), respectively. The fine-tuned Xception model with softmax classifier is termed as Multi-layer Xception Classifier (MXC). These three models are evaluated on the two publically available datasets: BreakHis and Breast Histopathology Images Database (BHID). Our all three models perform better than the state-of-the-art methods. The XRF provides the best performance at the 40 x magnification level on the BreakHis dataset, with an accuracy (ACC) of 94.44%, F1 score (F1) of 94.44%, area under the receiver operating characteristic curve (AUC) of 95.12%, Matthew's correlation coefficient (MCC) of 88.98%, kappa (K) of 88.88%, and classification success index (CSI) of 89.23%. The MXC provides the best performance on the BHID dataset, with an ACC of 88.50%, F1 of 88.50%, AUC of 95.12%, MCC of 77.03%, K of 77.00%, and CSI of 79.13%. Further, to validate our models, we performed fivefold cross-validation on both datasets and obtained similar results.

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Record 26 of 28

Title: AXL signaling in cancer: from molecular insights to targeted therapies

Author(s): Yadav, M (Yadav, Monika); Sharma, A (Sharma, Akansha); Patne, K (Patne, Ketki); Tabasum, S (Tabasum, Saba); Suryavanshi, J (Suryavanshi, Jyoti); Rawat, L (Rawat, Laxminarayan); Machaalani, M (Machaalani, Marc); Eid, M (Eid, Marc); Singh, RP (Singh, Rana P.); Choueiri, TK (Choueiri, Toni K.); Pal, S (Pal, Soumitro); Sabarwal, A (Sabarwal, Akash)

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Abstract: AXL, a member of the TAM receptor family, has emerged as a potential target for advanced-stage human malignancies. It is frequently overexpressed in different cancers and plays a significant role in various tumor-promoting pathways, including cancer cell proliferation, invasion, metastasis, epithelial-mesenchymal transition (EMT), angiogenesis, stemness, DNA damage response, acquired therapeutic resistance, immunosuppression, and inflammatory responses. Beyond oncology, AXL also facilitates viral infections, including SARS-CoV-2 and Zika highlighting its importance in both cancer and virology. In preclinical models, small-molecule kinase inhibitors targeting AXL have shown promising anti-tumorigenic potential. This review primarily focuses on the induction, regulation and biological functions of AXL in mediating these tumor-promoting pathways. We discuss a range of therapeutic strategies, including recently developed small-molecule tyrosine kinase inhibitors (TKIs), monoclonal antibodies, and antibody-drug conjugates (ADCs), anti-AXL-CAR, and combination therapies. These interventions are being examined in both preclinical and clinical studies, offering the potential for improved drug sensitivity and therapeutic efficacy. We further discuss the mechanisms of acquired therapeutic resistance, particularly the crosstalk between AXL and other critical receptor tyrosine kinases (RTKs) such as c-MET, EGFR, HER2/HER3, VEGFR, PDGFR, and FLT3. Finally, we highlight key research areas that require further exploration to enhance AXL-mediated therapeutic approaches for improved clinical outcomes.

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Title: Mechanistic Insight of Pharmacological Aspects of Violacein: Recent Trends and Advancements

Author(s): Chauhan, A (Chauhan, Abhishek); Mathkor, DM (Mathkor, Darin Mansor); Joshi, H (Joshi, Hemant); Chauhan, R (Chauhan, Ritu); Sharma, U (Sharma, Ujjawal); Sharma, V (Sharma, Vikas); Kumar, M (Kumar, Manoj); Saini, RV (Saini, Reena V.); Saini, AK (Saini, Adesh K.); Tuli, HS (Tuli, Hardeep Singh); Kaur, D (Kaur, Damandeep); Haque, S (Haque, Shafiul)

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Abstract: Since its discovery in the bacterium Chromobacterium violaceum, violacein-a striking purple pigment-has garnered significant interest due to its promising applications in the food and pharmaceutical industries. Violacein exhibits a range of pharmacological properties, including anti-inflammatory, anticancer, antibacterial, and antiparasitic effects, yet its complete molecular mechanisms are still being elucidated. Its mechanisms of action likely involve complex interactions with cellular receptors, signaling pathways, and specific molecular targets. Given violacein's unique properties and bioactive intermediates, future research holds substantial potential to advance its clinical and industrial applications. Upcoming studies will focus on deepening our understanding of violacein's molecular interactions, conducting clinical trials, and refining drug delivery systems to maximize its therapeutic value. Additionally, obtaining regulatory approval, conducting rigorous safety assessments, and developing efficient biosynthetic methods remain essential steps for violacein's successful integration into food biotechnology and medical applications.

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Author Keywords: biosynthesis pathways; chemoprevention; <italic>Chromobacterium violaceum</italic>; pharmacological mechanisms; safety evaluation

KeyWords Plus: NATURAL PIGMENT; IN-VITRO; GROWTH

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Author(s): Joshi, H (Joshi, Hemant); Bhushan, S (Bhushan, Sakshi); Dimri, T (Dimri, Tanisha); Sharma, D (Sharma, Deepak); Sak, K (Sak, Katrin); Chauhan, A (Chauhan, Abhishek); Chauhan, R (Chauhan, Ritu); Haque, S (Haque, Shafiul); Ahmad, F (Ahmad, Faraz); Kumar, M (Kumar, Manoj); Tuli, HS (Tuli, Hardeep Singh); Kaur, D (Kaur, Damandeep)

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Abstract: Harmine is a beta-carboline alkaloid derived from Peganum harmala, showing a solid antitumor potential in different types of human cancer cells. Unfortunately, the clinical application of this natural alkaloid has been impeded till now by severe toxic side effects, especially neurotoxicity, besides its poor water solubility. Therefore, over the recent years, several semisynthetic derivatives of harmine have been prepared and studied concerning their abilities to inhibit tumor cell proliferation, survival, angiogenesis, migration, and invasion in diverse preclinical models. This review article summarizes the anticancer effects of harmine and its synthetic derivatives, demonstrating their high potential to be developed as novel anticancer drugs to supplement our current therapeutic arsenal in the fight against the globally increasing rate of malignant disorders.

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Author Keywords: Harmine; Alkaloid; Anti-cancer; Natural product; Cancer therapeutics

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