SOUVENIR

3rd Global Conference

On

EMERGING TRENDS IN RESEARCH & DEVELOPMENT

ETRD – 2024

June 15 – 16, 2024

***Organized by IJIRG in* Virtual Mode**

With the Association of

IQAC Cell, Govt. Vivekanand P.G. College, Maihar, Satna, M.P. India
&
K. P. S. Science Academy, M. P. India
&
Kahaar Magazine, Lucknow, U. P., India

Supported by

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Pointer Publishers, Jaipur, Rajasthan, India

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Message

It brings me immense pleasure and enthusiasm to see that the International Journal of Innovative Research and Growth (IJIRG) is organizing the 3rd Global Conference on “Emerging Trends in Research & Development" (ETRD-2024) virtually from June 15-16, 2024

The focus of this conference is to provide a platform for all young researchers, academicians, and industry personnel to share their innovative ideas and latest innovations.

We all are here to celebrate the convergence of intellect, curiosity, and innovation. We embark on a journey with immense promise for advancing human knowledge and improving society. This conference serves as a testament to the power of collaboration and the relentless pursuit of excellence that defines the world of academia and innovation.

The theme of this conference, "Emerging Trends in Research & Development," encapsulates the spirit of progress and transformation that drives us forward. It is a call to action for all those dedicated to pushing the boundaries of knowledge, exploring new frontiers, and leveraging the latest advancements in technology and interdisciplinary collaboration to tackle the most pressing challenges of our time.

I am particularly excited about this conference's diverse topics and perspectives. From artificial intelligence and biotechnology to sustainable

development and social sciences, the breadth and depth of our discussions reflect the multifaceted nature of modern research and development.

I extend my heartfelt wishes to the organizers, speakers, and participants who have dedicated their time and effort to making this conference a reality. I am confident that your hard work and dedication will lead to a memorable and productive event. Once again,

I wish for a successful conference with fruitful discussions, valuable networking, and meaningful collaborations.

(Chandra Kant Jaggi)

Residence: B – 22, 2nd Floor, Mansarover Garden, New Delhi – 110 015, Mobile: +919891919399

Prof. (Dr.) P.L. Verma
Chief Patron, ETRD-24

Message

Dear Esteemed Guests and Participants

It gives me immense pleasure to extend a warm welcome to each one of you to the 3rd Global Conference on Emerging Trends in Research & Development (ETRD-24), organized by the International Journal of Innovative Research and Growth (IJIRG) in collaboration with the Internal Quality Assurance Cell (IQAC) of Government Vivekanand PG College, Satna, Madhya Pradesh, India; KPS Science Academy, Madhya Pradesh, India; and Kahaar Magazine, Lucknow, Uttar Pradesh, India. I am honored to serve as the Chief Patron of this prestigious event.

ETRD-24 stands as a testament to the spirit of collaboration and the pursuit of excellence in research and development. It is a platform where scholars, researchers, academicians, and industry experts from across the globe come together to exchange knowledge, share insights, and explore the latest advancements in their respective fields.

I extend my heartfelt gratitude to all the distinguished speakers, presenters, and participants whose dedication and enthusiasm have contributed to the success of this conference. Your invaluable contributions are instrumental in fostering intellectual discourse and driving innovation.

I would also like to express my sincere appreciation to our esteemed supporters, Ferrenzo India Pvt. Limited, Indore, Madhya Pradesh, India, and Pointer Publishers, Jaipur, Rajasthan, India for their generous sponsorship and unwavering commitment to promoting academic excellence and research endeavours.

I encourage all participants to actively engage in the sessions, exchange ideas, and forge new partnerships that will not only enrich your professional endeavours but also contribute to the advancement of your respective fields and the betterment of society as a whole.

In closing, I extend my best wishes for a productive, enlightening, and memorable conference experience. May ETRD-24 inspire you to push the boundaries of knowledge and make meaningful contributions to the world around us.

Thank you once again to everyone who has contributed to the success of ETRD-24. Your support and participation are deeply appreciated.

Warm Regards

Prof. (Dr.) P. L. Verma

Chief Patron

ETRD-24

Prof. A. K. Shrivastava
Chief Patron, ETRD-24

Message

It gives me immense pleasure to know that the International Journal of Innovative Research and Growth (IJIRG) India is Organizing 3rd Global Conference on "Emerging Trends in Research & Development" ETRD-2024 in association with IQAC Cell, Govt. Vivekanand P.G. College, Maihar, Satna (MP), K.P.S. Science Academy (MP) & Kahaar Magazine, Lucknow, (UP) India from 15 to 16 June, 2024 in Virtual mode.

Such academic event usually helps to research students, academicians, and industry personals in widening their knowledge and experience in the field of Research and Development. I am sure that this conference will also provide a platform to our students, teachers, and professionals to interact with each other and to evolve new dimensions in the field of Research and Innovations.

I sincerely appreciate the efforts of International Journal of Innovative Research and Growth (IJIRG) India team for providing a platform to all the personals working in the field of theme of this global conference. I am sure that the deliberations during the conference will enlighten and enrich the knowledge and experience of all the participants.

I extend my best wishes to all the delegates and organizing committee members to make this event a grand success.

Thanking You

(Prof. A.K. Shrivastava)
137 Saraswati Nagar,
Jiwaji University Road
Gwalior-474011

Prof. (Dr.) Vishwa Nath Maurya
Patron, ETRD-24

Message

It gives me an immense pleasure to introduce 3rd Global Conference ETRD-24, an ever-evolving online International Conference; which is a global platform for engineers, inventors, managers, professors, research scholars, learned academicians and industrial professionals for contributing and sharing their modern scientific knowledge and innovative research works. The ETRD-24 aims to promote massive academic, scientific and industrial growth facilitating worldwide research and teaching communities, industries and institutes. **The 3rd Global Conference ETRD-24 organised by the International Journal of Innovative Research and Growth (IJIRG) in virtual mode on 15-16 June 2024 in association with K.P.S. Science Academy, Madhya Pradesh and Kahaar Magazine, Lucknow, Uttar Pradesh** mainly focusses on modernity, novelty and sustainability of creative ideas, information and innovations of contributors; which will be definitely utmost useful to learners, research scholars, participants and diversified professionals for augmenting, enhancing and strengthening their ethical values, professional skills and scientific knowledge as well.

Particularly, the past two and 3rd Global Conferences on ETRD organized by the 'International Journal of Innovative Research and Growth (IJIRG)' have envisaged the significant role of Science, technology, management and arts including other intellectual fields in laying a firm foundation for the independent nation to take off as self-dependent and self-reliant country.

Outcome of valuable contributions of the **Chief Patron Prof. P.L. Verma, Conference Chair Dr. P. Singh, Conveners Dr. Naveen Kumar Singh and Dr. Naveen Kumar Ojha, Co-Convener Dr. Shiva Soni** and proactive Committee Members of the ETRD-24 has shaped it a memorable grand successful event. In order to make the Conference ETRD-24 a grand successful event, valuable efforts and inputs of Organizing Secretary **Dr. Vatsala Pawar** and Organizing Committee Members are considerably appreciable. I wish and hope for grand

success of future endeavours of the Editorial Board Members of the IJIRG for promoting excellence in higher education, research and innovation.

Prof. (Dr.) Vishwa Nath Maurya
Executive Vice-Chancellor,
Chartered International Da Vinci University,
Delaware, USA

Prof. Arun Kumar Gautam
Patron, ETRD-24

Message

It gives me immense pleasure to extend a warm welcome to each one of you to the ETRD-24, organized by the International Journal of Innovative Research and Growth (IJIRG) in collaboration with the Internal Quality Assurance Cell (IQAC) of Government Vivekanand PG College, Satna, Madhya Pradesh, India; KPS Science Academy, Madhya Pradesh, India; and Kahaar Magazine, Lucknow, Uttar Pradesh, India. I am honoured to serve as the Patron of this prestigious event.

I extend my heartfelt gratitude to all the distinguished speakers, presenters, and participants whose dedication and enthusiasm have contributed to the success of this conference. Your invaluable contributions are instrumental in fostering intellectual discourse and driving innovation.

I would also like to express my sincere appreciation to our esteemed supporters, Ferrenzo India Pvt. Limited, Indore, Madhya Pradesh, India, and Pointer Publishers, Jaipur, for their generous sponsorship and unwavering commitment to promoting academic excellence and research endeavours.

Organizing such an event at this point of time reinforces our objective of developing an environment for the exchange of ideas towards research and developments. I wish the conference would be able to deliberate on current issues of national and international relevance, particularly in the field of science, engineering, cloud computing, image processing, big data analytics, architecture and urban planning etc

In closing, I extend my best wishes for a productive, enlightening, and memorable conference experience. May ETRD-24 inspire you to push the boundaries of knowledge and make meaningful contributions to the world around us.

Thank you once again to everyone who has contributed to the success of ETRD-24. Your support and participation are deeply appreciated.

Warm regards,

Patron (ETRD-24)

(Prof. Arun Kuamr Gautam)

Principle Vivekanand PG College,

Maihar, Stana, M.P., India

Dr. P. Singh
Conference Chair, ETRD-24

Message

Dear Esteemed Colleagues and Participants,

It is with great pleasure that I extend my warmest welcome to you all as we gather for the **ETRD-24**. As the conference chair, it is my privilege to introduce the official publication of our esteemed event.

Within the pages of this conference souvenir, you will find a collection of scholarly works, research papers, and contributions from our distinguished speakers and participants.

I am deeply impressed by the breadth and depth of the contributions featured in this publication, which span a diverse array of topics. Each article offers valuable insights, unique perspectives, and potential avenues for further exploration and discovery.

I would like to express my sincere appreciation to all the authors whose dedication and expertise have enriched this publication. Your scholarly contributions have not only enhanced the quality of our conference but also contributed to the advancement of our collective understanding in diverse field of technology sustainable society.

I would also like to extend my gratitude to the reviewers and editorial team whose meticulous efforts ensured the rigor and integrity of the articles included in this publication. Your expertise and commitment to scholarly excellence are deeply appreciated.

As we peruse through the pages of this conference souvenir, may we find inspiration, insight, and renewed enthusiasm for our scholarly pursuits. May the knowledge shared within these articles serve as a catalyst for further research, collaboration, and innovation in the years to come.

I hope you find this publication both informative and thought-provoking, and I encourage you to engage with the ideas presented within its pages. Together, let us continue to push the boundaries of knowledge and strive for excellence in our shared endeavours.

Thank you once again to all who have contributed to the creation of this publication, and I wish you all continued success in your academic and professional endeavours.

Warm Regards,

(Dr. P. Singh)
Editor-In-Chief
IJIRG, India

Dr. Naveen Kumar Singh
Convener, ETRD-24

Message

It gives me immense pleasure that the International Journal of Innovative Research and Growth (IJIRG) is organizing 3rd Global Conference on **Emerging Trends in Research & Development (ETRD-24)** in association with IQAC Cell Govt. Vivekanand P.G. College, Maihar, Satna, M.P., India, KPS Science Academy M.P., India and Kahaar Magazine, Lucknow, U.P., India supported by Ferrenzo India Pvt. Ltd. Indore, M.P., India and Pointer Publishers, Jaipur, Rajasthan, India to be held on 15-16 June 2024.

It is matter of great pride for me to be a part of such occasion.

Such type of global conference is really a scientific platform for boosting, exploring and sharing scientific knowledge, innovative ideas, latest technologies and tools in research ambiance at the global level.

The ETRD-24 aims to provide a scientific platform for all the participants to congregate and interact with subject specialist. I am sure the deliberation of the conference will be an enlightening and enriching experiences for all the participants.

I welcome you all participants, chief guest, speakers, special guest and distinguished guest to ETRD-24 and extend my best wishes for the grand success of the Conference.

Warm Regards

(Dr. Naveen K Singh)
Associate Chief Editor,
IJIRG, India

Dr. Navin Kumar Ojha
Convener, ETRD-24

Message

I would like to express my profound appreciation for the virtual presence of each of you at the 3rd Global Conference on Emerging Trends in Research & Development (ETRD-2024), which IJIRG is organizing in virtual mode on June 15-16, 2024. I extend my heartfelt gratitude and warmest greetings to each participant. Your participation in the conference is invaluable, and I deeply appreciate the time and effort that you are investing in attending it. I truly believe that the conference will provide a platform for collaboration and knowledge-sharing and that you will find it to be a worthwhile experience. I further extend my sincere thanks to the chief patron - Prof. Dr. P. L. Verma and Prof. Dr. A. K. Shrivastava, patron – Prof. Dr. V. N. Maurya and Prof. Dr. A. K. Gautam, chief conference organizer – Dr. P. Singh, conference convener- Dr. Naveen Kumar Singh Chauhan, and the team for organizing the ETRD-2024. Their wishful thinking and efforts to provide a common platform for all academicians, scientists, and students to discuss ongoing scientific research and development in different areas of science throughout the globe are appreciable.

On this occasion, I wish to share some historical vignettes on scientific research and development in this message. In every civilization, improvements in philosophical thinking and novel scientific innovations have continuously been transferred from one generation to the next generation orally before the development of the writing system. For instance, the domestication of maize for agriculture has been dated to about 9,000 years ago in southern Mexico, before the development of writing systems. This shows the importance of communication for philosophical and scientific developments. Although there is no evidence and archive of scientific innovations and development in the prehistoric era because there were no writing systems available at that time; however, it does not mean that humans have not done any scientific development during that time. The early development of the writing systems in

different civilizations, such as in Sumerian, Mesopotamia, Egyptian, Chinese, and Indus Valley civilizations led to the foundation of keeping records of knowledge. Since then, the uninterrupted development of different languages, scripts, numerals, grammar, and calendar systems throughout the world helped humans to record information very systematically and organized. The development of various writing scripts along with oral communication boosted the multifaceted development of human society by providing easy expression of philosophy, scientific and political views, and astronomical, architectural, and medical knowledge. In context to India, as far as the recorded history goes, since Vedic era, the country has been known as the land of scientific knowledge, wisdom, philosophy, ayurveda, yoga, medicine, mathematics, astronomy, agriculture, metallurgy, ancient engineering, and spices. The list of inventions is too big to be documented in a single letter and can be found elsewhere.

Following the tradition of the land of knowledge, wisdom, diversities, culture, and rich heritage – India, I welcome you all and extend my sincere thanks to each of you for your attendance at ETRD-2024. I am sure that this platform will provide the opportunity to collaborate with each other in the future. Our efforts together will make the scientific future brighter and better.

My best wishes for the success of ETRD-2024.

(Dr. Navin Kumar Ojha)
Saarland University, Germany
Academic Editor
IJIRG, India

Prof. Hussian Ali Ahmed
Co-Convener, ETRD-24

Message

In the domain of education, doing research and efficient productive teaching are the paramount features of successful and active educators who endeavour to contribute to the development and growth of a world where the exchange of updated information and new ideas is quite demanding. As such, the means that enable the spread of knowledge and exchange of information are but good signs of the civilized and educated people especially if we know that such academic sources of information should be characterized by authenticity, reliability and truthfulness in disseminating information to areas that are far beyond their local boundaries. Also, the activities that are conducted by the people in charge of theses academic resources represented by the journals in addition to the publication of research papers, are but a further sign of the positive role played by such journals that derive their potential from the expertise of the personnel involved in carrying out different research procedures and activities. Setting out from the preceding points and being a member of the advisory board of the International Journal of Innovative Research and Growth (IJIRG), it is my utmost pleasure to write these words as we are approaching an amazing event, that is the third conference of the journal. The efforts of my colleagues who have been preparing for this international event and the time they are putting in it are very highly appreciated. I hope things will go one flexibly and smoothly with all the objectives behind holding the conference will be brought about so as to have a further push for our journal that is constantly followed up by our keen, enthusiastic and hard-working team over there in INDIA.

Best Regards

(Prof. Hussian Ali Ahmed)
Dean of College of Languages
Nawroz University / Duhok/ Kurdistan Region/ Iraq

Dr. Nitin Pratap Singh
Co-Convener, ETRD 2024

Message

On behalf of the organizing committee of "3rd Global Conference on Emerging Trends in Research & Development (ETRD-24) in Association with IQAC Cell Govt. Vivekanand P.G. College, Maihar, Satna, M.P., India, KPS Science Academy M.P., India and Kahaar Magazine, Lucknow, U.P., India supported by Ferrenzo India Pvt. Ltd. Indore, M.P., India and Pointer Publishers, Jaipur, Rajasthan, I have great pleasure in welcoming all the delegates to the Conference during June 15-16, 2024 through virtual mode. The main goal of organizing this conference is to share and enhance the knowledge of each and every individual in this digital world. We have given a good opportunity for those who have a thirst in knowing the present technological developments and also share their ideas. Furthermore, this conference will also facilitate the participants to expose and share various novel ideas.

I look forward to celebrating and enhancing our amazing profession with you at this 3rd Global Conference.

I thank the conference committee for extending their valuable time in organizing the program and all the authors, reviewers, and other contributors for their sparkling efforts and their belief in the excellence of ETRD-24.

Thank You

(Prof. Nitin Pratap Singh)

Dr. Shiva Soni
Co-Convener, ETRD-24

Message

It is with great pleasure that I extend my warmest welcome to you all as we gather for the **ETRD-24**. As the Co-Convener, it is my privilege to introduce the official publication of our esteemed event.

I would like to express my sincere appreciation to all the authors whose dedication and expertise have enriched this publication. Your scholarly contributions have not only enhanced the quality of our conference but also contributed to the advancement of our collective understanding in diverse field of technology sustainable society.

I would also like to extend my gratitude to the reviewers and editorial team whose meticulous efforts ensured the rigor and integrity of the articles included in this publication. Your expertise and commitment to scholarly excellence are deeply appreciated.

I hope you find this publication both informative and thought-provoking, and I encourage you to engage with the ideas presented within its pages. Together, let us continue to push the boundaries of knowledge and strive for excellence in our shared endeavours.

Thank you once again to all who have contributed to the creation of this publication, and I wish you all continued success in your academic and professional endeavours.

Thank You

(Dr. Shiva Soni)
Deputy Editor
IJIRG, India

Prof. Asghar Ali Ansari
Organizing Secretary, ETRD-24

Message

Educational conferences are food for the scholars which enriches their knowledge by presenting the new and different ideas by the scholars and for the scholars. I am excited to inform that the 'International Journal of Innovative Research and Growth' is going to organize the 3rd Global Conference on "Emerging Trends in Research & Development" from 15 to 16 June 2024. Many distinguished scholars from India as well as abroad have kindly given their consent to participate in the conference which is evidence of its being an international conference. We have received a lot of papers from the research scholars from the different parts of the world. Moreover, the conference also provides an opportunity to the scholars to get their research papers or any articles published in a sisterly magazine, 'KAHAR' published from Lucknow, U.P., India. On the behalf of the 'International Journal of Innovative Research and Growth' and in the capacity of the Organizing Secretary, I welcome all the participants and hope that they will certainly enrich their knowledge in the field of their studies. With my all-good wishes.

Best Wishes

Ansari

(Prof. (Dr.) Asghar Ali Ansari)

Ex. Prof. Um-Al Qura University, Saudi Arabia

Advisory Editor, IJIRG

Dr. Vatsala Pawar
Organizing Secretary, ETRD-24

Message

Dear Esteemed Guests and Participants!

It is with great pleasure and enthusiasm that I extend my warmest welcome to each and every one of you to the Third Global Conference ETRD-2024, scheduled to take place from June 15-16, 2024. As the Organizing Secretary, it brings me immense joy to witness the convergence of brilliant minds from across the globe in pursuit of knowledge exchange and scholarly discourse.

This conference serves as a platform for us to delve into the depths of various fields, exchange insights, and foster meaningful collaborations. Our collective efforts towards advancing research and innovation are crucial in addressing the myriad challenges faced by society today.

I extend my heartfelt gratitude to all the participants, keynote speakers, presenters, sponsors, and volunteers for their invaluable contributions towards making this event a reality. Your dedication and commitment have been instrumental in shaping this conference into a beacon of academic excellence.

As we embark on this enlightening journey together, let us remain steadfast in our pursuit of knowledge, guided by the principles of integrity, collaboration, and innovation. May this conference be a catalyst for transformative ideas and inspire us to make meaningful contributions to our respective fields and beyond.

Once again, I extend my warmest welcome to all participants and wish you a fruitful and enriching experience at the ETRD-2024.

Warm regards,

Thank You

(Dr. Vatsala Pawar)

About IJIRG

The **International Journal of Innovative Research and Growth (IJIRG)** is a distinguished, peer-reviewed journal that has gained international recognition since its establishment in 2015. The journal stands out for its commitment to publishing high-quality research articles that span a wide array of diverse fields, making it a vital resource for scholars and professionals across various disciplines.

IJIRG is renowned for its interdisciplinary approach, welcoming contributions from a broad spectrum of academic and practical fields like *"Engineering and Technology, Physical Sciences, Life Sciences, Chemical Sciences, Food Science, Earth Science, Biomedical Sciences, Biological Sciences, Biodiversity, Biotechnology, Clinical Sciences, Animal and Veterinary Sciences, Agricultural Sciences, Environmental sciences, Home Science, Horticulture, Hospitality and Tourism Management, Geology, Library & Information Science, Management, Yoga, Economics, Education, Languages and Literature etc."* This inclusivity ensures that the journal serves as a platform for innovative ideas and ground breaking research that can bridge gaps between different areas of study.

IJIRG maintains rigorous editorial standards to ensure the publication of credible and impactful research. Each submission undergoes a thorough peer-review process, involving multiple expert reviewers who evaluate the manuscript's originality, methodological rigor, and contribution to the field. This process not only upholds the journal's high standards but also provides authors with constructive feedback to refine their work.

IJIRG indexed and abstracted almost in all reputed databases *"CrossRef, Index Copernicus International, RPRI, SJIF, Research Gate, J-Gate, Road, WorldCat, I2OR, BASE, GENAMICS, COSMOS, CiteFactor, IP Indexing and more…."*

Since its inception, IJIRG has steadily built a reputation for excellence and reliability. Its international recognition is reflected in its diverse authorship and readership, comprising academics, researchers, and professionals from around the globe. The journal's articles are widely cited, indicating their influence and relevance in various fields of study.

IJIRG DOI Prefix (CrossRef): 10.26671/IJIRG

ISSN: 2455-1848

SJIF Value: 6.08 (2023)

RPRI Quality Score (2024): 3.87

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Abstract of Key Note Speakers

Shedding Light onto The Darkness of Human Disease

Prof. Dr. Ahmed El-Hussein ElNewishy
Director of Molecular Biotechnology Program, Faculty of Science, Biological Science Dept.
Galala University, Suez, Egypt
Email- a.elhusseiny@gu.edu.eg

Abstract

Photodynamic therapy (PDT) is a promising method in several diseases' diagnostics and treatment, using light, photosensitizing agents, and oxygen to destroy specific target cells while sparing healthy tissue. The presentation explores PDT's principles, mechanisms, and clinical uses, focusing on its potential as a minimally invasive treatment. It covers how PDT works, the types of photosensitizers and light sources used, and its effectiveness in various applications. The talk also addresses challenges like limited tissue penetration and side effects, along with ongoing research to improve PDT. Overall, it highlights PDT's potential to offer targeted treatment, improving patient outcomes and quality of life.

Keyword: PDT, Quality of Life, Human Disease.

21st Century Foreign Language Education

Lazgin Barany
Assistant Professor of Applied Linguistics, Head of the English Department, College of Language, Nawroz University, Duhok, Kurdistan of Iraq
Email- lazgin.barany@uod.ac

Abstract

Foreign language education in the 21st century should adapt to the changing and expanding demands of students and life beyond the classroom so that they are completely equipped to perform effectively in the contemporary world. Globalization and digitalization have drastically altered how students' study and teachers teach and interact with foreign languages (Fandiño, 2013). 21st-century language education places an emphasis on the use of language, new language skills and cultural knowledge rather than rote memorization and grammar as a method of connecting with people from all over the world (Eaton 2010; Barany 2019).

Teaching methods and evaluation have significantly changed, and new teachers need to undergo extensive on-the-job training and ongoing professional development to begin this process (European Commission, 2019).

- Accordingly, this presentation aims at shedding lights on the following 21st century language education concepts:
- Goals of 21st century foreign language education,
- 21st century language skills
- Revise and change y teaching methods to focus on learners and learning
- Redefine ourselves as foreign language teachers, redefine our classrooms, and redefine our schools' days among other changes that can lead to changes in foreign language teaching to meet the demands of 21st century language education

Keywords: Globalization and Digitalization, 21st-Century Language, 21st Century Language Skills.

CMEs Evolve in The Interplanetary Medium to Double Their Predicted Geo-effectiveness

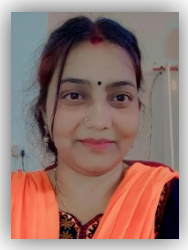
Dr. Shirsh Lata Soni
Department of Climate and Space Science, University of Michigan, MI-48109, USA
Email- shirshla@umich.edu

Abstract

We explore the impact of interactions between coronal mass ejections (CMEs) known as CME–CME interactions on Earth using remote-sensing and in situ observations and estimate the amplification of the geo-effectiveness of the individual CMEs by a factor of ∼2 due to CME–CME interactions. We present 3D reconstructions of interacting CMEs, which provide essential information on the orientation and interaction of the events. Additionally, we analyzed coronal evolution of CMEs and there in situ characteristics at 1 AU to explore the impact of interactions between CMEs on their geo-effectiveness. We analyzed CME interaction using white light data from LASCO and STEREO COR-A. The reported CMEs were reconstructed using the gradual cylindrical shell (GCS) model and simulated self-consistently with the physics-based 3D MHD model EUHFORIA (European Heliosphere Forecasting Information Asset). By running different simulations, we estimated the geo-effectiveness of both individual and interacting CMEs using an empirical relationship method for the disturbance storm index. The SOHO/LASCO spacecraft observed three CMEs erupting from the Sun within an interval of 10 hours during a very active period in early November 2021. There were two partial halo CMEs that occurred on 1 Nov 2021 at 19:00 UT and 22:00 UT, respectively, from the activeregion 12887 (S28W58), and a third halo CME occurred from AR 12891 (N17E03) on 2 Nov 2021 at 02:48 UT. By combining remote observations close to the Sun, in situ data at 1 AU, andfurther numerical analyses of each individual CME, we are able to identify the initial and interplanetary evolution of the CMEs. (i) White light observations and a 3D reconstruction of the CMEs show cannibalism by CME-2 on CME-1 and a flank interaction of CME-3 with the mergedCME-1 and CME-2 at 45-50 Rs. (ii) Interacting CMEs exhibit an increase in geo-effectiveness compared to an individual CME.

Keywords: CMEs, MHD, Geo-effectiveness.

Graphene-Reinforced Hybrid Polymer Nanocomposites-Based Biosensor Implementation for Environmental Remediation



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Abstract

Biosensor which is used in wide range of research areas is type of device which analyse chemical and biological reactions by responding with electrical output. In this process graphene has become a "miracle material" due to its chemical and physical properties and it synthesized in this process by native graphite powder (Black Lead) with slight moderation of Hummers method. Graphene has an electrical conductivity of 1,000s/cm and thermal conductivities 1,500 and 2,500Wm-1 k -1. Its tensile strength around 130 GPa due to nature of strongest material. Graphene has large electrochemical window of approx. 2.5V and it also have low charge transfer resistance around 6.5M Ω cm 2 . These qualities elaborate that it is best material for multifunctional fast sensors. For membrane formation PVB (polyvinyle butryl) is used. This copolymer is totally amorphous in nature. An additional, most important eminence of polymer based composite materials is that they can modify chemically to enhance their elasticity biocompatibility and reactivity. The novel nanocomposite membrane can be used for photocatalytic materials for organic pollutants degradation. This experimental study is focused on synthesis and catalytic activity of electrochemical biosensing polymer nanocomposites. In fact, there is many other fields where graphene-enhanced sensors are on the rise, such as microelectromechanical systems (MEMS) sensors, pressure sensors, pH sensors, environmental contamination sensors, gas sensors, DNA sensors and more.

Keywords: Reduced Graphene Oxide (r-GO), PVB, Electrical Conductivity; Electrochemical, Biosensor.

Standard Setting and Accreditation for School Education, Teacher Education and Reimaging Vocational Education in The Light of National Education Policy 2020

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Abstract

The global education development agenda reflected in the Goal 4 (SDG4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 - seeks to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030. Such a lofty goal will require the entire education system to be reconfigured to support and foster learning, so that all of the critical targets and goals (SDGs) of the 2030 Agenda for Sustainable Development can be achieved. In this presentation we will discuss some key aspects of Standard setting and accreditation for school education, Teacher Education and Reimaging Vocational Education in the light of National Education Policy 2020.

Keywords: National Education Policy 2020, Sustainable Development, Reimaging Vocational Education.

Micro and Nano sensor fabrication for Multidisciplinary Applications

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Abstract

Micro-electromechanical systems-based (MEMS) sensors are extensively employed in several industries such as food safety, medical, healthcare, environment, and aerospace. This includes a range of MEMS sensors for instance pressure, temperature, strain gauge, microphone, silicon oscillator, acceleration and angular velocity of inertial sensor), micro flowmeters, trace gas sensors, the theory of passive micro energy harvesters, space optical fiber sensors, research design, and manufacturing technology. Comparing micro- and nanodevices to their macroscale equivalents reveals numerous advantages. Miniaturization makes it possible to produce devices that are injectable, implanted, handheld, and portable. Nevertheless, a variety of opportunities for the investigation of chemical, biological, and physical processes at the cellular and molecular level have been made possible by both micro- and nanofabrication. The present talk includes an overview of micro and nano sensors, methods for their fabrications, market values, and future aspects. Besides, the ongoing work going on in my institutes will also be discussed.

Keywords: Micro-Electromechanical Systems, Biosensors, Additive Manufacturing, Fabrication Methods.

Natural Fibers based Eco-friendly Composites for Lightweight Applications and 3D Printing

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Abstract

In recent decades, fiber-reinforced composites (FRPs) have gained widespread use due to their exceptional strength-to-weight ratio. Traditionally, these FRPs incorporate synthetic fibers such as glass, carbon, and aramid. However, the disposal of these synthetic materials poses significant environmental hazards. Consequently, increasing environmental awareness has driven industries, researchers, and academics to develop FRPs using eco-friendly materials without compromising on strength properties. Natural fibers derived from plants have emerged as a promising alternative for reinforcement in polymer composites, attracting significant interest for their low density, lightweight, eco-friendliness, and considerable mechanical strength. Major automotive manufacturers like Ford and Mercedes have started utilizing these natural fibers in components such as dashboards and interior panels to support green initiatives. Numerous commercially available natural fibers, including jute, hemp, sisal, ramie, and PALF, are now used as reinforcements in polymer composites. However, the rising demand and scarcity of raw materials necessitate the identification of new lignocellulose fiber sources. This presentation addresses the surface and chemical modification techniques of natural fiber composites, as well as the processing and testing methods for these materials.

Keywords: Natural Fibers, Chemical Treatment, Characterization Techniques.

Role of Generative-Artificial Intelligence in Education

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Abstract

Generative AI, a cutting-edge technology, has revolutionized various industries by enabling machines to create content that resembles human-generated work. It encompasses a wide range of applications, from text generation to image synthesis and even music composition. After mastering generative AI, individuals can pursue exciting job roles in fields such as artificial intelligence research, data science, and creative industries. The ever-expanding applications of generative AI promise a bright future for those who master this technology, offering opportunities to shape how we interact and create content in the digital age. Some of the top job roles include:

- AI Researcher, where you can delve deep into the development of advanced generative models
- Data Scientist, using generative AI to extract valuable insights from data
- Content Creator, harnessing generative AI for innovative storytelling
- AI Ethics Consultant, addressing the ethical implications of AI-generated content

Generative AI is a type of artificial intelligence technology that can produce various types of content, including text, imagery, audio and synthetic data. The recent buzz around generative AI has been driven by the simplicity of new user interfaces for creating high-quality text, graphics and videos in a matter of seconds. Generative AI refers to deep-learning models that can generate high-quality text, images, and other content based on the data they were trained on. Generative AI models use neural networks to identify the patterns and structures within existing data to generate new and original content. One of the breakthroughs with generative AI models is the ability to leverage different learning approaches, including unsupervised or semi-supervised learning for training. This has given organizations the ability to more easily and quickly leverage a large amount of unlabeled data to create foundation models. As the

name suggests, foundation models can be used as a base for AI systems that can perform multiple tasks. In the field of education, there is a growing interest in the use of Generative Artificial Intelligence to reshape the educational landscape. By leveraging machine learning models, these intelligent systems extract useful insights from vast amounts of data, making them capable of delivering highly individualized content. They can analyze a learner's proficiency level, learning style, and pace, and then tailor the study material accordingly. Whether a learner prefers visual aids, textual content, or interactive modules, Generative AI can adapt its content generation strategies to meet distinct preferences and learners' needs. This ensures an elevated engagement level and enhanced comprehension, highlighting its potential to transform traditional teaching methodologies.

Keywords: Digital, Graphics, Networks, Neural and Synthesis.

A Psychological Probe- Literature A Lens to Human Behaviour: A Quotidian Study

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Abstract

The aim of this lecture is to highlight the diverse dimensions of literature, demonstrating its relevance across various fields. Recent developments underscore the expanding role of literature in engaging with disciplines such as archaeology, science, psychology, medicine, industry, and ecology. This lecture provides a critical examination that explores the myriad facets of literature, encompassing areas such as blue narratives/Oceanic Literature, Petro fiction, Digital narratives, Graphic Narrative, Adolescent and Youth Literature, Psychology Literature, Incarcerated Literature, and Resistance narratives. Additionally, literature has made significant inroads into domains like Medical Humanities, War and Trauma Literature, and Eco narratives.

In this study, I attempted to delve into the intricate connections between literature and human behaviour, employing a psychological lens to illuminate the nuances of everyday life. By examining the quotidian aspects of literature, we uncover profound insights into the intricacies of human psyche and behaviour. Through this psychological probe, the lecture navigates through the narratives, characters, and themes presented in literature, uncovering layers of meaning and understanding that shed light on the complexities of human nature. This lecture serves as a testament to the power of literature as a lens through which we can gain invaluable perspectives into the depths of human behaviour, offering a profound journey of exploration and discovery.

Keywords: Psychological Probe- Literature, Human Behaviour, War and Trauma Literature.

Physical, Dielectric and Mechanical Characterization of Bio Waste Dispersed Polymeric Composite for Sustainable Development

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Abstract

Increased consumer awareness and strict environmental norms increased the demand of Natural fiber composites. Bagasse fibers available in plenty as an agro-residue and bio composites derived from such renewable resources offer potential for scale-up and value addition. Natural fibers reinforced polymer composites have gained more interest because of their biodegradable, light weight, less expensive sources, easy processing, high specific modulus and also environmentally friendly appeal. This paper presents an overview of a study aimed at showing on how the bio-composites which is bagasse fibers combined with resins as an alternative of bagasse-fiber-based composites panel. Transforming bagasse fibers into panel products provides a prospective solution. Bagasse-fiber-based epoxy composites offer potential as the core material replacing high density and expensive wood-based fiberboard. After being altered or treated with an alkali, biodegradable composites reinforced with bagasse fibers were created, and their mechanical qualities were also examined. Handlay up method is used to prepare composite panels. Physical and mechanical characterization will be done of these composites' specimens for evaluation and mechanical analysis of these composites.

Keywords: Natural fibers, Polymer, Composites, Technological Applications.

Polymer/Ceramic Dielectric Composites for Energy Storage and Conversion Application

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Abstract

Miniaturization of electronics devices creates a strong desire to place capacitors onthe circuit board in the form of integrated passive components. To realize this, lot of research is being carried out by several researchers to develop polymer ceramic composites with high dielectric constant. Need for high dielectric constant materials have been driven by the continuous demand for miniaturization of electronic devices. To fulfil this material with high or giant dielectric constant is required. Recently, $CaCu_3Ti_4O_{12}$ (CCTO) has attracted lot of scientific and technological interest because of its giant dielectric constant (ε_r ~10^4) with weak temperature/frequency dependence in a wide range of temperature (100–600 K) and frequency. High density, brittleness and challenging processing conditions are few drawbacks which impede its use as high-k materials. So polymer ceramic composites have become a promising material for these applications. As they possess hardness, stiffness and high dielectric constant of ceramics and the flexibility, elasticity and low density of polymers. In the present work, we investigated the structural and dielectric properties of Poly (vinylidene fluoride)/modified CCTO composites.

Extrusion process was used to prepare high dielectric constant ceramic reinforced PVDF composites. The structure and morphology of the composites were characterized using X-ray diffraction and scanning electron microscope. SEM micrographs show that homogeneous distribution of ceramics has taken place in PVDF matrix with small trails of agglomeration. Tensile tests were performed to measure Young's modulus which increases significantly in composites in presence of ceramic filler. Dielectric measurements were carried out between frequencies 10^{-2} to 10^6 Hz using four probe Novocontrol set up (ZG4) from room temp to 120°C. With addition of CCTO there is substantial increase in the dielectric constant of matrix PVDF. Dielectric loss in composite slightly increases in presence of CCTO.

Keywords: Polymer, Ceramics, XRD, SEM.

Abstracts of Delegates

Abstract Id: ETRD24101

Developments in Accounting Information Systems: Prospects and Difficulties for MSMES

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Abstract

A company's accounting information system, which unifies data from all divisions, assists decision-makers in making fast, correct judgments based on the information it gathers and retains. In the current digital age, when most corporate transactions take place online, the necessity of AIS has increased. AIS has made a significant contribution to the company's data collection, archiving, retrieval, and processing during pandemics when digital means are the only way to keep the firm operating. A growing number of businesses are using AIS as a tool to increase productivity because of its low cost, quick reporting, and data integration capabilities. Over the last twenty years, AIS has experienced significant advancements in technology. New developments in digital accounting solutions are emerging now, including data analysis, cloud accounting, artificial intelligence, and mobile accounting. All organizations, regardless of size, must implement digital accounting solutions in order to obtain accurate financial data, make decisions more quickly, comply with the law more easily, maintain solid cash flow, and conduct business without hindrance. Based on a review of the literature, MSMEs are contributing an increasing amount of the Indian GDP annually. In India, MSMEs account for approximately 49% of exports and are expected to surpass 60% in the near future. Even though some MSMEs were forced to close owing to pandemics, they are rebounding more quickly. Today, MSMEs must embrace the digital age in order to continue operating their businesses and to recover from past setbacks. The latest AIS trends, as well as the opportunities and difficulties MSMEs have in implementing digital solutions, are the main topics of this research report. MSMEs will constantly be faced with a difficult decision when deciding between the conventional accounting software, the traditional accounting approach,

and the modern accounting software with the latest trends. According to the report, MSMEs still lag behind in accepting impending improvements in the accounting industry, even if they have benefits in terms of meeting their daily requirements.

Keywords: MSMEs, Cloud Accounting, Trends in AIS, Artificial Intelligence.

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Abstract Id: ETRD24102

Applications of Nanotechnology in Soil Remediation

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Abstract

Soil is an important aspect of the environment because it provides crucial ecological benefits for life. However, urbanisation and fast industry have had negative consequences for the soil. In recent decades, soil has been contaminated by hazardous and toxic pollutants produced by anthropogenic sources such as industrial chemical waste disposal, abandoned use of fertilisers and pesticides, and other potential chemical sources that cause soil contamination. For example, 187 million tonnes of fertiliser and 4 million tonnes of insecticides are used for agricultural crops globally each year, contributing to soil pollution In Europe, more than 0.5 million places were evaluated, with nearly 3.5 million sites judged to be significantly polluted. Soil pollutants include heavy metals, pesticides, mineral oil, and solvents. Heavy metals were discovered to be the most common source of soil pollutants, which was also the primary worry in many researches, due to their many origins, nonbiodegradability, and cumulative behaviour. An overview of soil contaminants across Europe, with heavy metals accounting for 35% of total pollutants identified in soil. The attention to the contaminated soil concerns has been raised with considerable worry since the contaminated soil has possible health implications to the human, ecological, agriculture, and environment. As urbanisation has progressed, human activities have grown, increasing the likelihood of soil contamination. The use of nanotechnology for soil remediation has become a major issue across the world as a means of eliminating toxins in soil. This paper will discuss the fate of contaminants in the soil environment; the mechanisms of nanotechnology with various types of nanomaterials for soil remediation; the advantages and disadvantages of nanomaterials to terrestrial organisms, human health, and the soil environment; and the challenges of using nanotechnology for soil remediation.

Keywords: Soil, Nanotechnology, Toxic Pollutants.

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Abstract Id: ETRD24103

To study of solar cooking process and solar cooker

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Abstract

The two basic commodities that provide the fundamentals of all human activity for an acceptable and sustainable quality of life are energy and fresh water. Energy is the source of growth, as well as a necessary component of economic and social progress. Renewable energy has been hailed as the key to a long-term energy future in recent years. It has numerous positive effects on global environmental, economic, and political challenges. Because of its ease of construction and direct conversion of solar energy into heat, the evolution of the solar cooker interests not only global researchers but also the general public. It is proposed as a novel solution to the world's dilemma of depleting fuel wood sources and other environmental issues related with increased cooking fuel demand. The usage of a solar cooker results in significant time and fuel savings, as well as greater energy security for rural homes who rely on commercial fuels.

Keywords: Solar Cooking, Solar Geometry, Solar Thermo Electricity Device, Dye Sensitized Solar Cell (DSSC), Concentrated Photovoltaic Cell (CPC), Photovoltaic solar panels.

Abstract Id: ETRD24104

A Comprehensive Overview on Advancements in Green Technologies in Indian Cities

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Abstract

Green Technologies are pivotal in addressing environmental challenges and transitioning towards sustainable energy systems. Additionally, enhancing scalability and cost-efficiency remains imperative for widespread adoption. Improving the efficiency of renewable energy conversion processes and minimizing their environmental impact are ongoing priorities. Integration of diverse green technologies into existing infrastructure requires innovative approaches to ensure seamless compatibility. Interdisciplinary research, robust investment, and collaborative efforts are essential to overcoming these challenges. These advancements hold the potential to revolutionize energy production, distribution, and consumption patterns, fostering a cleaner and more sustainable future. By addressing technological barriers and harnessing innovative solutions, Green Technologies can play a pivotal role in mitigating climate change and promoting global environmental stewardship. This paper provides a comprehensive overview of various green technologies, their applications, benefits, and challenges. Additionally, the paper discusses future directions and the importance of addressing barriers to accelerate the adoption of green technologies for environmental sustainability.

Keywords: Green Technologies, Efficiency, technological barriers, environmental Sustainability.

Abstract Id: ETRD24106

Effect Of Cadmium Chloride and Mercuric Chloride for Acute (72h) On Histopathlogy of Fresh Water Cat Fish C. Batrachus

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Abstract

The present paper deals with the effect of cadmium chloride and mercuric chloride for acute (72h) for investigation of histopathological changes in Indian fresh water cat fish *C. batrachus.* The organisms will have internal mechanism to transport Cd around the body so as to manufacture such vital proteins at the point when Cd in water ascends to a level; the amount entering the body of organism through gills surpasses the prerequisite for this metal. It was originally believed that the direct toxic action of Cd on fish was no precipitate the layer of mucus on the surface of the gill causing suffocation. The blend of nutritional metal cadmium chloride and mercury chloride at all can penetrations and time intervals caused various effects in different organs of uncovered fish.

Keywords: Effect, Vital Protein, Manufacture, Precipitate, Toxic Action.

Abstract Id: ETRD24107

The New Education Policy and Legal Education

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Abstract

The new National Education Policy-2020 has been adopted by the Indian Union Cabinet., It aims to introduce vast changes to the Modern Indian law imparting education system, from law school to Higher college-level law school. Its goal is to make "India a global legal knowledge superpower." The Cabinet-approved New Legal Education Policy is only the third major revision to India's legal education framework since independence. The quality of the nation's rule of law is closely correlated with the profession of the wise lawyer, or legal education, which also connects to legal education. The current rule of law prevailing in the society and keeping faith in the law and legal education serve as a vehicle for instilling legal values in the following propagation. Regarding The significance of permitted law education in India for the establishment of a state free from danger and threat, stability, comfort, and happiness of the nation need to make guaranteeing its quality a priority. The 2020 policy has undergone several improvements and reforms that perhaps have a significant Collision on Judicial education. The Indian attorney at law is regarded as one of the most prestigious in the world; legal education has a responsibility to keep this position. To full-fill that dependable is critical to perceive that morality and real benefit should be incorporated into legal education. The 2020 NEP included a praiseworthy rectification to incorporate these advantages into the modules while recognizing the end objective goals of Judicial education and Judicial research. According to the regulation, state institutions that offer legal education shall take both English and the mother tongue of the land where the Indian Judicial school is located. It has been hypothesized that the education industry in India would undergo transformation by assuring the comfort of legal education for law students. It should be highlighted that based on how this effort has been received, it will oblige by shortening the time it takes for a lawful resolution to be made when translation is required.

Keywords: NEP 2020, Legal Education, Education System.

Abstract Id: ETRD24108

Ionospheric Responses to Solar Flares: An Analysis of Ion Composition Changes During Moderately High Solar Activity in January 2023

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Abstract

This set of reports analyses the ionospheric composition and effects of solar flares in January 2023 during periods of moderate to high solar activity. On January 6th, the solar zenith angle was 109.5 degrees, solar radio flux F10.7 was 119.2, and sunspot number was 70.2. On January 9th, the solar zenith angle reached 166.9 degrees, F10.7 was 119.4, and sunspot number was 70.4. On January 10th, the solar zenith angle was 137.1 degrees, F10.7 measured 119.4, and sunspot number remained at 70.4. The ionospheric data reveals typical profiles dominated by molecular ions at lower altitudes and lighter atomic ions higher up. An O+ layer peaked around 180 km. Comparison to quiet conditions shows impacts from the M-class and X-class flares on these days, including an enhanced and broadened O+ layer, increased molecular ions at 400-600 km, and temporary depletions of lighter ions around 500 km. These ionospheric changes match the flare timing and can be explained by flare-driven reactions. Geomagnetic activity also increased, signalling solar-terrestrial coupling. Together, the data provides evidence of complex atmospheric changes from solar flares spanning the electromagnetic spectrum during periods of moderately high solar activity. Analysis of ion composition gives insights into fundamental ionospheric processes and improving space weather prediction capabilities.

Keyword: - solar radio flux F10.7, solar zenith angle, sunspot number, Solar Flare.

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Abstract Id: ETRD24110

The Symbolic Landscape: A Study of Kalidas' Abhijnanasakuntalam Through the Lens of Ecocriticism

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Abstract

Literature is a means of sharing information, encouraging cross-cultural communication, minimizing differences, and contributing to the concept of 'Vasudhaiv Kutumbkam' which means one Earth: one Globe and one Family.

Classical Indian Literature showcases the divinity of nature and its bond with human beings. The inter-dependency of human beings and the environment led to the growth and prosperity of both. In ancient times, the manifestation of nature has been observed in varied forms such as humans, flora, and fauna, mountains, rivers, oceans etc. The Indian culture and its ideologies had the ability to connect these varied forms of nature with the Divine. In fact, religion was associated with worshipping nature in some form or the other to establish the bond between humans and the environment thereby leading to their healthy living style.

Today, the growing population, climate change, melting of glaciers, Global warming, low water levels leading to scarcity of water at many places, extinction of many species and the spurt in fatal diseases have been a deep blot on the whole Earth. If the problems persist, the day is not far when human beings will have to pay their price by sacrificing their own life as well as the lives of near and dear ones. Therefore, it is very important to spread awareness amongst people and work for the protection and preservation of Nature. Nature and its embodiments must be utilized sparingly by human beings to make this earth worth living for the forthcoming generations.

In the same context, this paper delves deep into the study of Kalidas' *Abhijanshakuntalam* and aims to explore the vivid portrayal of nature in his works. The ecocritical study of Kalidas' *Abhijanshakuntalam* reawakens the readers to look for their roots in Indian culture. This magnum opus work lays emphasis on the preservation of nature as well as its restoration in ensuring the survival of human beings in the times to come.

Keywords: Ecocriticism, Flora, and Fauna, Vasudhaiv Kutumbakam, Cross-cultural communication, Global Warming

Abstract Id: ETRD24111

Global Challenges in the 21st Century: A Critique

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Abstract

In the 21st century, the world is facing many challenges. These challenges are brought upon mankind by man himself. In his greed to bring this earth under complete control, modern man commits crimes like Deforestation, Environmental Pollution, Encroachment, and Illegal Mining, which leads to natural disasters like flooding, global warming, loss of space, depletion of resources etc. Climate Change is a major issue faced by the world in the 21st century. Unless the developed and developing countries put their heads together and come out with some consensus, things are not going to get better in the days to come.

Population Explosion is a major problem leading to so many complications in society. India has the dubious distinction of world's most populated country at present. In this scenario, it is imperative to control population and ensure that resources don't get depleted soon. Prices have skyrocketed to such an extent that people are made to depend on freebies given by the government. Unfortunately, no political party has the wherewithal to come out in the open and speak against the burgeoning population in our country.

Another major problem faced by our country is that water Levels are going down at an alarming rate. As a result, it is a common sight to see serpentine queues down South waiting patiently for portable water. Though the northern part of the country is blessed with perennial rivers, the rivers in the south are seasonal. So, when summer is at its peak, it is the southern part of the country that faces the brunt of the water problem. This paper addresses the vexing problems faced by not only India but also the world as a whole in general.

Keywords: Deforestation, Environmental Pollution, Global Warming, Loss of Space, Climate Change.

Abstract Id: ETRD24113

The Fragile Ecosystems in Peril: Examining and Addressing the Unacquainted Menaces to Coral Reefs

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Abstract

Coral reefs are often referred to as the "rainforest of the sea", as they are the most diverse and crucial underwater ecosystem that supports biodiversity. These massive structures are home to many maritime organisms. Coral reefs provide coastal protection and contribute to economic activities such as tourism and fisheries. While they are known to face challenges like climate change, water pollution, ocean acidification and overfishing, this research paper delves into the unacquainted or lesser-known threats or menaces that coral reefs encounter, including noise pollution, light pollution, chemical pollution, microplastics, underwater infrastructural development, and displacement to substrates and sediments. Noise pollution primarily emerges from human activities such as shipping and recreational boating disturbing the basic behaviors of marine organisms, including communication and feeding. Light pollution alters the natural light cycles, impacting the processes of photosynthesis and reproduction. Chemical pollution from industrial discharges and agricultural practices incorporates contaminants that can lead to coral bleaching. Microplastics, tiny plastic particles penetrating in marine environments, pose ingestion risks to marine life and can contribute to ecological imbalance on coral reefs. Underwater infrastructure development, including pipelines, cables and stages can physically harm coral reefs through coordinate contact or by blending up dregs that settle on corals, blocking daylight and repressing coral development. Displacement of substrates and sediments from coastal development and dredging activities can suffocate coral reefs and disrupt benthic habitats. Mitigation tactics for these unacquainted threats involve the comprehensive use of Environmental Impact Assessments [EIAs], forming Marine Protected Areas [MPAs], promoting Best Management Practices [BMPs], forming and implementing strict rules and

regulations, raising public awareness about the importance of coral reefs, initiating and supporting coral reef rehabilitation and restoration projects, using safe and innovative technologies, investing In order to preserve coral reefs and ensure their long-term sustainability, it is crucial that we engage in scientific research and monitoring programs, as well as foster international cooperation. To achieve this, we must take steps to understand and address unfamiliar threats that may pose a risk to these delicate ecosystems. This can be achieved by implementing comprehensive mitigation tactics and encouraging collaboration at the local, regional and global levels. By doing so, we can work towards protecting these invaluable ecosystems for future generations.

Keywords: Fragile Ecosystems, Coral polyps, Unacquainted Threats, Anthropogenic Activities, Maritime, Mitigation Tactics.

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Abstract Id: ETRD24114

Gold Share Price Analysis and Predictions Using Machine Learning Approaches

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Abstract

Nowadays gold price prediction, consider consulting financial news websites, commodities markets, or specialized services dedicated to gold price tracking to access the latest gold price data. Data mining gains greater utility and value when applied to larger datasets and as users accumulate more experience. Increasing data volume should yield a richer trove of insights and intelligence. Additionally, as users become more proficient with the tools and gain a deeper understanding of the database, their explorations and analyses can become increasingly creative. This paper considers gold prices-related share datasets like Date, Close/Last, Volume, Open, High, and Low. The machine learning approaches are used to analyse and predict the dataset using Linear Regression, Multilayer Perceptron, SMOreg, random forest, random tree, and REP tree**.** Numerical illustrations are provided to prove the proposed results with test statistics or accuracy parameters.

Keywords: Machine Learning, Gold Prices, Decision Tree, Correlation Coefficient, And Test Statistics.

Abstract Id: ETRD24115

Study on Chemical and Physical Properties of Soil for Wheat Production

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Abstract

Agricultural development strategy for India in the 21st century must be through increasing productivity of the land under cultivation, with reduced costs of production and higher use efficiency of inputs with no harm to the environmental quality.

In this research, an endeavor has been made to study Chemical and Physical parameters as an attempt to provide an index of nutrient availability with an updated understanding of factors that influence the production economic of soil. High yield of crops requires an abundant supply of nutrient elements. Soil is an important factor in farming and cultivation. Thus, the physical study of soil is very significant because both physical and chemical properties which bear upon the soil productivity. This, physical and chemical study of soil is based on various parameters like color, texture, consistency, porosity, pH, cation exchange capacity, redox potential, electrical conductivity. These parameters are important as they influence nutrient availability, plant growth, biological activity. The soil usually has the characteristics of low tensile strength and is highly dependent on environmental conditions.

Soil quality and composition have significant effects on wheat growth and development. Poor soil conditions can cause various negative side effects on wheat crops. Like Nutrient efficiency, Water Stress, Soil pH Imbalance, Pest and Disease Issues, Toxicity Weed Growth Compaction etc.

Keywords: Wheat Production, Soil Health, Toxicity.

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Abstract Id: ETRD24116

Exploring the Rich Tapestry of Kashmiri Folk Theatre

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Abstract

Kashmiri folk theatre, which is firmly ingrained in the region's cultural fabric, provides a dynamic portrayal of Kashmiri society, history, and traditions. This abstract seeks to investigate the various forms and qualities of Kashmiri folk theatre, emphasizing its historical significance, subject diversity, and performance styles. From the ancient rites of Bhand Pather to the colorful folk dramas of Wanvun, the spectrum of Kashmiri folk theatre is large and diverse. This concept aims to uncover the cultural intricacies buried in these theatrical traditions by analyzing its themes, such as love, social justice, and religious devotion. Furthermore, it investigates the impact of socio-political changes and modernization on Kashmiri folk theatre, addressing both difficulties and chances for its preservation and development. Overall, the abstract provides insight into the wonderful realm of Kashmiri folk theatre, highlighting its creative richness and cultural value.

Keywords: Kashmiri Folk Theatre, Cultural Fabric, Cultural Value.

Abstract Id: ETRD24118

Impact of Cyberpunk: Review of Language and Literature

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Abstract

This research paper explores the impact of the cyberpunk genre on contemporary language and literature, emphasizing its role in shaping narrative structures and linguistic expressions. Cyberpunk, a subgenre of science fiction rooted in dystopian futures dominated by advanced technology and corporate hegemony, offers unique insights into societal anxieties and ideological conflicts. By examining seminal works such as William Gibson's "Neuromancer" and Neal Stephenson's "Snow Crash," this paper highlights how cyberpunk has infused literature with new thematic complexities and linguistic innovations, reflecting broader cultural and technological shifts.

Our analysis focuses on the evolution of cyberpunk's narrative techniques, including its use of jargon, digital lexicon, and fragmented storytelling, which mirror the chaotic, interconnected digital landscapes the genre often portrays. Additionally, the study delves into how cyberpunk challenges traditional literary forms and themes, proposing alternative perspectives on identity, humanity, and social order. This paper also considers the genre's influence on post-cyberpunk literature and other media forms, demonstrating its enduring relevance in discussions about the human condition in the digital age.

Through a comprehensive review of literature and linguistic analysis, this study underscores cyberpunk's critical role in expanding the boundaries of literary creation and interpretation in the digital era, suggesting avenues for future research in narrative theory and sociolinguistics.

Keywords: Cyberpunk, Neuromancer, Narrative Techniques, Digital Lexicon, Post-Cyberpunk, Sociolinguistics, Literary Innovation, Science Fiction, Cultural Impact, Technological Dystopias.

Abstract Id: ETRD24119

Reinterpreting Modern Women through Selective Ancient Scriptures

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Abstract

This work addresses the intricate relationship between modern conceptions of women and the depiction of women in ancient texts. It investigates how selective readings of ancient writings influence modern perceptions and treatment of women. This study examines how women are portrayed in diverse cultural contexts and the consequences for modern gender dynamics by evaluating major passages from various religious and philosophical books such as the Vedas etc. It emphasizes instances in which women are portrayed as powerful and prominent figures, as well as those in which they are excluded or repressed. Furthermore, it analyzes how modern feminist movements use and reinterpret ancient writings to promote gender equality and women's empowerment. This abstract uses a comparative study to give light on the various perspectives on women across historical times and cultures, providing insights into the ongoing debate about gender roles and rights.

Keywords: Women's Empowerment, Feminist Movements, Cultural Contexts.

Abstract Id: ETRD24120

The Evolution of Gender Role: A Comparative Analysis of Male and Female Characters in Jane Austen's Novels

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Abstract

This paper explores the evolution of gender roles in the selected novels of Jane Austen through a comparative analysis of male and female characters. Grounded in feminist literary theory and historical context, the paper investigates how Austen's works depict the shifting expectations and societal norms surrounding masculinity and femininity during the late 18th and early 19th centuries.

Drawing upon a selection of Austen's novels, including "Pride and Prejudice," "Sense and Sensibility," and "Emma, Prejudice and Northanger Abbey" the paper employs close textual analysis to examine the portrayal of gender roles across various contexts and character dynamics. By comparing the experiences of male and female characters, the study seeks to uncover nuanced insights into the ways in which gender expectations influence behavior, relationships, and societal roles.

The paper begins by providing a comprehensive overview of the historical and cultural context of Austen's era, highlighting the rigid gender roles and expectations prevalent in Regency England. It then delves into an analysis of male characters, exploring their portrayal as embodiments of patriarchal authority, financial responsibility, and social status. Additionally, it examines how male characters negotiate societal pressures and expectations, and the extent to which they challenge or conform to traditional gender norms.

On the other hand, the paper also analyzes female characters, focusing on their depiction as subjects of marriage, domesticity, and social propriety. It investigates how female characters navigate the limitations and opportunities imposed by their gender, and how they assert agency within a patriarchal society.

Through this comparative analysis, the paper uncovers the complexities of gender roles in Austen's novels, revealing the tensions between societal expectations and individual agency. By shedding light on the evolving representations of masculinity and femininity, this research contributes to a deeper understanding of gender dynamics in literature and society. Ultimately, it underscores Austen's enduring relevance as a chronicler of human relationships and societal norms.

Keywords: Comparative Study, Female Characters, Jane Austen, Pride and Prejudice.

Abstract Id: ETRD24121

From Screen to Society: The Influence of Female Characters in Cinema on Real-world Gender Dynamics

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Abstract

This research paper investigates the multifaceted relationship between the portrayal of female characters in cinema and its impact on real-world gender dynamics. Drawing on feminist film theory, audience reception studies, and sociocultural analysis, this study explores how cinematic representations of women both reflect and shape societal attitudes towards gender roles, equality, and empowerment. Through a comprehensive literature review, this paper examines the historical evolution of female characters in cinema, from traditional stereotypes to more complex and diverse portrayals. It delves into the ways in which these portrayals reflect and perpetuate societal norms and values, including beauty standards, sexuality, intelligence, and agency. The influence of female characters on audience perceptions and behaviors, exploring how identification with cinematic representations can internalize gender norms and influence attitudes towards gender roles, power dynamics in relationships, and career aspirations. This paper highlights the nuanced ways in which cinema shapes and reflects real-world gender dynamics. It also discusses the potential implications of these findings for filmmakers, policymakers, educators, and activists working towards gender equality and social justice. Overall, this paper contributes to a deeper understanding of the complex interplay between media, culture, and gender, emphasizing and the need for diverse and empowering representations of women in cinema.

Keywords: Women in Cinema, Social Justice, Gender Equality.

Abstract Id: ETRD24122

Wastewater Treatment Using Constructed Wetland

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Abstract

Municipal wastewater, wastewater from petroleum refineries, agricultural drainage, acid mine drainage, etc. have all benefited from the use of constructed wetlands (CW), an ecologically benign method for purging pollutants from wastewater. The science of microbiology has expanded at an astounding rate during the last decade. Focusing on developments in the previous three decades, this paper provides a comprehensive assessment of important facets of CW, including its many forms, the contaminants & their removal mechanisms, degradation routes, difficulties, possibilities, materials, applications, and theory. Key unresolved issues in CW have also been framed in an effort to both foresee and enable future progress in the area of CW. The rapidly expanding CW sector will benefit from these guidelines, which have been created via the standardization of essential design components. In an attempt to standardize the rapidly expanding CW community, this study summarizes the present state of the art of CW technology assessment and offers definitions & performance metric terminology.

Keywords: Constructed Wetland, Wastewater, Plants, Microorganisms, Remediation, Degradation.

Abstract Id: ETRD24123

Climate Change and Environmental Sustainability

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Abstract

Climate change is one of the most pressing global issues of our time, with significant impact on natural system, human health, and the economy. this paper aims at assessing the effects of climate change on environmental sustainability. this sustainability constitutes major problem in many countries and regions around the world that experience industrial pollution degradation of land as well as natural disasters caused by the global warming. businesses are major contributors to greenhouse gas emissions, and they are also affected by the impacts of climates change to address these challenges, many businesses have started to adopt sustainable practices. the result of this study provides valuable insights into the relationship between climate change and sustainable business practices and the need for continued research in this area to better understand the most effective ways to promote and support sustainable business practices.

Keywords: Climate, Degradation, Sustainability Emissions, Adopt.

Abstract Id: ETRD24124

Inhibition of Mild Steel Corrosion by Plant Extract in Acidic Medium

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Abstract

At room temperature, the effects of corrosion and plant extracts on mild steel specimens immersed in 0.5 M sulfuric acid were examined using gravimetric and metallographic methods. As 'green' inhibitors, different amounts of Cannabis leaves extract plant and tobacco extracts were utilized. The results of the weight loss method, computed corrosion rates, inhibitor efficiencies, and metallographic observations from metallurgical microscopy are all presented in this study. The addition of various quantities of plant extracts resulted in a significant reduction in weight loss and corrosion rate of the test samples. The complex chemical contents of the plant extracts produced a protective coating on the steel's surface, which was thought to be the cause of the apparent corrosion inhibition. Tobacco extract and Cannabis leaves extract were shown to be more effective in protecting mild steel.

Keywords: Metallographic Methods, Cannabis Leaves, Green' Inhibitors.

Abstract Id: ETRD24127

Superhydrophobic UV-Resistant Coatings Using Nanomaterials for The Protection of Wood

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Abstract

Wood is a lignocellulosic material comprising cellulose, hemicellulose, and lignin as the main constituents and is widely used by human for both structural and non-structural outdoor and indoor purposes. However, being a lignocellulosic material, wood suffers from three major modes of degradation, i.e., UV-induced degradation, decay and rots. Wood is hygroscopic in nature and has a naturally porous structure, containing several polar hydrophilic -OH groups and has a porous geometry which makes it significantly hydrophilic in nature and therefore readily absorbs water, thus increasing its moisture content. This increased moisture content can affect the dimensional stability of wood as well as make it prone to biological degradation, decay etc. Therefore, restricting the access of water into the pores by inducing significant hydrophobicity into the wood surface and the subsequent prevention of wood-water interaction is very important. Another major degradation is caused by UV radiation. The lignin absorbs the UV light and gets oxidized, thus forming quinones, and hence discoloration or color-darkening of wood occurs, which is termed photo-degradation. To prevent these problems, the wood surface must be made hydrophobic and UV-resistant which can be very well achieved using nanoparticles. Zinc oxide (ZnO), cerium oxide (CeO_2), titanium dioxide (TiO_2) nanoparticles are known to have UV-shielding properties and also help in increasing the surface roughness due to their nanoscale size and large surface area. When such nanoparticles are coupled with low surface energy materials (like silane derivatives), the resultant surface obtained becomes superhydrophobic and UV-resistant, thereby protecting the wood surface from potential degradation.

Keywords: Nanoparticles, Superhydrophobic, Photo-degradation, Coating, UV-resistant.

Abstract Id: ETRD24130

Translanguaging Pedagogies and The Learning of English in The Multilingual Indian Classroom: A Case Study Based on English Learners and Instructors of India

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Abstract

In this paper, I intend to highlight and discuss in detail the significance and implications of translanguaging in the Indian classroom. In recent years, there has been growing interest in translanguaging as a pedagogical approach that can support language development and academic achievement for multilingual learners. This research paper provides an overview of the key concepts and theoretical frameworks that underpin the study of translanguaging, including its roots in sociolinguistics and critical applied linguistics. The paper also reviews empirical research on translanguaging in English learners and teachers in India. Translanguaging supports the fact that the brain treats all languages together so that two bilinguals of the same languages can be switching their languages in a conversation. A survey was performed to scrutinize the benefits and limitations of translanguaging in a classroom. Students and teachers were asked about their language preferences in class. The research was held in classrooms of Indian towns and include a case-study procedure and analysis of findings. Findings suggest that the group of students display neutral to positive attitudes towards definitions and understandings of translanguaging in the classroom. The analysis shows intense variations between monolingualism and multilingualism preferences for a lesson. The students who share the native language are inclined towards translanguaging as it speeds up their comprehension whereas the students who do not share the native language prefer English as the standard language.

Keywords: Indian classrooms, translanguaging, code-switching, ELT, monolingualism, multilingualism, native language.

Abstract Id: ETRD24132

Navigating The Research Landscape: A Comprehensive Approach to Research Methodology and Writing

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Abstract

In the research field, Research techniques are very important since they assist in methodically and systematically carrying out such studies and collecting relevant information to respond to questions or explore problems. Over the years, there has been an increase in the methodologies used by researchers when formulating, implementing, or evaluating their research studies. This paper investigates research methodologies, protocols, and tools used by researchers in formulating strategies, undertaking studies, executing investigations, and appraising the same. To ensure credibility, it is vital that one employs clear research designs throughout all phases of a study. The text compares methodologies across different academic fields and research methods, stressing the importance of openly publishing research methods so they can be understood and appraised by others.

The importance of research methodology in directing the systematic exploration of research questions, as well as in assisting in the preparation of studies, data collection and analysis, are highlighted by it on one hand and on the other hand. This study discusses features, purposes, values, and areas that call for application when choosing between each of the two styles of research with data derived from different sources including surveys, experimentations, content analysis to mention but a few.

Lastly, it delves into conceptual-versus-empirical research, showcasing the theories and evidences upon which these methodologies are grounded and how they help push out the boundaries of knowledge. This study provides valuable insights in an intricate area, through elaborate examination of a variety of study tools that would act as a blueprint steering the experimenters and developers through intricacies involved in the experimentation field and progression of information.

Keywords: - Research method, descriptive, analytical, quantitative, qualitative, conceptual, empirical.

Abstract Id: ETRD24133

Emerging Trends in Research and Development: Digital Literature in English

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Abstract

Many of us have been using social media platforms like Twitter, Facebook LinkedIn, WhatsApp, Instagram, etc., in this digital era Sometimes we come across the thoughts, feelings in the form of poetry, quotes, short notes, etc., of a user in a particular platform. Some of these can motivate, encourage, educate, and entertain us. Some of these contents can be applicable to our own situations. Some may blog and write short stories, poems and publish those content in social media platforms which were open to their readers to read and criticise in the form of comments. Online publishers can read those comments and improvise their writings. These kinds of writings can be known as digital literature.

According to Wikipedia, Digital literature otherwise called as electronic literature is an emerging genre of literature which is written on computer, tablets, mobile phones and has the capabilities of multimodality, interactivity, and algorithmic text generation in a aesthetic way to study and enjoy the literature.

As generations have passed, the medium of publishing books have been changing. From manuscripts which were copied on palm leaves and handwritten papers to printing press which made publishing of books easy and from printing press to digital publications, where publications are done through social media platforms.

In this paper, we are going to study about digital literature, what are the social media platforms used by the authors and how they are reaching out their audiences.

Keywords: Digital literature, manuscripts, social media, publications, multimodality, authors and audiences.

Abstract Id: ETRD24134

Exploring The Most Significant Divergence Measures

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Abstract

When measuring the distance or likeness between a small number of discrete or continuous probability distributions or likelihood dispersions, divergence measures are used, which makes creating a new measure always desired. The current study has established a number of parameterized divergence measures, six in all, with each one has a limitless number of components. It is also vital to assess the features of these measurements as well as a few of their interactions with other measures. Additionally, a pictorial comparison is made for better understanding.

Keywords: Parametric convex functions, Csiszar's divergence measure, New divergence measures, Relationships both within and between, Image comparison

Abstract Id: ETRD24135

Variations In Cosmic Ray Intensity Associated with Sunspot Numbers and Tilt Angle During Solar Cycle 24-25

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Abstract

The objective of this study is to explore why the behavior of cosmic ray intensity fluctuates with Sunspot number and tilt angle considering long-term modulation for solar cycles 24 and 25; since 2008 to 2023. Three Cosmic Rays neutron monitors' lot of data observed by NM stations located at various cut-off rigidities were used for this study. Considering the Galactic Cosmic intensity and SSN, TA, we find out a straight forward linear association. Whereas cosmic ray intensity and SSN and TA appear to be strongly (positively) associated, they really exhibit an anti-correlation with each other. Highly positive a correlation coefficient of r = 0.94 was determined between TA and SSN. Throughout the study period, a very slight and positive association has been observed between NM -IGY, SOPO and SSN.

Keywords: Sunspot Number, Cosmic Ray Intensity, Tilt Angle, Solar Cycle.

Abstract Id: ETRD24137

Sartorial Stardom: Exploring The Cultural Influence of Indian Films on Indian Fashion Trends

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Abstract

This article tries to explore the significant influence of Indian movies on Indian fashion trends. Indian films have a profound and wide-ranging cultural influence on fashion trends that cut across national borders and cultural barriers. Indian film continues to reshape the fashion scene with its inventive costume design and visual storytelling, enthralling viewers with its originality and charm. The essay explores how the colorful and diversified world of Indian cinema molds sartorial preferences, impacts style decisions, and establishes new trends in apparel, accessories, hairstyles, and makeup, with a primary focus on Bollywood. Bollywood's depictions of characters and environments, from classic traditional clothing to avant-garde fusion dress, stimulate changing fashion perceptions. The work with actors and filmmakers frequently results in the production of classic looks that strike a chord with viewers and influence off-screen and on-screen fashion trends. Furthermore, the international distribution of Indian films has promoted intercultural influence in fashion choices among Indians living abroad as well as the Indian diaspora. The essay also emphasizes how regional influences, accessory trends, celebrity endorsements, and costume design all contribute to the nationwide fashion industry's impact on Indian aesthetics. This essay sheds light on the cultural crossings that shape modern-style landscapes by offering insights into the dynamic interaction between Indian cinema and Indian fashion through a thorough analysis.

Keywords: Indian Fashion Trends, Indian Cinema, Sartorial Stardom.

Abstract Id: ETRD24140

Organic Biocides Along with Low-Cost Additives as Wood Preservatives

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Abstract

Wood is one of the most obligatory building materials mankind have ever come across. It is used for numerous applications due to its exceptional strength to weight ratio and aesthetic appearance. Wood is susceptible to deterioration by various degrading agents such as fungi and termites. In order to upsurge its strength and durability they are impregnated with several kinds of chemicals known as wood preservatives. Numerous studies have been conducted to develop and evaluate different wood preservatives formulations such as copper azoles, copper-quaternary ammonium and chromate copper borate. Currently research is revolving around organic biocides such as azoles, benzimidazoles, carbamates, quaternary ammonium compounds etc. Azole based wood preservatives were first made available on the market in the 1990s. Among azoles, tebuconazole accounts for the largest share in the industries. Often used as foliar sprays in agricultural settings, propiconazole and tebuconazole are now combined to provide preservative formulations for wood. They have demonstrated good efficacy against wood-destroying fungus, including *Rhodonia placenta, Trametes versicolor, Coniophora puteana* and *Lenzites trabea*, in both aqueous and solvent-based formulations. These azole-based wood preservatives have good stability with respect to the treated wood, which protects from decaying fungi for a longer period of time. Azole wood preservatives are only effective against a small number of woods deteriorating agents such as fungi and insects however not effective against soft rot and molds. Therefore, in order to ensure broad efficacy, they are typically used in combination with low-cost additives which enhances biocidal activity with broader protection and increases service life of wood.

Keywords: Wood, Organic Biocides, Azoles, Wood Preservatives, Preservation, Tebuconazole, Propiconazole.

Abstract Id: ETRD24141

Deep Cardio Net: Efficient Left Ventricular Epicardium and Endocardium Segmentation Using Computer Vision

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Abstract

In the realm of medical image analysis, accurate segmentation of cardiac structures is essential for accurate diagnosis and therapy planning. Using the efficient Attention Swin U-Net architecture, this study provides DEEPCARDIONET, a novel computer vision approach for effectively segmenting the left ventricular epicardium and endocardium. The paper presents DEEPCARDIONET, a cutting-edge computer vision method designed to efficiently separate the left ventricular epicardium and endocardium in medical pictures. The main innovation of DEEPCARDIONET is that it makes use of the Attention Swin U-Net architecture, a state-of-the-art framework that is well-known for its capacity to collect contextual information and complicated attributes. Specially designed for the segmentation task, the Attention Swin U-Net guarantees superior performance in identifying the relevant left ventricular characteristics. The model's ability to identify positive instances with high precision and a low false positive rate is demonstrated by its good sensitivity, specificity, and accuracy. The Dice Similarity Coefficient (DSC) illustrates the improved performance of the proposed method in addition to accuracy, showing how effectively it captures spatial overlaps between predicted and ground truth segmentations. The model's generalizability and performance in a variety of medical imaging contexts are demonstrated by its application and evaluation across many datasets. DEEPCARDIONET is an intriguing method for enhancing cardiac picture segmentation, with potential applications in clinical diagnosis and treatment planning. The proposed method achieves an amazing accuracy of 99.21% by using a deep neural network architecture, which significantly beats existing models like TransUNet, MedT, and FAT-Net. The implementation, which uses Python, demonstrates how versatile and useful the language is for the scientific computing community.

Keywords: DeepCardioNet, Attention Swin U-Net; Ventricular Epicardium; Endocardium; Computer Vision Approach.

Abstract Id: ETRD24142

Ionospheric Composition in Response to X-Class Solar Flares over India

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Abstract

This study analyzes the changes in ionospheric composition over India in response to X-class solar flares activity during winter, summer and monsoon periods. Ion density percentage data as functions of altitude were analyzed to quantify molecular depletions, atomic enhancements, transient spikes and other storm signatures indicating short and long-term disturbances driven by flares by using Geostationary Operational Environmental Satellites (GOES) and International Reference Ionosphere (IRI) model. During winter, successive powerful M-class and X-class flares generated substantial negative ionospheric storms marked by up to 40% molecular ion depletions at 180-200 km altitudes. This confirms increased recombination after solar flares. In summer, flares rapidly induced spikes exceeding 95% in H^+ within minutes at topside F-region heights, reflecting impulsive proton photoionization. Gradual >130% H^+ elevations persisting for hours were also measured X-class flares increased peak ionization altitudes for heavier O^+ and O_2^+ ions by 50-100 km compared to M-class flares during the monsoon period, verifying higher ion production from increased EUV/X-ray fluxes.

Keywords: Solar Flare, IRI Model, Ionospheric Composition, Ion Density.

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Abstract Id: ETRD24143

Assessing Heavy Metal Pollution Levels in the Borunda Region, Jodhpur: An Environmental Study

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Abstract

This study investigates the presence and distribution of heavy metals in the Borunda region of Jodhpur, Rajasthan, aiming to assess environmental contamination and potential risks to human health. Through a combination of field surveys, laboratory analyses, and spatial mapping techniques, the research evaluates the concentrations of key heavy metals such as lead, cadmium, chromium, arsenic, and mercury in soil, water, and sediment samples. Various factors influencing heavy metal accumulation, including industrial activities, agricultural practices, and natural geological processes, are examined to understand the sources and pathways of pollution. Additionally, the study explores the spatial variability of heavy metal contamination and its correlation with land use patterns and socio-economic factors. The findings provide valuable insights into the extent of heavy metal pollution in the Borunda region, highlighting areas of high contamination and identifying potential hotspots of environmental concern. Recommendations are made for remediation strategies and regulatory measures to mitigate pollution and safeguard human health and ecological integrity in the study area. This research contributes to the broader understanding of heavy metal pollution assessment methodologies and informs sustainable management practices for contaminated environments.

Keywords: Heavy Metals, Soil, Contamination, Pollution.

Abstract Id: ETRD24144

Caste and Consequence: The Impact of Social Stratification in Rohinton Mistry's A Fine Balance

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Abstract

Literature has historically served as a forum for addressing a variety of social issues, and as such, it has truly been demonstrated to be "a voice of the voiceless." The caste system is one of the social ills that has been slowly hollowing out our society. Additionally, in the present era, the unity of the people in Indian society has been weak and fragile due to its orthodox and so-called traditional rules and rituals. This study illustrates the hysterical situation along with issues such as forced mass sterilization campaigns, infringements on people's fundamental rights (such as the ability to vote), and the forced exile and imprisonment of impoverished groups as a result of the government's "beautification" initiatives. These people are humans, even though society and their surroundings still do not recognize them as such. Instead, they are just dirt, not belonging to this planet. This study includes the tragic life story and struggles of lower-class people who ended up at the heart of the Emergency period, which lasted from 1975 to 1977. This essay explores the meaning of marginalized voices' suffering by presenting Dukhi Mochi's miserable life.

Keywords: Emergency, Lower Class, Society, Struggle, Suffering.

Abstract Id: ETRD24145

Synthesis, Characterization and Antibacterial Activity of Pure and Cd-Doped BaO by Eco- Friendly Method

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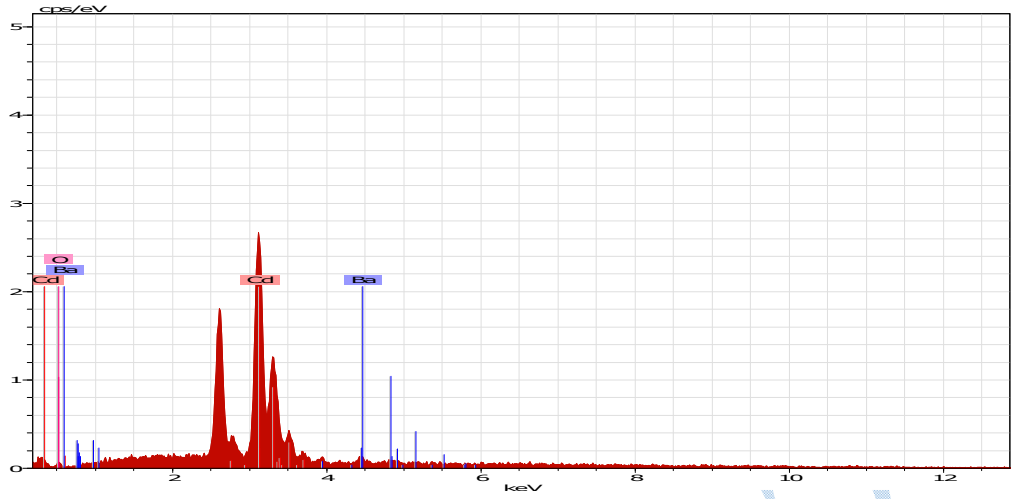
Abstract

Doped nanostructure materials have gained significant attention due to their unique structural, chemical, and physical characteristics that set them apart from undoped materials [**1**]. In this study it highlights the green synthesis of pure and Cadmium-doped barium oxide nanoparticles using *Pterocarpus santalinus* extract (bark extract of sandalwood) [**2**]. The prepared samples were characterized by XRD, SEM-EDX and its antibacterial activity on Bacillus subtilis (Gram Positive bacteria) and E. coli (Gram Negative bacteria) [**3**]. The XRD pattern result showed that the synthesized BaO nanoparticles were of tetragonal structure and crystallite sizes of pure and Cd-doped BaO were 14.85 nm and 16.41 nm, respectively. The morphological study and percent composition of synthesized NPs were investigated using a scanning electron microscope and energy-dispersive X-ray analysis. The SEM image of pure BaO, it can be concluded that the material is composed of uniformly dispersed, porous, agglomerated and flower-like nanoparticles. The SEM image of the Cd-doped BaO showed that the particles appear in the form of aggregation and dispersion and are irregular in shape. The antibacterial tests showed that these nanoparticles have high antibacterial activity may be as potential application as antibacterial agents in food and medicine industry.

Keywords: Green synthesis, XRD, SEM-EDX.



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Abstract Id: ETRD24146

Effective Strategies for Teaching English in Rural Pockets

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Abstract

There are various teaching methods of English that the language teachers practice in their classrooms. English language is taught as a second language all over India in State Government Institutions. It has been a complex task for language teachers to arouse deep knowledge in every Second language Learner. As English is an International Language, we can't ignore its deeper study. The Language instructors apply various methods and measures to teach the rural learners. Here in the present paper, the researcher finds a few effective methods of teaching English language and grammar which may be very useful for the teachers who are practicing teaching English in rural regions. The researcher visits a few rural Government Elementary, Secondary, and Higher Secondary Schools and takes notes from the Teachers of English from those Institutions through a close study of various journals and books, find that there are a few strategies that may be adopted by the teachers to enhance the all-round development of the learners in the subject English as Second Language Learning. The present study has been done by descriptive survey method.

Keywords: Mixed Method, Direct Method, Audio-Lingual Method, Silent-Way, Total Physical Response, Grammar- Translation method, Activity Based Learning, Second Language Learning, Suggestopedia, Structural Approach and the communicative Approach

Abstract Id: ETRD24147

Water Contamination in India and Its Devastating Impact on Human Health

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Abstract

Despite the impressive economic growth of India, it lacks in providing safe drinking water to the rising population. Serious health impacts are causing threats to humans and organisms due to a surge in water contamination caused by microbial and chemical pollutants. This paper provides information about the issues that are the most common reason for water contamination in India and its serious consequences on humans. Looking into the case studies and research findings, makes a clear view that it has now become pertinent to put urgent attention on the need for improved water treatment infrastructure, stricter waste disposal regulations, and a collaborative effort to protect this essential resource.

The social and economic consequences of water contamination in India are increasingly visible in the day to day lives. Water Contamination not only spreads diseases but also affects agricultural productivity and limits tourism in India. These factors aggravate impoverishment and increase existing social inequalities. Spending on pristine water solutions is essential for community health as it plays a crucial role in overall sustainable development.

Keywords: Chemical Pollutants, Water Contamination, Health Issues, Water Disposal, Water Treatment, Disposal Regulations.

Abstract Id: ETRD24148

Analysis of Key Parameters Associated with Solar Activity and Geomagnetic Disturbances

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Abstract

Geomagnetic disturbances and solar activity are closely related phenomena that have the ability to cause disruptions to both ground-based and space-based technology systems. The objective of this work is to clarify the relationships between solar activity and geomagnetic storms by presenting a thorough correlation analysis of major factors between 2020 and 2023. The parameters investigated include the Disturbance Storm Time (Dst) index, intensities of C-class and B-class solar flares, sunspot numbers (SSN), and the 10.7 cm solar radio flux. Employing Pearson's correlation analysis, a robust statistical technique, the research quantifies the strength and direction of associations between these variables. The findings reveal positive correlations between the Dst index and C-class flare intensity (r = 0.14759)), sunspot numbers (r = 0.14742), and the 10.7 cm solar radio flux (r = 0.100875), implying that increased solar activity corresponds to more intense geomagnetic disturbances. Conversely, a negative correlation is observed between the Dst index and B-class flare intensity (r = -0.37814). Strong positive correlations are also identified between sunspot numbers and C-class (r = 0.42782) and B-class (r = 0.97173) flare intensities, as well as the 10.7 cm solar radio flux (r = 0.82321). Strong positive correlation is also identified between B class flare intensity and 10.7 cm solar radio flux (r=0.99551). The results contribute to a deeper understanding of the Sun-Earth connection and have significant implications for space weather forecasting, risk assessment, and the development of mitigation strategies against adverse space weather events.

Keywords: Geomagnetic disturbances, Sunspot number, Solar flux.

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Abstract Id: ETRD24149

Relationship of Sunspot Number, Coronal Mass Ejections (CMEs) and Kp Index

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Abstract

Solar activity and geomagnetic disturbances are intricately linked phenomena with potentially disruptive impacts on space-based and ground-based technological systems. This study investigates the connection between solar activity Sunspot number (SSN), Coronal mass ejections (CMEs) and geomagnetic activity measured by Kp- index during 2020- 2023. Employing Pearson's correlation analysis, a robust statistical technique, the research quantifies the strength and direction of associations between these variables. The findings reveal positive correlations between the coronal mass ejection and sunspot number (r = 0.68), sunspot number (SSN) and Kp index (r = 0.35), correlation between coronal mass ejection and K index (0.46) implying that increased solar activity corresponds to more intense geomagnetic disturbances. The results contribute to a deeper understanding of the Sun-Earth connection and have significant implications for space weather forecasting, risk assessment, and the development of mitigation strategies against adverse space weather events.

Keyword: - Solar Activity, Geomagnetic Disturbances, Sunspot Number, Coronal Mass Ejections, Kp Index.

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Abstract Id: ETRD24150

Beyond The Naked Eye: Investigating the Journey of Microplastics and Unraveling the Toxicological Impacts on Human Health and Organisms (From Minute Particles to Major Problems)

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Abstract

It is difficult to imagine a world where plastic doesn't exist. Plastic gives rise to microplastics, which are tiny toxic particles of plastic that are disposed of in the environment everywhere. From the skies to the depth of the oceans, microplastics are present in every sphere of life. In a recent study published in The New England Journal of Medicine, researchers found that microplastics inside the human bodies, in the fatty deposits or plaques that can accumulate in the blood vessels of the heart. Individuals having these plastics in their blood vessels had a greater risk of heart attacks, strokes or even death due to have the toxicological nature of microplastic particles in the body. Microplastics (sized <5mm) have potentially dangerous impacts on human health. The human body is exposed to these microplastics through ingestion or inhalation. An adult human might swallow about 5,100 pieces of table salt and up to 41,000 by drinking water annually. Once microplastics enter the body, they spread throughout the body and reach different tissues and organs depending on their size and microplastics are excreted out of the body through feces and urine. The microplastic particles inside the body can cause damage at the cellular level, leading to issues like oxidative stress and inflammation. If these microbody particles remain inside the human body for a longer time, it could result in chronic inflammation and increase the risk of abnormal tissue growth. The tiny microplastic particles pose a serious threat to the ecosystem, wildlife and marine environment as they can be ingested by marine life and birds and can cause death. These microplastics can reach human bodies through the consumption of fishes and birds. Microplastics have entered the food chain of the ecosystem and will continue to pose a threat to all the species of the ecosystem for

centuries. Additionally, these minute toxic particles can adsorb and concentrate harmful chemicals from the environment such as pesticides and industrial pollutants, which can be transferred to animals and humans upon ingestion. Microplastics are contaminating the environment and pose a threat to human health, but our understanding of the implications is still evolving.

Keywords: Microplastics, Toxicological Nature, Health Concerns, Environmental Contamination, Bioaccumulation, Pollution, Ingestion, Neurotoxicity.

Abstract Id: ETRD24151

Green Synthesis and Characterization of Bao and Cd-Doped Bao Nanoparticles Using Pterocarpus Santalinus L. (Red Sanders) Bark Extract and Their Antimicrobial Properties

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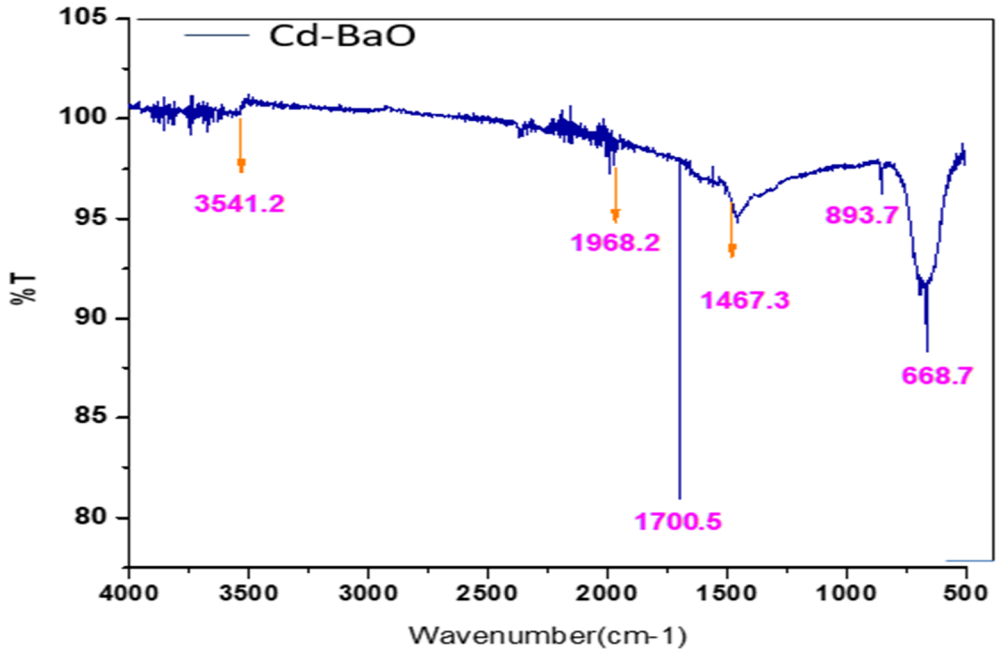
Abstract

In the present investigation, we have described the green biosynthesis of BaO and Cd-doped BaO nanoparticles (NPs) by using *Pterocarpus santalinus* extract (bark extract of sandalwood).The functionalization of BaO and Cd-doped BaO particles through *Pterocarpus santalinus* extract mediated bioreduction of BaO and Cd-doped BaO was investigated through UV–Vis Spectroscopy, Fourier Transform Infrared (FTIR) spectroscopy and its antibacterial activity on Bacillus subtilis (Gram Positive bacteria) and E. coli (Gram Negative bacteria)[1]. The optical band gap of pure BaO and Cd-doped BaO are 3.72eV and 3.33eV respectively. The FTIR study confirmed that the functional groups appeared at 693cm^{-1} in BaO nanoparticles are due to the BaO stretching and the functional groups appeared at 668.7cm^{-1}and 893 cm-1 in BaO nanoparticles were due to the BaO stretching and CdO stretching [2]. On comparing FTIR Spectrum of BaO and CdO doped BaO, it is clearly seen that the doped NPs has different FTIR pattern as compared to BaO NPs.The synthesized BaO and Cd-doped BaO NPs exhibited antibacterial activity against Gram-positive and Gram-negative bacterial strains [3].

Keywords: Green Synthesis, UV-vis Spectroscopy, FTIR Spectroscopy



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Abstract Id: ETRD24152

Enhanced Photocatalytic Degradation of Mixed Dye Using Fe-Doped BiOCl Photocatalyst Under White LED Light Sources

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Abstract

Semiconductor based photocatalyst have been widely used and efficient green technique in the field of photocatalytic degradation of organic pollutants. Carbon di oxide, water and some inorganic salts (SO_4^2, NO_3^-, PO_4^-, etc) is the end product in this process. A visible active Fe-doped BiOCl photocatalyst was successfully synthesized via precipitation method. The structural photophysical and photocatalytic properties of Fe-doped BiOCl photocatalyst have been investigated through X-ray diffraction (XRD), Field emission scanning electron microscopy (FESEM), Energy- dispersive X-ray spectroscopy (EDX) and Brunauer-Emmett-Teller (BET) analysis. Here mixed dye (Azure B and Victoria Blue) was selected as model pollutant to determine the photocatalytic activity of Fe-doped BiOCl under white LED light irradiation (400-700 nm). As a result, Fe-doped BiOCl was showed excellent photocatalytic activities in 150 min and the degradation rate of mixed dye as high as 91% under white LED light. The heterogeneous photocatalyst showed outstanding reusability and stability at the end of the three cycle is a little bit decreased as compared to that of the first cycle. Doping is the great technique for the enhanced photodegradation efficiency of organic pollutants. Here, Fe element is used for the doping in BiOCl crystal. Moreover, the mechanism of the mixed dye degradation elucidated that. O_2^- radicals had the most irreplaceable role in the photocatalytic process for Fe-doped BiOCl composite. This work provides a multifunctional photocatalyst for controlling environmental restoration pollution, water and wastewater treatment.

Keywords: - Photocatalyst, Field Emission Scanning Electron, Fe-Doped BiOCl.

Abstract Id: ETRD24154

Some Double Sequence Spaces and Its Dual

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Abstract

The nation for duals for sequence spaces introduced by Köthe and Toeplitz. B.C. Tripathy and B. Sharma have generalized Köthe-Toeplitz dual of some double sequence spaces. The notion of α −duals is generalized by Chandra and Tripathy on introducing the notion of η −duals for sequence spaces. The notion of double sequences is found in Browmich. C.G. Lascarides introduced a study of certain sequence spaces of Maddox and a generalization of a theorem of Iyer. In this article we find dual of some double sequence spaces and discuss the perfectness of different double sequence spaces relative to η −dual.

Keywords: Dual space, Perfect Space, $\alpha - and\ \eta - duals$.

Abstract Id: ETRD24155

A Study on Role of Women in Economic Development in India

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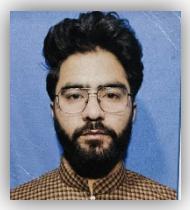
Abstract

Women's empowerment is a vital issue in developing countries. Despite the fact that women are an essential component of any community, their active participation in decision-making is superficial in economic activity. Economic development and women's empowerment are intertwined; while growth by itself can significantly contribute to reducing gender inequality, women's empowerment can also advance development. This essay examines show women's participation in the labour contributes to the nation's economic growth in various states.

Keywords: Women's role, Employment of women, Economic development, Gender and development and Socio-economic progress.

Abstract Id: ETRD24156

Managing Demand in Commercial and Industrial Sectors: A Comprehensive Review



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Abstract

Demand Side Management (DSM) is an economical method of managing power networks with the goal of lowering expenses and capacity requirements. DSM has emerged as a pivotal strategy in the energy sector, offering industrial and commercial entities the means to optimize costs and enhance sustainability by intelligently shifting their energy consumption profiles. This review paper provides a comprehensive exploration of DSM's application in the context of industrial and commercial loads. This review paper offers a thorough analysis of DSM methods and how they are used to optimize energy costs in the commercial and industrial sectors by shifting loads. The paper explores the basic ideas of DSM, highlighting how it can save energy costs and lessen environmental effects.

Keywords: Demand Side Management, Demand Response, Industries, Commercial, Constraints

Abstract Id: ETRD24158

A Study of Mathematical Concept of Calculus with Vedic Math's

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Abstract

The applications of Vedic mathematics Sūtras include the analysis of determinants, the utilization of grids, and the exploration of determinants under various networks and settings. In this proposal a work has been made to enlighten the exploration theme & quot; Vedic Mathematics in context of Advance Calculus & quot; by clarifying practically every single Sūtras with significance, their applications in settling a wide range of conditions beginning from direct, quadratic, cubic, quartic to customary and halfway; straight and non-direct differential conditions. The examination is being conducted in several domains, taking into account the effects of incorporating Vedic Mathematics into children education. It aims to explore novel, potent, but straightforward applications of the Vedic Sutras in fields such as arithmetic, analysis, and computation. However, the true beauty and effectiveness of Vedic Mathematics cannot be fully appreciated without actually using the technique. The utilization of Sūtras further develops the computation capacity of the understudies in gigantic extent of intricacies, which ensures precise and speedier estimations associated with level headed and coherent thinking.

Keywords: Determinants, Vedic Sutras, Differential Equation.

Abstract Id: ETRD24159

The First Principles Investigations into The Mechanical, Electrical and Structural Properties of Inorganic Double Halide Perovskites (CS2NaTlX6; X = F, Cl, Br)

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Abstract

Due to their suitable optical absorption efficiency, higher stability, tunable bandgap, large carrier mobility, non-toxicity, readily available raw materials, low cost, etc., lead-free double halide perovskites have demonstrated a number of advantages over lead-based perovskites. Density functional theory (DFT) is used to calculate the structural, electrical, optical, and mechanical properties of the lead-free halide double perovskites Cs2NaTlX6 (X = F, Cl, Br) using the Perdew–Burke–Ernzerhof (PBE) functional within the generalized gradient approximation (GGA). At equilibrium, the structural parameters are calculated, including the lattice parameter, cell volume, bulk modulus, pressure derivative, and tolerance factor. The compound's semiconducting nature is revealed by the electronic density of states, while the band structure directly displays the band gap's nature. The under-estimated band gap found in the GGA-PBE functional is corrected by the introduction of the HSE06 functional. Electronic structures are used to analyze and explain the real and imaginary components of the dielectric function, absorption coefficient, energy loss function, reflectivity, refractive index, and extinction coefficient. These characteristics suggest that materials based on Br and Cl are optically more appropriate than those based on F. The halide double perovskites' ductile nature is guaranteed by their mechanical characteristics.

Keywords: Density Functional Theory, Halide Double Perovskite, Optoelectronics, Inorganic Perovskites.

Abstract Id: ETRD24160

Synthesis and Exploration of the Catalytic Activities of Organotin(IV) Compounds

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Abstract

Six organotin (IV) compounds, $HLSnR_2$ (**1**, R = Ph; **2**, R = *t*-Bu; **3**, R = *n*-Bu) and $LSnR_2$ (**4**, R = Ph; **5**, R = *t*-Bu; **6**, R = *n*-Bu) have been synthesized by reaction of the polydentate pro-ligands, $\mathbf{H_3L}$ and $\mathbf{H_2L}$, respectively, with the corresponding diorganotin chlorides. All compounds were characterized by FT-IR spectroscopy, ^{1}H, $^{13}C\{^{1}H\}$, ^{119}Sn (^{1}H) NMR spectroscopy, HRMS spectrometry, and single-crystal X-ray diffraction. The solid-state structures show that all compounds are monomeric (except compound **3**) and contain a penta-coordinated tin atom. Compound **3** is a dimer with two hexa-coordinated tin atoms. Compounds **1-3** contain a non-coordinated hydroxymethyl group. All compounds have been screened for their catalytic efficacy in the synthesis of 1,2 disubstituted benzimidazole using *o*-phenyldiammine and aldehyde derivatives. It has been observed that both Lewis acidic Sn (IV) centre and hydroxymethyl group (hydrogen bond donor) catalyse the reactions with a yield of product up to 92%.

Keywords: - Organotin (IV) compounds; Group 14 elements; Tin; Homogeneous Catalysis; X-ray diffraction.

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Abstract Id: ETRD24161

Fractional Integral Operator Involving Extended Mittag-Leffler Function as Its Kernel

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Abstract

In this paper, we introduce fractional integrals and differentials of the extended Mittag–Leffler functions $E_{\alpha,\beta}^{\gamma,\delta;\,c,d}(z;p,q)$. In this continuation of the study of fractional calculus.

2000 Mathematics Subject Classification. 33C20, 33E12, 34A08.

Keywords: - Fractional Integral, Mittag-Leffler Function, Extended Mittag–Leffler Functions.

Abstract Id: ETRD24162

Cosmic Rays Intensity Related to Geomagnetic Disturbances

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Abstract

We have studied the relation between yearly average value of cosmic ray intensity (CRI) observed at Moscow super neutron monitor during the period of 1996-2019 with yearly average values of Geomagnetic parameter Ap index and Kp index. It is seen that yearly average value of cosmic ray intensity is inversely correlated with yearly average values of Ap index and Kp index. We have found negative correlation between yearly average values of cosmic ray intensity (CRI) and yearly average values of geomagnetic parameter Ap index and Kp index for the period of 1996-2019. Strong negative correlation with correlation coefficient -0.85 has been found between yearly average values of cosmic ray intensity (CRI) and Ap- index. And we have found large negative correlation between yearly average values of cosmic ray intensity (CRI) and Kp-index with correlation coefficient -0.78.

Keywords: Cosmic Ray Intensity (CRI), Geomagnetic Parameter Ap Index and Kp Index.

Abstract Id: ETRD24163

Helicobacter Pylori Diagnosis by Nested PCR From a Novel Primer Pair in Rapid Urease Negative Gastric Biopsy Samples

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Abstract

Background: Helicobacter pylori infection is among the most prevalent in developing countries. It is an etiological agent of peptic ulcer, gastric adenocarcinoma, and mucosal-associated lymphoid tissue (MALT) lymphoma. Despite the development of different assays to confirm H. pylori infection, the diagnosis of infection is challenged by precision of the applied assay. Hence, this study aimed to assess the diagnostic accuracy of Nested PCR using a highly specific and sensitive new untested Primer pair, especially against the routinely and commonly performed Rapid Urease chairside card test. **Methods**: Gastric biopsy samples were collected from patients exhibiting findings typically indicative of Helicobacter pylori infection during endoscopy, and a chairside rapid urease card test was conducted. From twenty of those Rapid urease negative samples, DNA extraction was performed, followed by amplification using two primer pairs (Pylo A and Pylo AN) synthesized from the 16s rRNA gene of Helicobacter pylori genome. **Results:** Twelve (60%) of the rapid urease card test-negative gastric biopsy samples tested positive with Nested PCR. **Conclusions:** Our results indicate that the Nested PCR is more sensitive and specific than the Rapid urease test for detecting Helicobacter pylori in gastric biopsy samples. Consequently, due to its superior diagnostic accuracy, it should be consistently utilized for patients with Gastroduodenopathy to avert any potential misdiagnosis.

Keywords: Gastric Biopsy, PCR, Lymphoid Tissue.

Abstract Id: ETRD24164

Energy Audit and Energy Management- An Overview

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Abstract

The foundation of a systematic decision-making process in the field of energy management is an energy audit. Energy management is required for the area's optimal management of energy procurement and use. Energy management and energy audits are carried out in accordance with the suggestions made by the energy audit team in order to save money by conserving energy for various enterprises, institutions, hospitals, residential areas, etc. These audit and management teams identify places where electricity is wasted and put into practice efficient and responsible energy use. The environment can be preserved; energy and money can be saved without compromising the continuous, high-quality work in any industry with the help of effective energy management and auditing techniques. This essay provides a quick overview of the significance of energy management and audits in and around our homes.

Keywords; - Energy Efficiency, Energy Conservation, Energy Audit, Energy Management.

Abstract Id: ETRD24165

Variation of Cosmic Rays Near Southern Pole and Sunspots Number Based on Selected Neutron Monitors

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Abstract

On 7 October 2008, Quantus flight takes off from Singapore and within a few minutes it is flying in auto pilot mode at its maximum altitude, suddenly the node of the plane goes up and the plane goes up 200 feet while flying and suddenly the node of the plane goes down and comes down 650 feet, in this way the plane starts moving up and down on its own, due to which 119 passengers get injured, the pilot somehow makes an emergency landing of the plane, investigation shows that one bit in the signal bit given to the FCPC (Flight Control Primary Computer) had changed automatically, how this trigger was changed in the software of the FPC of Quantus 72, what was the main reason for this is not known but many scientists say that there is a strong possibility of a bit trigger in the CU due to cosmic rays and it is not even recorded, Single event upsets (SEUs) occur in computer circuits when high-energy particles such as neutrons or muons from cosmic rays or gamma-rays strike the silicon used in microchips. This generates an electric charge that can change the internal voltage of nearby transistors, corrupting the data stored there in this research paper, the effect and correlation of cosmic rays coming from the universe and the number of sunspots on the southern hemisphere is studied. Sunspot is a very interesting phenomenon which occurs on Sun and cosmic rays are highly energetic charged particles coming from the universe. There is an inverse relationship between the number of sun spots and cosmic rays; strange behavior was observed in both near the poles.

Keywords: Galactic Cosmic Rays; Near Pole; Neutron Monitor; Sunspots Number.

Abstract Id: ETRD24166

Bianchi Type-III Cosmological Models with Gravitational Constant G and the Cosmological Constant Λ

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Abstract

Einstein field equations with variable gravitational and cosmological constants are considered in the presence of perfect fluid for the Bianchi type-III universe by assuming conservation law for the energy-momentum tensor. Exact solutions of the field equations are obtained by using the scalar of expansion proportional to the shear scalar $\theta \propto \sigma$, which leads to a relation between metric potential $B = C^n$, where n is a constant. The corresponding physical interpretation of the cosmological solutions are also discussed above.

Keywords: Bianchi Type-III Universe, Cosmological Constant, Energy Momentum Tensor.

Abstract Id: ETRD24167

Development of Women Entrepreneurship Through Small and Medium Enterprises

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Abstract

The notion of 'women entrepreneurship' is a relatively new phenomena, therefore experts are taking a close look at it right now. Our ages-long male chauvinism ignores the latent commercial potentials among ambitious women, stating that portraying them as the finest homemakers is the best use of their strengths and potentialities. However, today's women entrepreneurs are a group of women who have dared to break free from centuries-old cultural and familial restraints and set out to pursue new routes of success and accomplishment. Women's rights in India have evolved throughout time. Women can be found in all aspects of life nowadays, yet many are still resistant to modernization. Modern Indian women demonstrate the transformation from housewife to savvy businesswoman. The author of this study attempted to assess the role of women entrepreneurs in the economy and their contributions to society. This research investigates how women entrepreneurs contribute to women's empowerment and progress toward gender equality. Entrepreneurship has traditionally been a male-dominated activity, although this perception has shifted over time. Women's entrepreneurship is a critical component of India's economic growth. Women's economic empowerment is critical for achieving women's rights and gender equality. Modern women may be found in all economic professions, including trade, agriculture, manufacturing, medicine, and engineering, as well as the newly emerging defense industry. Women's empowerment boosts productivity, enhances economic diversification, and promotes income equality.

Keywords: Women Entrepreneurship, Women Empowerment, Development, Small & Medium Enterprises

Abstract Id: ETRD24168

Roll of Primary Macronutrient NPK of Herbal Based Soil

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Abstract

In this paper on attempt has been made to study the NPK importance of soil. The present study has been taken to have an idea of chemical characteristic of soil properties in agriculture for health and food purpose. The quality of soil is controlled by physical, chemical and biological components of soil and their interaction. In chemical properties the role of essential elements is very important such as pH, electrical conductivity, organic carbon, copper, zinc, magnesium, manganese, iron, phosphorus, nitrogen, potash etc. There are 5 samples were collected from different site every sample has various properties. In observation table one the data of all essential elements are given. The normal value of organic carbon is in between 0.12 % to 0.13%. The value of nitrogen is minimum, the value of potash is minimum for sample - 2 and value of phosphorus is suitable for sample -3(Jaspur garden). The natural nutrients such as phosphorus, potassium and nitrogen etc. Improve plants growth. These chemical fertilizer with varying concentration improves the growth of plants. Research in this area not only upgrade our recognition of soil science but this knowledge agriculturists.

Keywords: - Herbal Based Soil, Chemical Fertilizer, Soil Properties.

Abstract Id: ETRD24169

Humanistic Analysis of Climate Change in Judith Wright's Poem - Sanctuary

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Abstract

Forests create climate, climate influences peoples' character, and so on and so forth" - Anton Pavlovich Chekhov. Forests are one of the inevitable characteristics of biodiversity. "Climate change refers to long-term shifts in temperatures and weather patterns. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil, and gas", (United Nations). These climate changes have resulted in global warming. Looking through the poem of Judith Wright's "Sanctuary", it is found that the major challenge of climate change is deforestation. Deforestation plays a crucial role in detecting environmental climate change. Judith Wright is one of the famous Australian writers who has been the mediator in vividly portraying nature's destruction through her poems. She has also campaigned against the destruction of ecological balance. The poem "Sanctuary" revolves around deforestation and modernization of the world in which the word 'sanctuary' connotates 'safe place'. Applying the reader-response theory in the perspective of the relationship between the poem and the reader, it is crystal clear that the poem "Sanctuary" emphasizes environmental concern and personal experience. This paper analyzes the effect of climate change through the lens of humanistic geography as it reflects a deep personal connection to the landscape and an emotional response to environmental changes. Therefore, implementing reforestation is a suggestion to attain sustainable development goals.

Keywords: - Climate Change, Judith Wright's Sanctuary, Sustainable Development.

Abstract Id: ETRD24171

A DDE Model on COVID-19 with Single Dose of Vaccination Strategy

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Abstract

The COVID-19 pandemic has necessitated the rapid development and implementation of vaccination strategies to curb the spread of the virus. This study presents a Delay Differential Equation (DDE) model to analyse the dynamics of COVID-19 transmission under a single-dose vaccination strategy. The model incorporates the time delay to understand the actual status of infection among the individuals. The result shows the impact of a single-dose vaccination on reducing the infection rate and altering the disease progression within the population. Further, we evaluate the effectiveness of single-dose vaccination in achieving herd immunity and controlling the outbreak. The results provide valuable insights into optimizing vaccination schedules and public health policies to enhance the overall effectiveness of the vaccination campaign against COVID-19.

Keywords: Mathematical Modeling, COVID-19, Delay Differential Equations, Stability, Vaccination.

Abstract Id: ETRD24172

Factors Influencing Gharial Hatching Success in The Non-Protected Gandak River in Northern India

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Abstract

Background:

The gharial (*Gavialis gangeticus*), a critically endangered reptile endemic to the Indian subcontinent, has been breeding in select rivers of India and Nepal. In 2016, the Gandak River, a non-protected river, was identified as a gharial breeding sub-population. Water discharge of the river is controlled by a barrage constructed at the India-Nepal border. Gharial survival depends on various factors affecting different life stages from nest hatching to juvenile survival.

Objective:

This study aims to understand the factors influencing the hatching success of gharials to take adaptive management interventions for its recovery in the Gandak River.

Methods:

From 2015 to 2023, annual surveys were conducted along a 320 km stretch of the Gandak River to identify adult male and female gharial congregation sites. These sites were monitored to detect gharial nests and protect them from threats like river bank erosion, predation, human damage, and livestock trampling. Threatened nests were relocated to artificially constructed nests at the same site but away from the waterline.

Results:

Between 2018 and 2023, 33 gharial nests were detected, with annual nest counts ranging from 3 to 10. Our team identified 42% of these nests, detected 36% nests as exposed due to river bank erosion, and 21% were detected post-natural hatching.

Among the 26 nests detected by our team or exposed to erosion, 16 nests successfully hatched at least one egg, achieving 61.54% nest hatching success rate, with annual success rate ranging from 16.67 % and 100%. River bank erosion caused 26.92% gharial nest loss, while predation by jackals accounted for11.53% loss.

Out of 574 eggs counted from 26 nests, 415 eggs hatched successfully, resulting in 72.30% egg hatching success rate, with annual success rate ranging from 17.91 % to 98.99%. Egg hatching was adversely affected by nest inundation, sediment deposition and capillary rise of water to nests during flooding.

Conclusion:

River bank erosion due to change in water label and cyclonic storms during incubation period, and predation significantly impact gharial nests and egg hatching success in the Gandak River. We recommend regulating barrage water discharge during breeding periods, establishing an incubation center to improve hatching success, designating critical river stretches as protected areas, and promoting community participation in gharial conservation efforts.

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Abstract Id: ETRD24173

Experimental and Numerical Simulation Study of Paraffin Wax Phase Change Material

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Abstract

Materials known as phase change materials (PCMs) are employed to store latent thermal energy. When heat energy is applied to or removed from these materials, their form changes. The study of PCM gives knowledge on the formation of liquid fraction and its temperature distribution during the melting and solidification process. In the current study, an experimental setup is newly developed for testing the melting behaviours of PCM. Commonly used Paraffin wax is used for the conduction of experiments. The numerical model is developed and applied to the paraffin wax. The results of liquid fraction obtained during the numerical simulation and the experimental contour were compared. Numerical contour shows the heat distribution and melting profile of PCM during heating.

Keywords: PCMs, Paraffin Wax, Numerical Contour.

Abstract Id: ETRD24174

White Light Emissive Triphenylamine-Based Triazole Derivatives with Fluorescence Switching Response Towards Volatile Acid

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Abstract

Two triphenylamine-based triazole molecules (**TTA** and **BTA**) were reported herewith, exhibiting significant fluorescence in the solid and solution states. **TTA** and **BTA** were highly sensitive towards trifluoroacetic acid (TFA) vapour by visible colour change as the triazole nitrogen can easily be protonated. Triazoles exhibit a strong sensitivity due to consistent intramolecular charge transfer (ICT) interactions, whereby protonation causes bathochromic alterations in both the UV-visible and fluorescence spectra. These spectra alterations were reversible when the base triethylamine (TEA) was added**.** **TTA** displayed an Aggregation-Induced Enhanced Emission (AIEE) effect in the water: acetonitrile (7:3) combination. **TTA** demonstrated white light illustration in solid and PDMS film with very high CRI values (87% and 98%), showing its potential for a white light-emitting diode (WLED) field. TFA vapor was also visibly detected by the triazoles exposing the thin film and powder of triazoles under the TFA atmosphere. These triazoles-PDMS composite thin film emitted light in the blue-green region in the stable state, and cyan or green colour was emitted after protonation. **TTA** changes colour when exposed to a TFA vapour for a few seconds, making them suitable to detect TFA or volatile acid leakage in industry and laboratory. The acid-sensitive fluorescent probes can also be employed as a photosensitizer in biological, environmental, and industrial applications.

Keywords: Induced Enhanced Emission, TTA, White Light-Emitting Diode.

Abstract Id: ETRD24175

Design and Development of Heat Exchanger for Metal Hydride Application

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Abstract

Heat exchanger is a vital engineering device designed to transfer heat from one source to another where the two source are not in direct contact. Heat exchanger is crucial device in removing the heat generated in the metal hydride container during the hydrogen storage. A two different design of heat exchanger were developed and studied for their heat carrying capacity and time. Parameters involving change of coolant, inlet velocity & inlet temperature and it is analyzed using Ansys software. This study shows the temperature distribution in different models of heat exchangers under different operating parameters.

Keywords: Heat Exchanger, Metal Hydride Container, Hydrogen Storage.

Abstract Id: ETRD24176

A Comparative Analysis of Geomagnetic Storms in the Ascending Stage of Solar Cycle 25

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Abstract

In the present study we investigate the association of geomagnetic storms (GSs) with solar interplanetary features i.e solar wind speed (Vsw), interplanetary magnetic field (IMF B), product of IMF B and Vsw, solar plasma temperature (Tsp), Ap index & Kp index, for the rising phase of solar cycle 25 (study period 2020 to 2023). From the results of the present analysis, it is observed that the product of solar wind velocity and interplanetary magnetic field is highly geoeffective compared to solar wind velocity or interplanetary magnetic field alone. The correlation coefficient of geomagnetic storm indicator index Dst with these parameters is found to be high and negative during the study period. We have noticed the correlations between solar wind speed and Dst (-0.59), the interplanetary magnetic field (-0.87), the product of the interplanetary magnetic field and solar wind (-0.95), solar plasma temperature (-0.69), Ap index (-0.85) and the Kp index (-0.87). We found that geomagnetic storms occur on the same day when the product of the interplanetary magnetic field (IMF B), solar wind speed (Vsw), interplanetary magnetic field (IMF B) and solar wind speed (Vsw), solar plasma temperature (Tsp), Ap index and Kp index reach their peak. The study of geomagnetic storms with various solar interplanetary features is useful for the study of space weather phenomena.

Keywords: Geomagnetic Storms, Solar Wind, Kp Index.

Abstract Id: ETRD24177

Plasma Treatment of Wood to Improve the Hydrophobicity of Wood Surface

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Abstract

Plasma modification is a type of pre-treatment that affects only the outermost surface without altering the bulk properties. It was developed to create protective and decorative coatings on wooden surfaces. Since the 1990s, significant theoretical and experimental achievements have been made in modifying wood materials using plasma treatment, including: Understanding the characteristics of wood materials through plasma modification, Investigating the mechanism of wood materials through plasma modification, and Developing processes and equipment for wood materials through plasma modification.

In the present study, microwave-induced plasma at specific temperature, power, and duration was used to increase the hydrophobicity of the wood. Determination of contact angle, wettability, surface hydrophobicity, weight change, and moisture loss were used to assess the changes in the wood properties. The results showed that the treatment reduced permeability, decreased wettability, improved surface luster, lower moisture content, and reduced water absorption in the wood.

Keywords: Hydrophobicity of Wood, Plasma Modification, Wettability.

Abstract Id: ETRD24178

Effect Of Coupling Agent on Mechanical Properties of Bamboo Polymer Composites (BPC)

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Abstract

Wood polymer composite (WPC) has already established its market. WPC is basically the combination of wood or any lignocellulose fiber and thermoplastic polymer along with some additives like coupling agents, wax, etc. In the present study, effect of coupling agent and fiber content on the mechanical properties and melt flow index of the bamboo polymer composite (BPC) was studied. Two types of polymers i.e. High-Density Polyethylene (HDPE), Polypropylene (PP) was chosen. The maximum mechanical properties were achieved by PP11 polymer using coupling agent. Initially for uncoupled composite at 10% fiber loading the mechanical properties of the composite was enhanced, however after adding 30% fiber content all the uncoupled composite showed decline in mechanical performance. Coupled sampled showed increment in its mechanical properties till its highest fiber loading of 50%. However, adding the higher fiber content decreased the MFI value of the BPC. HDPE based BPC showed less relative decline in MFI values. The trend followed by HDPE based BPC for mechanical properties was similar to the PP based polymer.

Keywords: Bamboo Polymer Composite, Lignocellulose, High Density Polyethylene, Polypropylene.

Abstract Id: ETRD24179

Support Vector Classifier Approach for Prediction of Liquid-Gas Flow Patterns Inside a Micro-Channel

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Abstract

The interaction of a two-phase fluid in a channel often gives rise to various flow regimes with varying size and shape. General flow regimes such as bubbly, plug, slug, annular, churn, and stratified, are mostly encountered in various engineering operations such as crude-desalting unit, reactors, oil/gas transportation, oil spill, emulsification, and drilling operation. While the formation of flow regimes depends on many parameters such as velocity, channel diameter and orientation, density, viscosity, and surface tension. Therefore, an attempt to predict the flow regime becomes challenging. To predict the flow regime, many researchers have utilized numerical techniques, neural networks, and other machine learning algorithms. In the present work, we attempt to develop a single predictive model for flow regimes in macro-to-micro channels, using support vector classifier. About ~2590 data were collected from literature for training and testing. The flow pattern data were collected from published literature. About 80 % (20 %) of the data were used for training. The accuracy (%), R^2 value and root mean square error (RMSE) during training was found to be 95.35 %, 0.94, and 0.45, respectively. During the prediction of flow pattern maps, the accuracy (%), R^2 value and root mean square error (RMSE) was found to be 97.6% – 100 %, 0.309 – 0, and 0.943 – 1, respectively.

Keywords: Support Vector Classifier, Two-Phase, Micro-Channel, Bubbly Flow, Slug Flow

Abstract Id: ETRD24180

A Comprehensive Study of Statistical Modelling in Reservoir Data Analysis

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Abstract

The present work deals with The Comprehensive Study of Statistical Modelling in Reservoir Data Analysis. In these projects we have collected and handled data. The prediction model was developed by using machine learning. We have collected data, pre-processed it and then analysed it. Here, we have used the data from 2005 - 2023. Then, I have trained models through data which were available to us. The Time series data often exhibits patterns and trends that can be exploited by machine learning models. I have used 3 types of data's i.e. (training data, testing data, and prediction of data). The accuracy curves during training, also known as learning curves, are commonly used to assess the performance of machine learning models. These curves show the model's accuracy on the training and testing data as the training progresses. The use of training and testing data is a common practice to evaluate the performance of a machine learning model. The training data is used to train the model, while the testing data is used to assess the model's performance on unseen data. For Training and testing data we have. After that I predicted and analyse the accuracy of the data. I also got regression value after plotting. Out of 2 graphs, one of them was original and another one was predicted data graph respectively. The training and validation data are used to monitor the performance of the model during training. Overall data was from 2005-2023.For testing and prediction we have used 2020 data. Shifting the data by one year, as I have mentioned, is a common practice to create a time series forecasting problem. This allows the model to predict future values based on historical data. I have also extrapolated of price graph till now.

Keyword: Statistical Modelling, Machine Learning Models, Data Analysis.

Abstract Id: ETRD24183

Integration of English Literature and Social Psychology for STEM Curriculum

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Abstract

The practice, and preaching of humanities is a philosophical exercise, that reaps more conscious maturity than liquid money. The environmental, moral and humanistic challenges faced by the world occurred to due ignorance of humanities liberal arts discipline. Management, STEM courses led to boycott of literary electives. This has led to poor work ethics, workplace culture today. Colleges cater to such problems by training students in soft skills, and communication. Rather than enabling students to realize the importance of ethics, culture, creativity and coexistence, forced training further creates disinterest, lack of response, reception in students. Nathan Heller in his The New Yorker article "The End of the English Major", discusses this dilemma about how in Anthropocene era, the importance of literature, creative, psychology, critical thinking has been diluted. NEP has focused on implementation of holistic learning approach, wherein engineering students can opt for subject readings in humanities, liberal arts.

It has been observed that Indian students' critical, and spoken ability is significantly poor in the college level. Despite k12 education, their language ability both in national language, and secondary language is below average. The harmful effects of abusive language used in social media, OTT, video games, live streams, Bollywood has further deteriorated the behavioural speaking of students, decreased social interactions. Since, these medias are representative of culture and society, vulgar language, cuss word, and abuses lead to penetration in discourse. Collie and Slater in their book Literature in the Language Classroom, discusses that "keeping literature off the syllabus, however, has produced a certain amount of unease as well. There is

the awkward fact that many learners want and love literary texts, as we have found time and time again. Similarly, they often wish to become more familiar with patterns of social interaction in the country which uses the target language." (1987, 5) Moreover, literary texts significant cater to both aspects of soft skills i.e. personal skill, and people skill like one understands Critical Thinking in Ernest Hemminway's Old Man and the Sea, Adaptability Skill in Imtiaz Dharkar's At the Lahore Karhai, Self- Confidence in Nathaniel Branden's Our Urgent Need for Self-Esteem, Assertiveness in Somerset Maugham's The Verger, Time Management in Jean De La Fontaine's The Grasshopper and The Ant, Decision making in Frost's The Road not Taken to name a few. Literature facilitates the development of language skills and soft skills. It builds vocabulary skill, reading skills through critical discussions, practice exercises and speaking, writing activities. This paper addresses ways through which institutions and teachers can develop cognitive thinking of technical students through courses of literature.

Keywords: Soft Skills Through Literature, NEP, Social Psychology, Creative and Critical Thinking

Abstract Id: ETRD24184

Knowing Rural India: An Insight into The Challenges and Opportunities

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Abstract

India is a land of diverse cultures, traditions, and lifestyles that has its soul deeply rooted in villages. Understanding Rural India is not just about knowing its agricultural practices or scenic beauty, but about delving into the heart of the country that holds its historical and cultural essence. Rural India is marked by its simplicity and serenity. Life here revolves primarily around agriculture and related activities. The daily routine of villagers includes farming, cattle rearing, and engaging in local handicrafts. The cultural tapestry of rural India is vibrant and diverse, each region has its unique customs festivals and rituals. Folk music, dance and storytelling are integral parts of village life, passes down through generations.

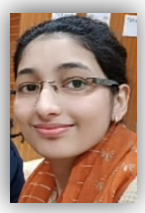
However, despite all these, rural India faces significant challenges including economic constraints, and a lack of basic amenities. Access to quality healthcare, education and clean drinking water remains a struggle for many villagers. Rural India's unique culture and natural beauty makes it an ideal destination for tourism. Rural India provides an opportunity for visitors to experience the traditional lifestyle, customs and hospitality of Indian villagers.

Knowing rural India is essential for understanding the true essence of the country. The simplicity, cultural richness, and strong community bonds found in villages offer valuable lessons in humility and resilience. While rural India faces numerous challenges, it also presents vast opportunities for growth and development. By recognizing and addressing these challenges and by promoting sustainable development and tourism, we can ensure that the soul of India thrives and prosper. By understanding and appreciating rural India not only connects us to our roots but also empowers us to build a more inclusive and balanced nation.

Keywords: Rural India, Cultural Richness, Farming, Cattle-Rearing

Abstract Id: ETRD24186

Solar Plasma Structures and Interplanetary Magnetic Field in Relation with Geomagnetic Storms During the Period of 2015-2017



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Abstract

Large amounts of solar plasma materials are expelled from the sun into the heliosphere by solar flares (SFs) and coronal mass ejections (CMEs). These features are known to disrupt solar wind plasma parameters, causing geomagnetic storms in the earth's magnetosphere and interplanetary magnetic fields. In the present investigation we have analyzed geomagnetic storms (Dst ≤ - 50nT) observed during the period of 2015-2017r, with Coronal Mass Ejections, X-ray solar flares, and interplanetary magnetic fields. We have found that most of the geomagnetic storms are associated with halo and partial halo Coronal Mass Ejections. Further we have detected that geomagnetic storm which are associated with coronal mass ejections are also related with X ray solar flares of different categories. We have determined large positive correlation with correlation coefficient 0.74 between magnitude of geomagnetic storms and peak value of associated disturbances in interplanetary magnetic fields and 0.76 between magnitude of geomagnetic storms and peak value of associated disturbances in southward component of interplanetary magnetic fields. It is concluded that solar plasma structures, coronal mass ejections associated with solar flares, and interplanetary magnetic fields are key parameters to generate geomagnetic storms.

Keywords: Geomagnetic Storms. Coronal Mass Ejections. Solar Flares, Interplanetary Magnetic Fields, Southward Component of Interplanetary Magnetic Fields.

Abstract Id: ETRD24187

Characteristic Behavior of Intense Geomagnetic Storms with Solar Wind Plasma During 2015-2017

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Abstract

In the present investigation we have analyzed intense geomagnetic storms (Dst ≤ - 100nT) observed during the period of 2015-2017, with solar wind plasma turbulences. We have found that all the intense geomagnetic storms are associated with solar wind plasma turbulences. We have determined large positive correlation with correlation coefficient 0.73 between magnitude of intense geomagnetic storms and peak value of associated disturbances in interplanetary magnetic fields and 0.63 between magnitude of intense geomagnetic storms and peak value of associated disturbances in southward component of interplanetary magnetic fields. Further we have obtained positive correlation with correlation coefficient 0.35 between magnitude of intense geomagnetic storms and peak value of associated disturbances in solar wind plasma density and 0.41 between magnitude of intense geomagnetic storms and peak value of associated disturbances in solar wind plasma velocity

Keywords: Intense Geomagnetic Storms. Interplanetary Magnetic Fields, Southward Component of Interplanetary Magnetic Fields, Solar Wind Plasma Density, Solar Wind Plasma Velocity.

Abstract Id: ETRD24188

The Impact of Temperature on The Corrosion Rate of Mild Steel in Acidic Environments in The Presence of Acacia Senegal Extract

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Abstract

The ethanolic extract of Acacia senegal is tested for their effectiveness to combat corrosion rate of Aluminium in 1N hydrochloric acid by mass loss method at different temperatures. Temperature distresses the several reaction rates so any appropriate range of temperature can be maintained with the help of constant temperature bath controlled automatically to the range of ±10C. Acacia senegal extract accomplished 94% corrosion inhibition effectiveness. SEM was utilized to distinguish the thin film framed on the outside of the metal alloy to protect it from corrosion. The value of activation energy and free energy of adsorption have also been calculated to investigate the mechanism of corrosion inhibition. The free Gibbs adsorption energy value inhibitors, is negative which indicates the spontaneity of adsorption process on Aluminium surface. Phenomenon of physical adsorption is proposed from the activation parameters obtained.

Keyword: Acacia Senegal Extract, SEM, Physical Adsorption.

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Abstract Id: ETRD24190

Sustainable Development and Air Pollution

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Abstract

With the shifts of mind-set today the idea of promoting sustainability and Green Building concepts have taken a front foot in Real-Estate industry. Green Building Technologies incorporates systems that broadly contribute to energy self- sufficiency and carbon emission reduction thus reducing air and environmental pollution. Green building technology use energy more efficiently than traditional buildings reducing reliance on fossil fuels and consequently reducing emissions of pollutants and greenhouse gases in the atmosphere. Green Buildings utilize materials having lower levels of volatile organic compounds reducing indoor air pollution and enhancing air quality. These structures make efficient use of land, materials, energy and water while costing less in terms of maintenance and repairs, generating as little waste as possible during the construction process. Also, the technology typically covers everything from geothermal heating to energy efficient appliances using methods, resources and skills with the sole aim of reducing the negative impact on our natural environment.

Fundamentals of a Green Building:

- Sustainable site design.
- Utilizing the best possible conditions in terms of indoor air quality, thermal comfort and access to natural ventilation and day lighting. Improved ventilation systems enhance indoor air quality by filtering out pollutants and ensuring a continuous supply of fresh air.

- Practices aimed at minimizing the environmental impact of the construction process reducing emissions of dust and other air pollutants.
- Preserving the natural water cycle, developing and implementing water harvesting to minimize the dependence on local supply
- Maximize the use of renewable energy and other low impact energy resources.
- Promoting access to local public transportation and reducing reliance on personal vehicles thus decreasing air pollution from automobiles.
- Maximize the use of recycled materials and resource efficient composite type structural systems as well as the sustainably managed biomass materials.

Many types of Green Building Technologies are being developed and promoted like Solar, Wind, hydro-electric power, geothermal energy, Biomass and Bio-Fuels, e-waste recycling, eco-friendly materials, and electric vehicles to vertical farming, promising to revolutionize various sectors for a better natural and built environment.

Keywords: Green Building, Hydro-Electric Power, Geothermal Energy, E-Waste Recycling.

Abstract Id: ETRD24191

The Conquest of Cancer: Challenges and Breakthroughs

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Abstract

This experimentation aims at elucidating novel methods to provide after-effect free cancer therapy. Cancer is a horrible condition that impacts negatively over the sufferer and people around them. There have been several breakthroughs in research for treatment of cancer. There are various types of therapies to treat cancer in the contemporary world. Any therapy will have side-effects and limitations. It is the prime outlook of the modern community to overcome these barriers. In this study we suggest some new methods to tackle these barriers. Thus, this study throws light on futuristic ways to provide after-effect free cancer therapy.

Keywords: Cancer Therapy, Conquest Of Cancer, Treatment Of Cancer.

Abstract Id: ETRD24192

Optimization of Food Delivery Transportation in Metro Cities Using Vogel's Approximation Method

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Abstract

The food delivery industry in metropolitan areas faces significant logistical challenges, primarily due to transportation inefficiencies. This paper presents Vogel's Approximation Method (VAM) as a viable solution to optimize transportation routes and minimize delivery costs. By applying VAM to the food delivery problem, we aim to demonstrate its effectiveness in reducing operational costs and improving service efficiency.

Keywords: Supply, Demand, Penalty.

Abstract Id: ETRD24193

A Study of Assignment Problem to Optimize the Resource for Students in Rural Educational Institutes

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Abstract

Rural educational institutes often face unique challenges in resource allocation due to limited infrastructure, faculty, and educational opportunities. The assignment problem provides a systematic approach to optimize resource allocation, ensuring equitable access to educational resources for rural students. This research paper investigates the application of assignment problem techniques in addressing the specific needs of students in rural educational institutes. Through a comprehensive study, we explore issues such as student-project allocation, course scheduling, and faculty-student assignment, considering the constraints and objectives unique to rural settings. We analyze existing methodologies, present case studies, and propose strategies to enhance resource allocation processes in rural educational institutes. Our findings aim to inform policymakers, educators, and stakeholders about effective solutions to improve educational outcomes in rural areas.

Keywords: Assignment Problem, Rural Educational Institutes, Resource Allocation, Student-Project Allocation, Course Scheduling, Faculty-Student Assignment.

Abstract Id: ETRD24195

Synergistic Modulation of SLME And Thermal Transport Toward Promising P-Type Lead-Free Halide Semiconductors In2TiX6 (X = Br, I) Via First Principles Analysis

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Abstract

Lead halide perovskites have been replaced by the environmentally acceptable and effective lead-free double perovskite material. Double perovskites are innovative compounds for sustainable energy and budding substitutes to organic as well as lead-based solar cells. In the current study, it has been expounded on the structural, electronic, thermoelectric, as well as thermodynamic characteristics of newly designed double perovskites In_2TiX_6 (X = Br, I) by means of ab-initio computations relied on the FP-LAPW tactics and semi-classical Boltzmann transport theory with PBE-GGA as exchange correlation potential. To obtain accurate value of band gaps, TB-mBJ approximation has been used along with PBE-GGA. The best combinations of both compounds have spectroscopic limited maximum efficiency (SLME) values that are appropriate for solar cell absorbers, at 32.96% and 30.63%, respectively. We have also computed Debye temperature (θ_D) and Grüneisen parameter (γ) to find the lattice thermal conductivity for both the investigated alloys. Thermoelectric properties have been labelled by Seebeck coefficient, electrical as well as thermal conductivities, and figure of merit. The peak values of Seebeck coefficient of 2085 μV/K and 1687 μV/K are observed for In_2TiBr_6 and In_2TiI_6 respectively in the *p*-type regions. Attained results illustrates that the investigated In_2TiX_6 may be contender in thermoelectric due to their high figure of merit in low as moderate temperatures. Our results suggest that these materials are viable for use in thermoelectric devices.

Keywords: DFT, Electronic Properties, SLME, Transport Properties, Figure of Merit.

Abstract Id: ETRD24196

Interval Valued Neutrosophic Vague Semi Generalized Connectedness

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Abstract

The aim of this paper is to introduce and examine some of the various types of connected spaces that can exists in an interval valued neutrosophic vague topological space including interval valued neutrosophic vague $\mathcal{F}_5$- connected space, interval valued neutrosophic vague generalized connected space and interval valued neutrosophic vague semi generalized connected space. Furthermore, interval valued neutrosophic vague semi-generalized super connected space with interval values is presented. Additionally, we derive several properties and characterizations of connectedness in these spaces.

Index Terms - Interval valued neutrosophic vague topological space (IVNVTS), Interval valued neutrosophic vague $\mathcal{F}_5$ - Connected space (IVNV $\mathcal{F}_5$ - connected space), Interval valued neutrosophic vague generalised connected space (IVNV$\mathcal{g}$ -connected space), Interval valued neutrosophic vague semi generalised connected space (IVNV$\mathcal{sg}$ - connected space), Interval valued neutrosophic vague semi generalised super-connected space (IVNV$\mathcal{sg}$ - sup. connected space).

Abstract Id: ETRD24197

Chironji (Buchanania Lanzan Spreng.): A Multipurpose Tree for Conservation and Sustainable Production Through Stem Cuttings

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Abstract

Chironji (*Buchanania lanzan* Spreng.), a multipurpose tree from the Indian subcontinent and part of the Anacardiaceae family, thrives in forested areas but remains underutilized despite its historical significance in agroforestry and social forestry. Its resilience to harsh climates makes it ideal for wasteland development and dry land horticulture. Recognized as a red-listed medicinal plant of Indian origin, Chironji demands comprehensive conservation efforts. The primary challenge is its low reforestation and domestication rates, necessitating reliable and rapid mass multiplication methods through vegetative propagation techniques like stem/branch cuttings, root cuttings, grafting, and air-layering. While root cuttings are destructive and limited, stem cuttings offer a conventional, cost-effective, and convenient vegetative propagation method for woody species. Research evaluating plant growth regulators such as IAA and IBA (400, 800, 1600 ppm) on softwood and semi-hardwood cuttings revealed significant findings. Semi-hardwood cuttings treated with IBA 400 ppm showed the earliest sprouting (10 days), highest number of sprouts per cutting (14.33), sprouting percentage (37.04%), and longest sprout length (7.67 cm). Additionally, these cuttings exhibited the fastest root initiation (23.12 days), highest rooting percentage (81.67%), and most roots per cutting (20.34). These results indicate that semi-hardwood cuttings treated with IBA 400 ppm are most effective for promoting both shoot and root development in Chironji, making this method suitable for mass production. This approach supports the conservation and sustainability of Chironji, fulfilling market demand while preserving its ecological value.

Keywords: Chironji, Growth Regulators, Conservation, Sustainability, IBA, IAA

Abstract Id: ETRD24198

Addressing Climate Change Impacts on Dimocarpus Longan in Western Ghats

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Abstract

Dimocarpus longan is an endemic tree species holding ecological, economic and cultural value indigenous to Western Ghats contributing to the biodiversity. Global climate changes causing significant challenges such as variations in the timing, duration, and synchronization of phenological events of tropical forest tree species. The high temperature and irregular rainfall patterns reduced fruit yield and increase susceptibility to pests. The effects of temperature and precipitation changes the growth pattern, reproduction, and distribution of D. longan. Addressing these impacts is crucial for the preservation of endemic species in global biodiversity hotspots. The major challenges to this species include habitat fragmentation, deforestation, and climate change enhancing the genetic vulnerability of these populations. The vulnerability of D. longan to climate change, highlights the urgent need for adaptive management strategies. To safeguard this endemic species, conservation initiatives should prioritize such as habitat restoration and ex-situ conservation measures. Emphasis should lay on broader issues encompassing habitat preservation and restoration. Moreover, genetic management can be a key measure to ensure their population viability and its preservation in the Western Ghats. Therefore, preserving the genetic health and ecological integrity of this species is a concern. To overcome these issues continued research and conservation efforts are essential to protect D. longan biodiversity of the Western Ghats.

Keywords: Dimocarpus Longan, Climate Change, Conservation Strategies, Endemic Species, Biodiversity, Western Ghats.

Abstract Id: ETRD24199

Energy Deposition in the Ionosphere During a Solar Flare with Extreme-Ultraviolet Late Phase

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Abstract

Solar extreme-ultraviolet (EUV) irradiance is the dominant energy source for ionizing and heating the Earth's upper atmosphere. It is common to assume that the spectra of different EUV lines follow the same trend to fill the solar EUV irradiance gap for modeling purposes due to inadequate EUV irradiance measurements. However, the spectra across the EUV bands may not vary in the same trend. The flare radiation energy release in the EUV (10–120 nm) is about twice as much as X-rays (0.1–10 nm) during the flare interval ~03–06 UT on October 23, 2012. By assimilating the observed nonuniform varying, time-dependent, and high-resolution solar spectrum from the Solar Dynamics Observatory mission into the modelling framework, we provide the first direct evidence of nonuniform varying solar EUV fluxes during the solar flare EUV late phase (ELP), having appreciable effects on the dayside ionosphere. The total EUV radiation energy release (5.838 × 10^28 erg) during the flare ELP is larger than that (5.698 × 10^28 erg) during the flare main phase. The ELP of an X1.8-class solar flare on October 23, 2012, can increase the dayside ionospheric density at the subsolar point by ~5 TECU, and the ionospheric density enhancements extend from the bottom to the peak of the F2 region at low latitudes with relative changes ranging from ~20% to ~100%. Our results highlight the importance of incorporating a realistic, high spectral and temporal resolution solar irradiance spectrum into numerical models, such as the IRI Model 2020, to capture the observed time-varying ionospheric response to solar flares.

Keywords: International Reference Ionosphere (IRI), Extreme-ultraviolet (EUV), Extreme-Ultraviolet Late Phase (ELP), Total Electron Content (TEC)

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Abstract Id: ETRD24200

Impact of Solar Flare Extreme-Ultraviolet Late Phase on Ionospheric Currents and Solar Wind Modulation

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Abstract

Solar flares are known to affect the current system of the middle- and low-latitude ionosphere, with most earlier studies focusing on these effects during their impulsive phases. Recent research has highlighted the occurrence of flares with a significant extreme ultraviolet (EUV) late phase, but the impacts of this phase on ionospheric currents have not been extensively studied. In this study, we analyze the solar quiet (Sq) currents and equatorial electrojets during two X-class flares with EUV late phases, utilizing data from over 200 ground magnetometers. Our findings reveal that ionospheric currents can be significantly enhanced during the impulsive phase, while the effects of the EUV late phase may increase global ionospheric currents, although these effects are often weak and can be obscured by changes in solar wind conditions. For the X1.8 flare event on October 23, 2012, the currents were influenced by solar wind pressure in addition to the solar flare effects. During the X1.3 flare event on April 25, 2014, when solar wind pressure was weak and stable, the Sq currents were enhanced compared to non-flare conditions. We also discovered that even minor changes in solar wind dynamic pressure, as low as ~2 nPa, which are often overlooked, can have a significant impact on the global ionospheric current system.

Keywords: Solar flares**,** Extreme-Ultraviolet Late Phase (EUV)**,** Ionospheric Currents**,** Solar Quiet (Sq) Currents.

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Abstract Id: ETRD24201

Unveiling Symmetry Patterns in Magnetohydrodynamics Equations: A Comprehensive Analysis

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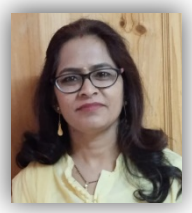
Abstract

Magnetohydrodynamics (MHD) equations govern the behavior of conducting fluids in the presence of magnetic fields, playing a pivotal role in understanding phenomena ranging from astrophysical plasma dynamics to industrial applications like fusion reactors. This research paper explores the application of symmetry analysis techniques to MHD equations, aiming to uncover hidden structures and facilitate the understanding of complex fluid dynamics. The paper provides an in-depth investigation of symmetry groups, Lie symmetries, and their implications in elucidating the behavior and solutions of MHD equations. Through illustrative examples and case studies, this paper demonstrates the utility of symmetry analysis in unravelling fundamental patterns and facilitating the solution of MHD problems.

Keywords: Lie symmetry, Magnetohydrodynamic Turbulence, Magnetic Reconnection, And Astrophysical Plasma Dynamics.

Abstract Id: ETRD24202

Environmental Impacts of Road Construction in India: Challenges, Mitigation Strategies, and Future Directions



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Abstract

Road construction is vital for economic development and connectivity in India, but it also poses significant environmental challenges. This research paper examines the environmental impacts of road construction in India, focusing on issues such as habitat loss, air and water pollution, and biodiversity degradation. Through a comprehensive review of literature and case studies, this paper identifies the key environmental concerns associated with road construction and explores potential mitigation strategies. It also discusses policy interventions and technological innovations aimed at minimizing the environmental footprint of road infrastructure projects. By highlighting the complex interplay between road development and environmental sustainability, this paper seeks to inform policymakers, planners, and stakeholders on the importance of adopting holistic approaches to infrastructure development in India.

Keywords: - Road Construction, Environmental Impact, Environmental Challenges.

About - Govt. Vivekanand PG College

This college is situated at maihar which is a famous religious and industrial place. it is just three kms away from maihar railway station and is nicely connected with maihar-satna road. it is ensconced in the idyllic environs of villaancege umari paila. the famous oila ashram of swami neelkanth maharaj lies in its vicinity. the tample of maasharda devi and the immense contribution of music maestro ustad babaallaudin khan have turned maihar into a place of international importance.

This college was established in the year 1972 and was subsequently made a govt. college in 1986. in 1995 post graduate classes in arts, science and commerce faculty were started and proved tremendously beneficial to students. it is affiliated to APS. university, Rewa and is the preferred exam center for different university examinations. it is recognized under section 12b of UGC act and hence has been receiving developmental grants for the last 13 years.

this college enjoys a leading position in sports at district and state level. NCC unit for girls and NSS units are functional and doing well. there is one career counselling cell which, with different innovative and student-friendly modes and methods, guide the students and helps them chart out their career graphs. citizen charter is given importance to and proctorial board keeps a constant vigil on all the activities on the college campus. janbhagidari samiti, under the able and enviable leadership of its president, is doing commendable work for the progress of the college.

About - Kahaar Magazine

Professor H.S. Srivastava Foundation, Lucknow (www.phssfoundation.org), Prithvipur Abhyudaya Samiti, Lucknow (www.prithvipur.org) and Vivekananda Yuva Kalyan Kendra, Padrauna, jointly started “Kahar” Magazine was started in 2014, with the aim of spreading the philosophy, methodology and technological achievements of science to the masses. To make people acquainted with the work culture and public utility of scientific achievements, the magazine was planned to be multilingual and multidisciplinary. Since our main objective is to bring the merits of science to the masses, from the very beginning, we have tried to weave languages, dialects, genres and subjects together in a single string. It is our endeavor that readers and writers should not face any language and communication barriers. The name "Kahaar" was culturally used in many areas for a human carrier who had been carrying gifts and utilities from one place to another. This magazine is also intended to carry the knowledge, analysis and information from the experts of scientific understanding to the readers. We feel that our readers should not understand science as mere the technological achievements, but understand science in a holistic way with its philosophy, principles and work culture which is the core strength of technological outcome. The principles and methods of literature and art forms can make science communication livelier and more effective, so “Kahaar” magazine welcomes various forms of literature and arts to communicate science. Later in 2017 Society for Environment and Public Health (SAFE), Lucknow also joined hand in its publication. Keeping in view the need of the hour, the online portal of “Kahaar” Magazine (www.kahaar.org) has also been started recently in collaboration with Bachpan Creations, Lucknow. All writers, journalists and readers are welcome on this platform.

About - KPS Science Academy

The KPS Science Academy continuously working since 2013 in the field of education, primary goal of KPS Science Academy is to spread knowledge from primary to higher studies. Under the academy runs a higher secondary school and a middle school and is doing many works related to social service. It also funds scientific research. Many scientific research papers of this institute are published. And books have been published at the international and national level. Social and human upliftment work is also done by the organization from time to time and the fees of the needy children are paid by the institute in the school. The founder of the academy Prof. Naveen Kumar Singh is passionate about the children education and support the primary education for needy children, he is the recipients of many global and national awards for primary education support.

About - Ferrenzo India Pvt. Ltd.

Established in the year 1983 by Mr. M.L Soni, Ferrenzo India Pvt Ltd, is identified amongst the recognized manufacturer and trader of a quality approved range of CRGO Laminations, Transformer Cores, Bright-Bar & U-bolt etc. The provided range is highly acknowledged in the market for their features such as high durability, easy to install, corrosion resistance, high tensile strength, precise design and long-lasting nature. This range is made available in numerous specifications as per the demands of our valued customer and at cost effective prices. The offered products are manufactured by our deft team of professionals in compliance with the global quality standards using the optimum quality raw materials procured from the genuine vendors of the industry.

Over the years we have built a strong reputation among our clients. Our directors are Mr Rajesh Soni, Mr Mannu Lal Soni, Mrs Geeta Soni and Mr Brajesh Soni.

We are one of the most reliable sources of quality products, leading CRGO Laminations, Transformer Cores, Bright-Bar & U-bolt manufacturer and Suppliers of central India. Offers an ideal choice where requirements for dimensional accuracy are most important, we provide Products that are available in varied sizes and specifications to suit the requirement of clients. Our range is widely acknowledged for robust construction and optimum performance.

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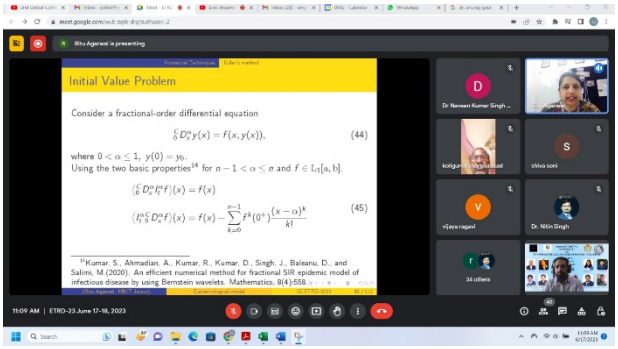
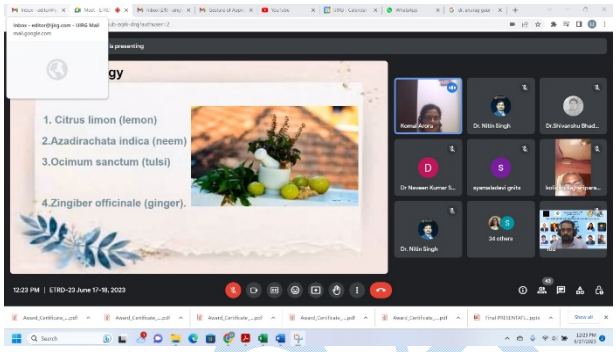
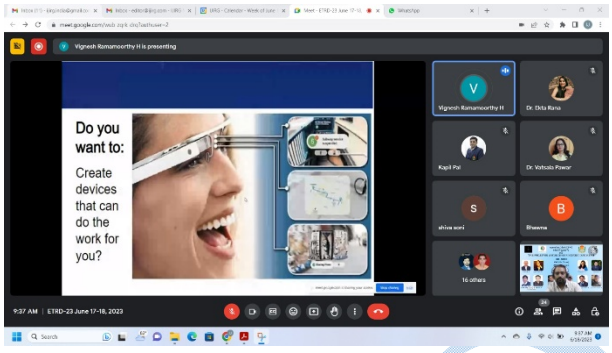
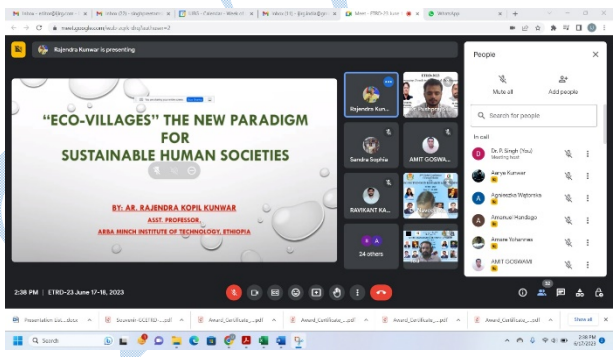
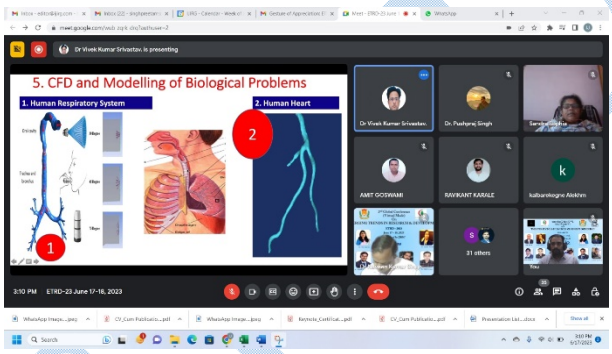
Glimpses of 2nd Global Conference ETRD - 2023

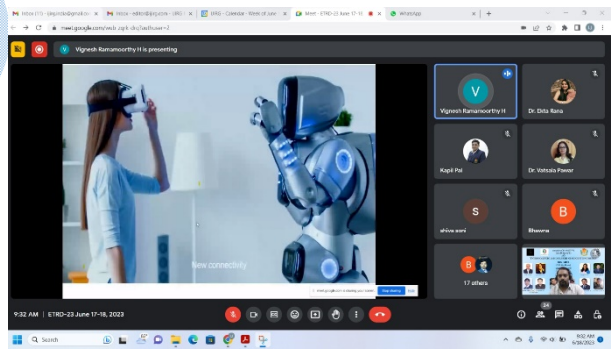


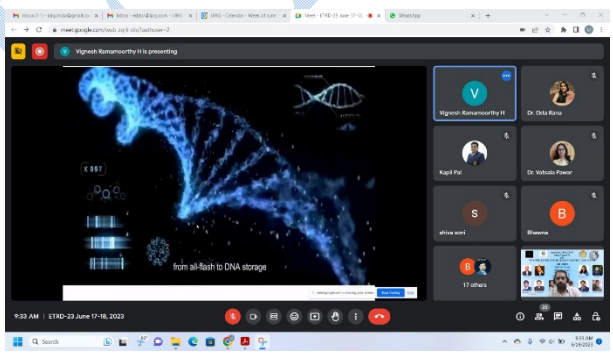


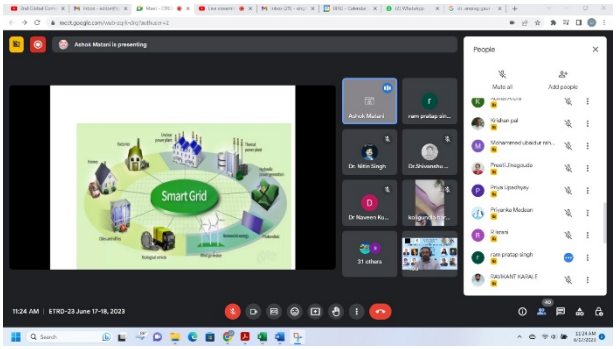












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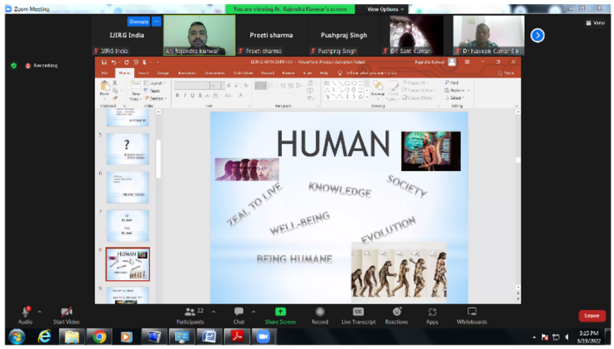

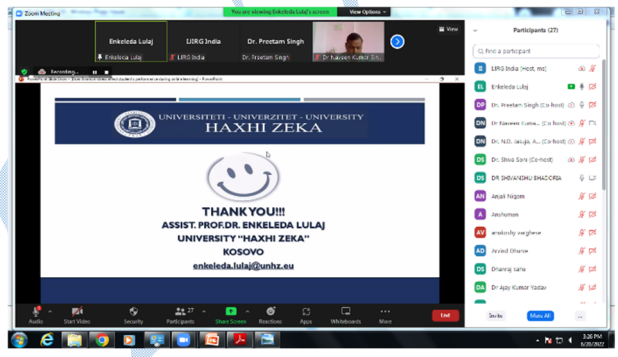

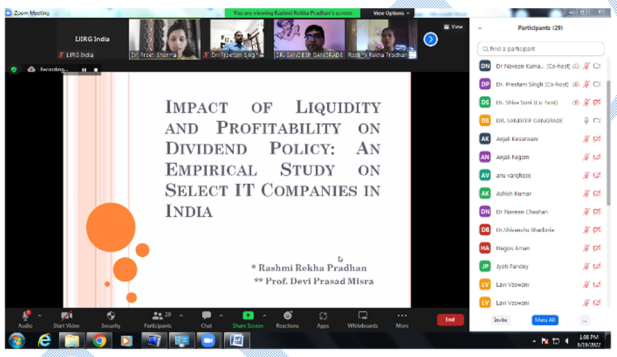

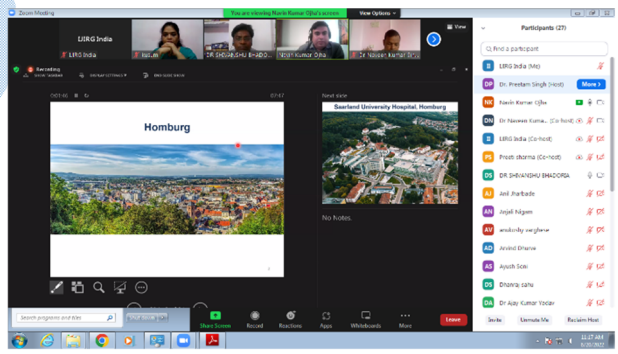

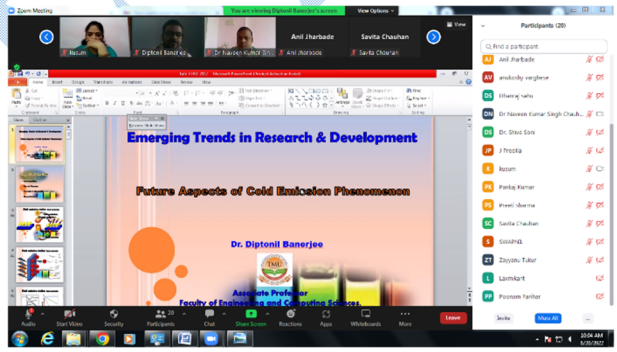

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH & GROWTH (IJIRG)

A Peer Reviewed Journal ISSN: 2455-1848,

Indexed with Crossref for DOI: 10.26671

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