



Maulana Azad National Urdu University
(A Central University)
Hyderabad, Telangana, India



Abstracts & Souvenir



International Urdu Science Conference on
Science for a Sustainable Future
(IUSC-2024)

4th & 5th March-2024

(In Hybrid Mode)

Organized by:
School of Sciences
Maulana Azad National Urdu University
Hyderabad - 500032, Telangana, India

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Keynote Speaker

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Mathematical Sciences



Review of Solving Differential Equations through the Wavelet Methods and its Applications

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Abstract

The Wavelet method is a recent development approach in Applied Mathematics. Elaborations of Different Wavelet methods for their diversified analysis is a dynamic concept through waves attained more and more importance in engineering research.

Beginning to provide good solutions for Differential equations has to capture the non-linearity in the data diversification. An appropriate tool such as different wavelet methods is used to provide a good mathematical model for scientific phenomena which are usually modelled through linear and nonlinear differential equations.

Review shows that the wavelet methods are efficient and Powerful in solving large classes of linear, nonlinear, delay, reaction-diffusion equations etc. This review intends to provide the great utilization of wavelets to applied science and Engineering field problems which origin in 1919 also futuristic approach indications are involved in developing wavelet algorithms for solving linear and nonlinear differential equations are addressed.

Keywords and phrases: wavelet methods, linear and nonlinear differential equations.

Comprehensive Review of Ricci Soliton Inequalities in Riemannian Geometry

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Abstract

Ricci Soliton inequalities form a significant area of study within Riemannian geometry, offering deep insights into the geometric and analytic properties of Riemannian manifolds. This article provides a comprehensive overview of Ricci Soliton inequalities, summarizing their historical development, fundamental concepts, key results, and applications. We explore various types of Ricci Solitons, including shrinking, steady, and expanding Solitons, and examine the rich interplay between curvature conditions and geometric inequalities. Additionally, we discuss recent advancements, open problems, and potential directions for future research in this fascinating field.

Mathematics Subject Classification. 53C25, 53C40, 53C44, 58E11, 37C75.

Keywords. Ricci Soliton, Contact Pseudo-Slant-Submanifold, Gradient Ricci Soliton, Para Sasakian form, Statistical Submersions, Isotropic and Lagrangian Submanifold.

Applications of Generalized Formable Integral Transform with Psi-Hilfer-Prabhakar Derivatives

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Abstract

This study focuses on exploring the generalized forms of the Riemann-Liouville, Caputo, and Hilfer fractional derivatives in terms of Ψ functions through the use of the generalized Formable integral transform. The Ψ -Prabhakar, Ψ -Hilfer-Prabhakar fractional derivatives, and their regularized form are described in terms of Ψ -Mittag-Leffler functions. The study then applies these results to solve various Cauchy-type equations involving the Ψ -Hilfer-Prabhakar fractional derivative and its regularized form.

Keywords and phrases: Prabhakar integral, Prabhakar derivative, Hilfer-Prabhakar derivatives, Jafari integral transform, Fourier transform, Mittag-Leffler functions.

A Fluid flow and Heat transfer problem in Porous Media

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Abstract:

This paper deals with a steady flow of a viscous fluid of finite depth in a porous medium over a fixed horizontal, impermeable, and thermally insulated bottom whereas the other side is stress-free and kept at a constant temperature with a constant heat source distributed uniformly in the flow region. Exact solutions of Momentum and Energy equations are obtained when the temperatures on the fixed bottom and on the free surface are prescribed. Flow rate, Mean velocity, Temperature, and Mean Temperature have been obtained and a special case of large values of porosity parameter is also discussed in the end. The results are illustrated graphically.

Keywords: Porous Media, Porosity, Velocity, Mean Velocity, Temperature, Mean Temperature

A Comprehensive Review of Braid Groups

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Abstract

This paper is about basic facts of braids and braid groups B_n , in particular, some elementary results of B_3 are discussed. Also, an introduction to the representation of braid groups and a glimpse of the conjugacy problem in braid groups is provided.

A Brief Look on Braid Group Cryptography

The central theme of this paper is public key cryptography whose basis is Braid group B_n , which is a highly non-commutative group. Specially braid groups are considered because difficult computational problems can be done easily in B_n . In this paper, we provide an essential background of braid groups useful for cryptography and focus on two prominent protocols based on braid groups and some known attacks on them.

A right module M over an associative ring R with unity is a QT AG-module if every finitely generated submodule of any homomorphic image of M is a direct sum of uniserial modules. This article considers the closure of h -pure- S -high submodules of QT AG-modules. Here, we determine all submodules S of a QT AG-module M such that each closure of the h -pure- S -high submodule of M is h -pure- S -high in M . A few results of this theme give a comparison of some elementary properties of h -pure- S -high and S -high submodules.

Keywords: QT AG-modules; closures; h -pure- S -high submodules

Analysis of EEG Signals by Wavelet Transformation

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Abstract

EEG stands for Electroencephalogram, it is a test that records electrical activity in the brain using electrodes placed on the scalp. EEGs (Electroencephalographms) are the records of brain electrical activity. EEG signals can be used in the diagnosis of various diseases such as neurological disorders, epilepsy, Alzheimer's, etc. In this review, researchers discuss the common artifacts that defile EEG signals while recording. The properties of EEG signals can be magnified by the usage of wavelets. Fluctuations like alpha, beta, theta, and gamma, can be studied and related to the abnormalities. Wavelet transform is an effective tool for the analysis of non-stationary signals such as EEGs. In this review, we will see the richness of CWT over the conventional time-frequency analysis technique.

Keywords- Eeg Signals, Artefacts, Wavelet Transformation, Cwt

Pitchfork Domination and its inverse in an undirected graph

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Abstract

Let $G = (V, E)$ be a finite simple and undirected graph without isolated vertices. An undirected graph $G_{m,n}$ is defined as a graph whose vertex set $V = In = \{1,2,3, \dots \dots\}$ where $u, v \in V$ are adjacent if and only if $u \neq v$ and $u+v$ is not divisible by m where m belongs to natural numbers greater than 1. A subset D of V is a pitchfork dominating set if every vertex $v \in D$ dominates at least j and at most k vertices of $V - D$, for any non-negative integers j and k . A subset D^{-1} of $V - D$ is an inverse pitchfork dominating set concerning D if it is a dominating set. The minimum cardinality of all pitchfork dominating sets in G is called the pitchfork domination number of G , denoted by (G) . The inverse domination number of G , denoted by $\gamma_{pf}^{-1}(G)$ is the minimum cardinality of all inverse pitchfork dominating sets in G . In this paper, an implementation of pitchfork domination and its inverse is given on an undirected graph $G_{m,n}$. Evaluations and proofs are given for (G) and $\gamma_{pf}^{-1}(G)$ in an undirected graph $G_{m,n}$, for different values of m and n .

Keywords: Pitchfork domination, inverse pitchfork domination, undirected graph $G_{m,n}$, AMS Subject Classification: 05C69

q-Analogue of the Shift Operators

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Abstract

This paper explores the q -analogs of operators introduced by Dattoli and colleagues, focusing on pseudo-Kampé de Fériet polynomials. These polynomials complement the theory of fractional derivatives and partial fractional differential equations of evolution type. Our investigation demonstrates that these families of operators enable the treatment of various q -exponential operators, thereby offering generalised fractional forms of q -shift operators.

Resonances in the planetary systems

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Abstract

Resonance is a phenomenon that ensues when there's a numerical relationship between frequencies or periods. This simple ratio of periods hides complex relations. Resonance is a subtle gravitational effect which contributes to determination of dynamical structures. It results in stable as well as unstable interaction.

In this paper we study resonance in an N-body system and apply it to an exoplanetary system. The work will give us an insight into planet formation, the location of the planets, the position of satellites of planets, and gaps in the rings around planets. We compare our theoretical models with data available in the NASA exoplanet database.

Keywords Resonance, N-body system, planetary systems, Exoplanets.

Transmission effects of communicable disease

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Abstract

Numerous mathematically researched models have been developed and applied to particular diseases to explain how infectious diseases propagate through populations. The focus of this work is to examine the behaviour of two rival species while one of them is ill. Our responses address several significant inquiries on the environment's long-term behaviour. No population is inevitably wiped out in this scenario. Furthermore, not every member of the afflicted species will inevitably get sick. Lastly, populations with chronic cycles brought on by disease are acceptable.

A Mathematical Model of fluid flow in a channel

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Abstract

In this article we investigate Newtonian incompressible fluid flow in a channel of varying cross-section by considering the rigid permeable boundaries. The motion of the fluid is laminar and steady. It is assumed that the exchange of fluids across the wall obeys Starling's

hypothesis Further, we prescribe the inlet and outlet mean pressures. By employing the perturbation technique, analytical expressions for the velocity profile, pressure distribution are obtained. The effect of permeability k , Reynolds number Re on axial, radial velocity, shear stress, and pressure drop for different geometries of the channel are studied and explained graphically.

Keywords: Newtonian, perturbation method, permeable wall.

Relativistic Spacetime Mainfold Endowed With String Cloud Eneergy-Momentum Tensor

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Abstract

The goal of the study article is to analyze the behavior of spacetime using a string cloud energy-momentum tensor called a "relativistic string cloud spacetime" that has a string cloud fluid density called ρ and a string tension called λ . Using a declining space matter tensor and a divergence-free matter tensor, we can produce certain results for string cloud spacetime. Next, we address certain curvature properties for relativistic string cloud spacetime, including conformally flat, Ricci semi-symmetric, and pseudo-Ricci symmetric. Additionally, we provide a condition that is consistent with the state equation for the Ricci semi-symmetric string cloud spacetime.

Strategic Inventory Management for Profit Optimization in Declining Markets

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Abstract

In the face of a competitive and ever-changing business landscape, companies often grapple with the challenge of sustaining their products in declining markets. To combat this issue, effective strategies such as promotional efforts play a pivotal role in boosting demand and maintaining market position. Additionally, businesses are increasingly focusing on ecological safety and greening efforts to minimize their environmental impact while ensuring the production of environmentally friendly products. These green initiatives not only contribute to environmental sustainability but can also enhance retailer profitability. This article presents an innovative inventory model tailored for perishable products within a stochastic environment. The model integrates elements such as linear pricing, time dynamics, promotional efforts, and a demand rate that depends non-linearly on the level of greening

efforts. The model also considers partial backlogging of shortages, lost sales, time-dependent product deterioration, and investments in preservation technology to mitigate deterioration effects. The primary objective is to calculate the retailer's profit function, taking into account cycle time, selling price, promotional effort, and greening effort as key variables. To address this complex problem, the article introduces an algorithm for finding feasible solutions. Furthermore, the concavity of these solutions is demonstrated through graphical analysis. A numerical example is provided to illustrate the application of the model, and sensitivity analysis is conducted to elucidate how changes in inventory parameters impact decision variables.

Keywords: Declining Market, Price-Time-Promotional Efforts and Green Level-Dependent Demand, Pricing Strategies, Inventory Management, Stochastic Demand, Partial Backlogging, Lost Sales, Deterioration, Preservation Investment

Mathematical analysis of a nonlinear SIS model with limitation of individual movement

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Abstract

We consider a nonlinear SIS epidemic model with nonlocal disease transmission rate, diffusion in space and restriction of population movement across the boundary. Well posedness of the model are studied using semigroup theory. Existence and Uniqueness of steady state are studied using spectral analysis and strongly continuous semigroup theory. Steady state is indeed shown to exhibit local stability.

Keywords: SIS epidemic model, nonlinear transmission, fixed points, semi-group, local stability.

Mathematics subject classification: 35B35, 35Q92, 47H10, 92D25.

Fixed Point Approximation in CAT(0) Spaces

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Abstract

In the present paper, we focus on the re-examination of a unified three step iteration scheme in more general in geodesic CAT(0) spaces for asymptotically non-expansive mappings. The findings hold true for both asymptotically non-expansive type mappings and asymptotically

quasi-nonexpansive mappings. Since numerous iteration schemes have been introduced for so long and also claimed new and different from others which shows a huge lack of existing iteration literature. It is to be noted that there are several iteration schemes which are claimed to be different and unique but are special cases of some existing scheme. Our results improve the existing iteration scheme-based literature.

Keywords: CAT(0) spaces, asymptotically nonexpansive mappings, fixed points, unified iteration, Δ -convergence, strong convergence. 2000 Mathematics Subject Classification: 54H25, 54E40.

Ricci soliton on deformed C_{12} manifolds

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Abstract

This study centres on the exploration of specific deformations applied to almost contact metric manifolds, preserving the intrinsic structure of C_{12} -manifolds. Subsequently, our investigation delves into the realm of Ricci solitons within the context of C_{12} -manifolds subjected to such deformations. A detailed analysis is undertaken to understand the behaviour of Ricci solitons,

Particularly when the potential vector field exhibits pointwise co-linearity with the Reeb vector field or is orthogonal to it.

On Factorization of Polynomials in Skew Polynomial Rings: Resolution of a Conjecture, New Results and New Linear Codes

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Abstract

Skew cyclic codes and their generalizations are an active area of research in coding theory with many challenging and open problems. In this work, we settle a conjecture about the factorization of polynomials in a skew polynomial ring. Moreover, we prove additional results about such factorizations, and present new linear codes obtained by the help of theoretical results and computer searches.

New class of locally conformal Kähler manifolds

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Abstract

The purpose of this paper is to introduce a new class of locally conformal Kähler (l.c.K.)

manifolds which will generalize the Vaisman manifold. Then, some basic properties of this class is discussed, also the existence of such manifolds is shown with concrete examples.

Keywords: Locally conformally Kähler structure, Lee vector field, K-torse forming vector field.

Recent Advancement in Golden Riemannian Geometry

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Abstract

In differential geometry, the theory of Golden structure, introduced by [1] in the 1970s, is an intriguing subject with numerous applications. Hretcanu et al. [2] started the study of Golden Riemannian manifolds, in the spirit of Golden structure. Since then, many authors have produced a number of fascinating findings on the Golden Riemannian manifold. This article offers an in-depth review of the most recent advancements made in over a decade in the Golden Riemannian manifold.

Mathematics Subject Classification. 53B05, 53B20, 53C15, 53C25, 53C40, 52A20, 52A39, 53C42.

Keywords. Golden Riemannian manifold, Golden-like statistical manifolds, Lorentzian Manifolds, Chen's Inequality, Wintgen Inequality, Casorati Curvature.

Reference:

[1] Goldberg, S. I., & Yano, K. (1970). Polynomial structures on manifolds. In *Kodai Mathematical Seminar Reports* (Vol. 22, No. 2, pp. 199-218). Department of Mathematics, Tokyo Institute of Technology.

[2] Crasmareanu, M., & Hretcanu, C. E. (2008). Golden differential geometry. *Chaos, Solitons & Fractals*, 38(5), 1229-1238.

Q tag-Modules Whose H-Pure-S-High Submodules Have Closure

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Abstract

A right module M over an associative ring R with unity is a QT AG-module if every finitely generated submodule of any homomorphic image of M is a direct sum of uniserial modules. This article considers the closure of h-pure-S-high submodules of QT AG-modules. Here, we determine all submodules S of a QT AG-module M such that each closure of h-pure-S-high submodule of M is h-pure-S-high in M . A few results of this theme give a comparison of some elementary properties of h-pure-S-high and S-high submodules.

Keywords: QT AG-modules; closures; h-pure-S-high submodules.



Engineering and Technology

Optimal Energy Utilization in Cloud Services: Achieving Optimal Service Quality

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Abstract

Cloud data centers' high energy consumption is a serious concern. In data centers, dynamic consolidation of virtual machines (VMs) offers a big chance to reduce energy consumption. In order to enable the low-power mode of operation of certain underloaded Physical Machines (PMs), VM consolidation techniques involve live migration of VMs. However, it's crucial to get the required Quality of Service (QoS) between cloud providers and their customers. Energy conservation is a significant problem in virtualized cloud computing systems since it can have numerous positive effects, including lower operating costs, higher system efficiency, and environmental protection. To achieve both objectives at the same time, an energy-efficient work scheduling technique is a practical option. Sadly, it can be very difficult to map cloud resources to user requests so that optimal performance is achieved by limiting cloud resource energy usage within a user-specified timeframe. In order to address the problem of energy consumption, Consequently, the primary challenge is to lower data center energy consumption while still meeting QoS standards. In this paper, we describe a distributed system architecture to accomplish dynamic virtual machine consolidation, which lowers cloud data center energy usage while preserving the required quality of service. We employ the Ant Colony System (ACS) online optimization metaheuristic algorithm since the virtual machine consolidation problem is strictly NP-hard. A near-optimal solution is found using the suggested ACS-based VM Consolidation (ACS-VMC) method in accordance with a given objective function. In a cloud data center, ACS-VMC lowers energy consumption while preserving the necessary performance levels, according to experimental results on real workload traces. It performs better than current VM consolidation techniques in terms of energy usage, the quantity of VM migrations, and performance-related QoS needs.

Keywords: QoS, Virtual Machines, Cloud Services, Ant Colony System

Optimizing Tourist Trails through Advanced Recommender Systems in Tourism Science

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Abstract:

With the continuous growth of the tourism industry, there is an escalating need for personalized and efficient travel guidance to cater to diverse traveler preferences. This research paper introduces an innovative approach to tourism recommendations by leveraging Artificial Intelligence (AI) techniques. The proposed AI-based Tourism Recommendation System (AI-TRS) employs advanced machine learning algorithms and data analytics to analyze vast datasets, including user preferences, historical travel patterns, and real-time information. The primary objective of this paper is to propose the AI-TRS in providing personalized and context-aware travel recommendations. The system utilizes machine learning and sentiment analysis to understand user reviews, thereby improving the accuracy of suggestions. Additionally, the AI-TRS integrates geospatial data to offer location-specific recommendations, ensuring that users receive tailored suggestions based on their current or intended destination. The proposed system has the potential to revolutionize the way travelers plan and experience their journeys, enhancing overall satisfaction and engagement in the tourism industry. As technological advancements continue to shape the future of travel, the outcomes of this research offer valuable insights into the efficacy of AI-driven solutions in optimizing tourism experiences. By addressing the limitations of existing recommendation systems and highlighting the advantages of the proposed AI-TRS, this paper contributes to the ongoing discourse on leveraging artificial intelligence to create more personalized and efficient travel guidance systems. The implications of this research extend beyond academic interest, influencing the practical implementation of innovative technologies in the rapidly evolving domain of tourism.

Advantage, Benefit, Constraint and Disadvantage: ABCD Analysis of combining Blockchain and Internet of Things

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Abstract:

Internet of Things are providing connectivity of devices and information for the access of trillions of data. Securing this plethora of devices and data is a tedious task. Blockchain Technology became the ray of hope in the analytic era due to its higher security features. Here, in the paper author presented the ABCD (Advantages, Benefits, Constraints and Disadvantages) analysis of combining Blockchain Technology with the Internet of Things. With the advancement in Distributed Ledger Technology, Blockchain Technology came into existence with its strong cryptographically secure features. Some advantages of combining Blockchain Technology with IoT are a Decentralized Network, Transparency and Anonymity. Some Benefits are Automation, Auditability, and Traceability. Some Constraints are High transaction cost, complex integration process and lack of acceptance. Some disadvantages are Selfish mining process and Energy consumption. In this paper detailed analysis of all four components is discussed.

Keywords: Internet of Things, Blockchain Technology, Decentralized network

Sustainable Flexibility: Empowering Business Processes with Algorand Blockchain Technology

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Abstract

The Algorand blockchain platform stands as a beacon of innovation in the realm of decentralized technologies, not only offering unparalleled flexibility for businesses but also championing sustainability principles essential for the future of our planet. This abstract delves into Algorand's unique capabilities that not only enhance business processes but also contribute to sustainable practices and environmental stewardship.

Algorand's foundation rests upon a sustainable consensus mechanism known as Pure Proof of Stake (PPoS), which minimizes energy consumption compared to traditional proof-of-work systems. This energy-efficient approach ensures that Algorand remains environmentally friendly while providing high transaction throughput and rapid finality,

crucial for modern business operations. Moreover, Algorand's commitment to sustainability extends beyond its consensus mechanism, with a focus on reducing carbon footprints and promoting eco-friendly practices throughout its ecosystem.

In addition to its sustainability credentials, Algorand offers businesses unparalleled flexibility and scalability, empowering them to streamline processes, optimize resource utilization, and drive innovation. Its support for smart contracts and asset tokenization enables businesses to digitize assets, optimize supply chains, and facilitate transparent, auditable transactions—all while minimizing environmental impact. Furthermore, Algorand's interoperability features facilitate seamless integration with existing systems, fostering collaboration and interoperability across diverse ecosystems.

By leveraging the flexibility and sustainability of the Algorand blockchain platform, businesses can not only enhance their operational efficiency and competitiveness but also contribute to global sustainability goals. Whether it is revolutionizing financial services, enhancing supply chain transparency, or promoting renewable energy initiatives, Algorand provides a robust foundation for businesses to drive positive change while securing a sustainable future for generations to come.

Progress in Sentiment Analysis on Social Platform

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Abstract

In the present era, from the various social platforms, WhatsApp, Facebook, Twitter etc, are the mobile and web support applications, widely used instant messaging, facilitates communication through text, media sharing, and group chats. This review explores the WhatsApp chat sentiment analysis and its implications across various domains. We have done research studies that take WhatsApp chat data analysis techniques, such as sentiment analysis and forensic examination, to take the type of conversation insights from WhatsApp conversations. It highlights the challenges posed by informal language, multilingual chats, and the need for contextual understanding in analyzing WhatsApp messages. Additionally, it is also discussed future research directions, including advancements in natural language processing (NLP) for better understanding of informal language and cross-lingual conversations. The comparison with other social media platforms like Facebook and Twitter underscores the unique characteristics of WhatsApp, such as its emphasis on private communication and end-to-end encryption. Different authors used different algorithms in their research work and got good accuracy in support vector machines among them. Further this study also touches upon the evolving role of AI models and the importance of user privacy in online communication platforms.

Keywords: WhatsApp, Chat Analyser, NumPy, wordcloud, Matplotlib and Seaborn, Streamlit API.

Radiomic-Based prediction of Kidney Cancers: A comprehensive analysis

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Abstract

Renal cell carcinoma (RCC) is the most prevalent form of kidney cancer and is responsible for 2% of cancer-related fatalities globally. For a localised tumour, the 5-year survival rate is 93%; if the tumour spreads to distant portions of the body or lymph nodes, it drops to 69% and 12%, respectively. Early detection plays an important role in timely treatment of the affected area. In order to improve diagnostic accuracy and advance customized therapy, our work focuses on using radiomic data analysis for kidney cancer prediction.

Radiomics is a multi-step procedure that makes it possible to transform medical images into high-dimensional, mineable structures. This allows for a thorough examination of entire regions of interest and their association with prognostic, diagnostic, and clinical data. Features from medical images like CT (Computed Tomography) Scan and Medical Resonance Imaging (MRI) capture intricate patterns and textures with renal lesions. Radiomic data-driven from such images will help for early diagnosis of Cancers. Moreover it will help medical practitioners to bypass the biopsy procedure where a sample is taken from the affected area and operated accordingly for the detection of renal cancers

In conclusion, this research will help in early prediction of kidney cancers and will pave further ways for the strong foundation of renal cancers thereby advancing the field of Oncology and patient care.

Blockchain Technology: Empowering Sustainability in Smart Cities

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Abstract

Smart cities, fueled by technological innovations, aim to improve urban areas through efficient resource management and a higher quality of life. Ensuring their sustainability is still a significant challenge. Recent studies highlight how blockchain technology can help with important urban issues like waste management, energy management, and healthcare while enhancing security and transparency. Cities can utilize the decentralized architecture, smart contracts, and identity management features of blockchain technology to accomplish

sustainable development goals. This study explores how blockchain technology and smart cities can work together to achieve sustainability goals. Also, it highlights the potential of blockchain technology and addresses important issues in smart cities by analyzing recent literature and case studies that examine blockchain's role in shaping the future of smart and sustainable cities.

Keywords: Smart Cities, Sustainability, Blockchain Technology, Sustainable Development Goals, Urban Resource Management

Concept-Based Representation for Al-Quran Using Ontology and Knowledge Graph for Interpretation of Extremism

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Abstract

Natural language processing plays a crucial role in the Question Answering System, Information Retrieval, and Information Extraction (IE). IE has also become more prominent, especially in linguistics like Arabic language. Nonetheless, there is still a lack of Arabic Information Extraction integration in common applications. Due to resource scarcity and the inherent challenges of the Arabic language, the development of highly accurate Arabic Information Extraction has been impeded. Religious Affairs claims that it provides extremely poor accuracy, which is unacceptable. English language writes left to right but Arabic language writes right to left and it is also a cursive style and no capitalized letter. So, there is a pressing need for precise, specialized systems designed to meet the particular difficulties in these vital domains. The interpretation of extremism in the concept-based representation of the Al-Quran through the use of ontology and knowledge graph techniques. The goal of this work is to develop a thorough framework that makes use of these resources to analyze and evaluate the meaning of the Al-Quran, particularly in relation to assumed extremism. The objective is to offer a significant and persuasive illustration that advances our understanding of the complex facets of radicalism in the Al-Quran and several scholarly investigations have examined the Al-Quran, some concentrating on particular chapters or offering a broad perspective. However, not all of these works used semantic relation methods and knowledge graph representation to make Quranic knowledge easier for computers and humans to understand. This paper aims to present a framework for utilizing the semantic relations and knowledge graph representation between individual sentences and the entire Quranic text to represent the semantic knowledge graph of the Quran.

Keywords: Knowledge Graph Representation, Ontology, Semantic relation, Al-Quran, Cypher Query.

A review of Attribute-based access control mechanism in Blockchain

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Abstract

In today's world of the Internet, the data is readily available with very less restrictions using a wide range of applications, devices, websites, and the like. Various tools and technologies have been devised and deployed to regulate and standardize all kinds of data retrieval, deletion, and modification. Despite all these advancements in technology, the concerns related to data access and visibility have increased exponentially. Blockchain technology is a transformative breakthrough with well-organized data access policies and features. In the past few years, Blockchain has levitated from bitcoins to enterprise-grade applications because of its recognizable and distinguishing features of immutability, transparency, decentralized architecture, and consensus mechanism. These exceptional characteristics make blockchain the most ideal choice for governing data access in all kinds of applications. This data governance can be implemented with the help of well-defined policies that suit the requirements of an application in consideration. These policies are administered by a trustworthy and reliable access control mechanism. Blockchain provisions different kinds of access control mechanisms and Attribute-based access control (ABAC) is one of the most widely accepted mechanisms. ABAC regulates the access not only based on the user role but also based on several attributes of the data, organization, user, and the policies defined by the organization. Several studies were carried out for the advancement of ABAC and have shown significant performance in controlling data access. This study highlights the predominant contributions made by the researchers for the improvement of ABAC.

Early Prediction of Student Dropout in Higher Education using Machine Learning

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Abstract

Higher education student dropout is a continuous issue that affects both academic institutions and students in major ways. In order to improve retention rates and foster student achievement, early detection of students who are at risk of dropping out is crucial for the implementation of prompt interventions and support systems. Promising paths for proactive detection of at-risk kids and predictive modelling can be found by utilising machine learning techniques. Through the examination of many data sources such as academic records, personal data, and engagement measurements, machine learning algorithms are able to detect trends and indicators linked to the dropout rate of students.

The purpose of this study is to investigate how student attrition in higher education settings and machine learning approaches interact. This study aims to enhance proactive student support programmes and evidence-based decision-making in higher education institutions by creating reliable predictive models and comprehending the underlying causes of student dropout. It is possible to completely transform student retention tactics and create a more welcoming and encouraging learning environment for all students by using machine learning approaches into dropout prediction.

The challenge of students dropping out of college or university before completing their education is a significant concern for both institutions and students. Identifying students who are at risk of dropping out early on is crucial for providing timely support and intervention to help them stay on track and succeed academically.

This research aims to explore how machine learning techniques can be used to predict which students are most likely to drop out of higher education programs. By developing effective prediction models, we hope to improve retention rates and create a more supportive learning environment for all students.



Health Sciences

خلاصہ برائے ہیلتھ سائنسز

اعصابی سوزش اور اعصابی عوارض میں گٹ مائکرو بس کا کردار

(Role of Gut Microbes in Neuro-inflammation and Neurological disorders)

پروین جہاں، رشی بھوٹا اور صفیہ جمیل

زولو جی سیکشن، اسکول آف سائنسز، مولانا آزاد نیشنل اردو یونیورسٹی، گچی بوولی، حیدرآباد-32، ریاست تلنگانہ، انڈیا

پوشیدہ دنیا (مائکرو آرگنزمز) کے ساتھ ہمارا تعلق 21 ویں صدی میں بھی ایک معمہ بنا ہوا ہے۔ لیکن سائنس اور تکنیکی ترقی کے ساتھ اس راز کو آہستہ آہستہ کھولا گیا ہے جس سے جسم کے مختلف اجولیاتی نظام جیسے معدے کی نالی (GIT)، جلد، تولیدی نظام وغیرہ میں رہنے والے جراثیموں کے ایک اہم کردار کا انکشاف ہوا ہے۔ گٹ مائکرو بائیوٹا اور مرکزی اعصابی نظام (سی این ایس) کے درمیان ایک دو طرفہ تعلق ہے جسے گٹ برین ایکسس (Gut-Brain axis) کہتے ہیں۔ متنوع جراثیموں کے ساتھ ایک صحت مند آنت دماغی افعال اور جذباتی رویوں کے لیے بہت ضروری ہے، CNS GI فزیالوجی کے زیادہ تر پہلوؤں کو کنٹرول کرتا ہے۔ GIT اور CNS کے درمیان دو طرفہ تعلقات میں تبدیلیاں معدے، اعصابی اور نفسیاتی امراض جیسے الزہیمرز، پارکنسنز، ڈپریشن، تناسل، اضطراب وغیرہ کے روگ جن سے منسلک ہیں۔ ایک صحت مند گٹ مائکرو بائیوٹا (10^{14}) بڑی آنت میں پیچیدہ کاربوہائیڈریٹس اور ریپٹوٹینوں کو ہضم نہ ہونے پر مفید مینا بولائٹس جیسے شارٹ چین فیٹی ایسڈز، سیروٹونن وغیرہ میں پروسس کرتا ہے جس کے متنوع اثرات ہوتے ہیں (i) گٹ بیریز اور بلڈ برین بیریز (BBB) کی سالمیت کو تقویت دینے کے لیے۔ CNS خلیات کی فعال پختگی (مائکرو گلایہ، اولیگوڈینڈروسائٹس اور ایسٹروسائٹس)، (ii) نیوروسوزش کو دباتی ہے (suppress neuro-inflammation) اور (iii) وگس اعصابی محرک (vagus nerve stimulation) کے ذریعے انسداد تناؤ اور اضطراب مخالف (anti-stress and anti-anxiety effects) اثرات فراہم کرتی ہے۔

مائکرو بیل ڈس بائیوسس (Microbial dysbiosis) یا روگ جنک حملے (pathogenic invasion) کے نتیجے میں گٹ بیریز اور BBB ختم ہو جاتا ہے جس کے نتیجے میں نیورول سیل کی موت اور نشوونما کی چوٹ ہوتی ہے جو سی این ایس کی بیماریوں کو بڑھاتی ہے۔ بنیادی خطرے والے عوامل کے ساتھ dysbiosis اشتعال انگیز رد عمل کو ختم کرنے میں حساسیت کا کردار ادا کر سکتا ہے۔ معاشرے میں اعصابی حالات میں اضافے کے منظر نامے میں نیوروسوزش اور dysbiosis کے درمیان تعلق کو سمجھنے کی ضرورت ہے تاکہ نئے علاج کے طریقوں کو تیار کیا جاسکے۔

Awareness regarding screening programs indicating relevance of Genetic

Counseling for improving health indicators in our population

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Abstract

Genetic screening is a systematic program offered to a specified population of asymptomatic individuals whereby a variety of test methods can be used to make a risk estimate regarding

an inherited predisposition to disease. Various health issues can be identified at an early stage for the purpose of disease prevention, early treatment, or family planning. The present study assessed the level of awareness regarding screening programs targeting the General public from India. A total of 214 participants engaged in the online survey designed through Google Forms in two languages: English and Urdu. The questionnaire consisted of 12 questions divided into 2 sections.

Total Female participants were 133 (62.14%) and males 81 (37.85%) in the English survey (total 214) while they there 17 females and 03 males in the Urdu survey (total 20). They belonged to the age group 18 to 65 years. Most of the individuals are educated with only 9% of them being uneducated.

Maximum awareness was for the question which was about tests required in pregnancy with very little difference in men (92.5%) and women (92.4%) as well as educated and uneducated. However, Awareness regarding newborn screening was low around 56% in males to 67% in females which increased with education. However, for the question regarding the carriers of thalassemia, there was a significant difference in the awareness between men (53%) and women (70.6%). The level of awareness ascended by the level of education. A similar response was observed in the question regarding awareness related to Pap test screening for cervical cancer. Men (50.6%) were less aware when compared to women (69.9%). Low Education or no education indicated a lack of awareness in both men and women. Awareness regarding PSA test for Prostate cancer was extremely low in both males (48.14%) and females (54.8%). A vast difference in awareness regarding mammogram screening for breast cancer was seen between males (63.8%) and females (80.8%). Even uneducated individuals were aware about it. We believe that genetic counselors should be attached to screening programs for enhancing public health in India. They should provide pre-test information and post-test counseling if identified to have a high risk

Role of HPV viral load and expression of HPVE6 oncoproteins and host p53 tumor suppressor proteins in the progression of cervical cancer

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Abstract

It is well established that Human papillomavirus is linked with more than 90% of cervical carcinomas. However, the role of copy number, expression of viral proteins and their

interactions with host proteins is not obvious in the initiation and progression of the disease. In the present study we have tried to find the role of HPV viral load and expression of viral protein E6 and host protein p53 in the development of cervical carcinoma. HPV E6 oncoproteins are key intermediaries in cell transformation by disrupting p53 pathways. To examine the exact molecular mechanisms involved in early and advanced stages of cervical cancer, we performed a protein expression study of host p53 tumor suppressor proteins and viral E6 oncoprotein by western blotting in different stages of cervical cancer having variable viral loads and other clinical parameters. We found a dose-response relationship, where the high viral load was associated with a high grade of the cervical lesion and viral E6 protein expression level was positively correlated with viral DNA load. The host tumor suppressor protein p53 expression level was inversely correlated with the expression of HPV-E6 oncoprotein in early and advanced stages of cervical cancer. It is found that the expression level of p53 is initially unregulated in early stages and very low in advanced stages of cervical carcinoma associated with increased protein level of HPV-E6 oncoproteins. The findings suggest that HPV viral load and levels of HPV-E6 and host p53 tumor suppressor proteins together play a significant role in the progression of cervical carcinoma and may thus be used as a potential diagnostic marker for screening and characterization of the early and advanced stages of cervical cancer.

Importance of Newborn Screening: Role of Genetic Counselors in sustaining a healthy future generation

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Abstract

India, the most populated country in the world sees approximately 80,000 births each day. Approximately 2-3 out of 100 children end up with genetic diseases that may not be apparent at birth. Newborn screening (NBS) will help in improving child health in a developing country like India. NBS is critical in identifying children with genetic disorders and helps to provide appropriate treatment and management even before the onset of symptoms. NBS enables the identification of more than 65 disorders, however, a set of 7 conditions that may affect a child's long-term health and survival have been selected in our hospital for evaluation. These include Congenital Adrenal Hyperplasia (CAH), Congenital Hypothyroidism (CH), Galactosemia (GAL), Glucose-6-phosphate Dehydrogenase (G6PD), Phenylketonuria (PKU), Cystic Fibrosis (CFTR) and Homocystinuria. Early detection, diagnosis, and intervention can prevent death or disability and enable children to reach their full potential. Genetic counselors (GCs) help families as well as clinicians understand the

NBS and navigate the clinical outcomes, which would potentially show up later in childhood. GCs also help with deciding further testing using Next Generation sequencing (NGS) to evaluate the underlying genetic variation resulting in the abnormal NBS test.

The neonatology unit at Kamineni Hospitals, L B Nagar, Hyderabad, collected samples on Guthrie cards from 2354 newborns to screen for the basic 7 parameters (NBS7). 86/2354 (3.65%) newborns showed abnormal NBS-7 results. The families were given elaborate genetic counseling after documenting clinical and family history along with a detailed 3-generation pedigree. They were explained the role of screening tests in identifying genetic disorders and in post-test genetic counseling they were informed about treatment/management options, recurrence risk, molecular and cascade testing. GCs help families understand to take informed decisions and plan for subsequent pregnancies. thoughtful planning for a child's health, including genetic counseling plays a key role in building a healthier nation.

p53 protein options in navigating between cell survival and apoptosis with diverse protein partners

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Abstract

The tumor suppressor protein p53 occupies a central role in cellular decision-making processes, particularly in the delicate balance between promoting cell survival and triggering apoptosis. This abstract elucidates into the intricate mechanisms underlying p53's decision-making capabilities and examines how p53 integrates with other proteins to make these critical decisions. Upon sensing cellular stressors such as DNA damage or oncogene activation, p53 interacts with a network of proteins to assess the extent of damage and determine the appropriate course of action. Key players include MDM2, which regulates p53 stability and activity, and p53 family members such as p63 and p73, which contribute to the diversity of p53-mediated responses. Additionally, co-factors such as p53-binding protein 1 (53BP1) and the ataxia-telangiectasia mutated (ATM) kinase collaborate with p53 to coordinate DNA repair processes. In situations of moderate stress, these interactions promote cell survival by facilitating DNA repair and cell cycle arrest. Conversely, under severe stress conditions, p53 collaborates with pro-apoptotic proteins like Bax and PUMA to induce apoptosis, eliminating damaged cells. P53 orchestrates a complex network of signaling pathways to assess the severity of various cellular stresses and determine the appropriate cellular response. The fine-tuning of this decision-making process involves complex interactions with regulatory proteins which influence p53's activity and cellular outcomes. Dysregulation of p53-mediated responses is a hallmark of various diseases, including cancer, highlighting the clinical significance of understanding the molecular mechanisms governing

p53's choice between cell survival and apoptosis. Understanding the interplay between p53 and its protein partners provides insights into fundamental aspects of cellular decision-making and may offer new avenues for therapeutic intervention in disease contexts. Unraveling these complexities not only sheds light on fundamental aspects of cell biology but also holds promise for the development of targeted therapeutic strategies aimed at restoring proper p53 function in disease contexts.

The Dynamic Role of NRF2 & KEAP1 Proteins to combat oxidative stress

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Abstract

The liver is constantly exposed to various sources of oxidative stress. Oxidative stress in the liver poses a significant challenge to cellular homeostasis and overall health, necessitating robust mechanisms for maintaining cellular homeostasis and function. Among these mechanisms, the dynamic interplay between NRF2 (Nuclear factor erythroid 2-related factor 2) and KEAP1 (Kelch-like ECH-associated protein 1) proteins emerges as a crucial line of defense against oxidative insults. NRF2 serves as a master regulator of antioxidant response genes, arranging the transcriptional activation of detoxifying enzymes and antioxidant proteins in response to oxidative stress. KEAP1, on the other hand, acts as a key modulator of NRF2 activity, regulating its stability and turnover through ubiquitin-mediated degradation. Upon exposure to oxidative stress, KEAP1 undergoes modifications, leading to NRF2 stabilization and nuclear translocation, where NRF2 binds to antioxidant response elements (AREs) in the genome and initiates the transcriptional activation of its target genes. This complex regulatory mechanism enables the liver to mount a strong and adaptive response to oxidative insults, thereby preserving cellular integrity and function. This complex regulatory system ensures timely and adaptive responses to oxidative challenges in the liver. Dysregulation of NRF2-KEAP1 signaling has been implicated in various liver pathologies, including fibrosis, steatosis, and hepatocellular carcinoma. Understanding the dynamic roles of NRF2 and KEAP1 in combating liver oxidative stress provides valuable insights into potential therapeutic strategies for mitigating oxidative damage and preserving hepatic function. This review explores the multifaceted involvement of NRF2 and KEAP1 proteins in the battle against oxidative stress in the liver, highlighting the importance of NRF2 and KEAP1 proteins as promising targets for therapeutic interventions aimed at mitigating liver oxidative damage and preserving hepatic function.

Prophylactic Role of Physiotherapy in Pain Alleviation, Posture Correction and Recovery

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Abstract

Since its advent, in the last century, further developments in physiotherapy have taken a pivotal role in alleviating pain, posture correction, and recovery from morbid conditions like strokes and heart attacks. Some of the available treatments include laser, shockwave therapy, ultrasound, Transcutaneous Electrical Nerve Stimulation (TENS), and Infra Ferenial Therapy (IFT). It is of major significance that the patients have to be treated by physicians, surgeons, and physiotherapists in a syncretic manner. Their interest and efforts gave optimal results but time is of the essence.

The Clinical outcomes from our work show the equipment for laser gun therapy. Here we present nine cases in series from a range of treatments that have been offered to patients from various walks of life. We have observed that these interventions can minimize surgical procedures in back and knee surgeries. Posture correction or sports injuries of Olympians or International Premier League are described.

Above all, sophisticated facilities are available to defense personnel at the Corps of Electronics and Mechanical Engineers IEME Centre, Secunderabad. The breakthroughs made in patient recovery on our part will be discussed.

CSF Cell Count and Chemistries in Bacterial Meningitis

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Abstract

Our study is carried out to study the fluid around the brain and spinal cord (called cerebrospinal fluid or CSF) to understand how it can help detect and manage a serious brain infection called bacterial meningitis. We looked at lots of previous studies to see what they found out about the cells and chemicals in this fluid and how they relate to bacterial meningitis. We collected data from patient from The Pathology & Biochemistry department of MEDICOVER HOSPITAL who were suspected of meningitis and studied them closely. Our goal was to figure out if certain cell counts and chemicals in the fluid could tell us if someone has bacterial meningitis or another type of infection that affects the brain and spinal

cord. Our research showed that specific counts of cells and certain chemicals in the fluid can help doctors diagnose and predict how serious bacterial meningitis is. This study suggests that examining this fluid can be very important in telling apart bacterial meningitis from other similar infections in the brain and spine. Overall, our findings can help doctors better understand and treat bacterial meningitis by using information from the fluid around the brain and spinal cord.

Crystal Analysis in Uine

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Abstract

To identify urine crystals among patients of different age groups in different gender and the disease in which it is related, and which crystal is more common among all the aged patients. This retrospective observational study was carried out as per the protocol provided by the institute and case records of the patients diagnosed with crystalluria is done by microscopic analysis of urine. Analysing the urine sediments under the polarized microscope will give information about different types of urine crystals founded among different types of patients irrespective of age, and sex of the patients. The study is done in between a particular time i.e., from June 2023 to November 2023, which gives a overall idea of the crystalluria occur among the population, how it affects, how it is diagnosed, whether it is related to serious disease or not, what is the frequency of occurrence of the crystalluria among the people, how it gets treated. These topics are covered in our study.

Based on the study criteria, 18739 urine samples were diagnosed in past six months in which 468 urine samples were showing positive result for crystals in urine, including both male and female of all age group from age less than <15years to age more than >15years. In 468 positive sample, 208 samples of female patients and 260 samples of male patients.

The most common crystals found are calcium oxalate, uric acid, amorphous phosphate, amorphous urate, and triple phosphate; which are consider as normal crystals. In our case study of crystalluria in patients we haven't found any abnormal crystals, hence we can say that crystalluria is not a very common findings in urine, and it is not always pathogenic. Crystalluria may indicate some disease in urinary tract, renal complications and hereditary related complications but it is very rare findings e.g., in case of cystine crystals.

The percentages of each crystal in different age and sex parameters have been discussed in our further studies of crystalluria, where each parameters defined clearly. Giving the overall idea of crystalluria in our study and case findings and dealing with the patient data is handled with proper care and maintenance of proper confidentiality.

This present study showed that there is no statistically significant of crystalluria in normal urine analysis. As the study number was very low, it must require large cohort of patients in

multicentre study and then only it will become generalized and the rare cases will also find which enhances the knowledge of the relation of crystalluria with diagnosis of the disease.

Oxidative Stress in Chronic Hypertension Patients with Renal Impairment: A Comprehensive Review on Strategies for Enhancing Nutritional Awareness and Dietary Habits

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Abstract

Kidney injury is frequently the result of chronic hypertension, which is a major global health issue. Because the kidneys are involved in nutrition metabolism, lifestyle therapies—such as adopting healthy eating habits—are crucial for people with chronic kidney disease (CKD). Renal oxidative stress and hypertension are reciprocally associated, demonstrating the dynamic nature of these interdependent systems. Oxidative stress may act as a catalyst and an exacerbator of hypertension, creating a self-fulfilling loop that is repeated. However, hypertension itself contributes to elevated oxidative stress, resulting in a complicated scenario. Numerous hypertension models have shown elevated kidney reactive oxygen species (ROS) levels, suggesting a critical role for oxidative stress in the pathogenesis of hypertension.

This has varying effects based on the particular molecular targets, the magnitude of the stress, and the mechanisms of imposition. In the context of lifestyle therapies, particularly good dietary patterns in chronic kidney disease (CKD), this review explores the intricate relationship among chronic hypertension, renal dysfunction, and oxidative stress. It highlights the complex relationship between chronic hypertension-related kidney impairment and oxidative stress, as well as the possible benefits of adopting good eating habits. To develop tailored interventions aimed at fostering healthy eating habits, a deeper understanding of the underlying mechanisms and potential prophylactic strategies is necessary. These strategies aim to lessen the detrimental effects of oxidative stress on kidney function in Hyderabad hypertensive patients.

Keywords: Renal Impairment; Chronic Kidney Disease (CKD); Antioxidant-rich Diet. Chronic Hypertension; Oxidative Stress.

کیا بلڈ گروپ 'او' برو نکینسل دمہ کی حساسیت میں ایک عنصر ہے؟ ایک جنوبی ہندوستانی مطالعہ

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خون کے گروپ پیچیدہ عام انسانی پیاریوں کی تعداد کے تناظر میں ایک دلچسپ کردار ادا کرتے ہیں۔ بلڈ گروپ اینٹی جینز خلیوں کی شناخت میں اہم کردار ادا کرتے ہیں اور مائیکرو جینز، ماحولیاتی زہریلے مادوں، الرجین وغیرہ کے لئے ممکنہ ریسیپٹرز کے طور پر کام کرتے ہیں۔ دنیا بھر میں 300 ملین افراد برو نکینسل دمہ کا شکار ہیں، جو سانس کی ایک کثیر الجہتی تکلیف ہے جو اعلیٰ بیماری سے وابستہ ہے۔ موجودہ مطالعہ میں ہم نے بلڈ گروپ کی اقسام اور برو نکینسل دمہ کے درمیان تعلق کے امکان کو تلاش کیا۔ اپنے مقصد کو حاصل کرنے کے لئے ہم نے اے بی او بلڈ گروپنگ کے لئے کل 200 مریضوں کے خون کے نمونے جمع کیے جن میں 100 دمہ کے مریض اور 100 غیر دمہ کے مریض شامل تھے۔

اعداد و شمار کے تجزیے سے پتہ چلتا ہے کہ دمہ اور غیر دمہ والے افراد میں بالترتیب خون کی قسم او (56 فیصد بمقابلہ 37 فیصد) اور جمع شدہ نان او بلڈ ٹائپ اے، بی اور اے بی (44 فیصد بمقابلہ 63 فیصد) کی تقسیم میں نمایاں فرق دیکھا گیا۔ او گروپ کے افراد کی جانب سے دیگر بلڈ گروپس (او آر = 2.17، سی آئی = 1.23، پی = 3.81، پی = 0.01) کے مقابلے میں دمہ کی ترقی کے خطرے میں دوگنا اضافہ دیکھا گیا۔ دمہ کے مریضوں میں خون کی اقسام او، اے، بی اور اے بی کی شرح 56 فیصد، 20 فیصد، 13 فیصد اور 11 فیصد جبکہ غیر دمہ کے مریضوں میں 37 فیصد، 25 فیصد، 28 فیصد اور 10 فیصد تھی۔ نتائج مریض گروپ میں او بلڈ ٹائپ کے بلند فیصد اور بی بلڈ گروپ کے افراد کی شرح میں کمی کی نشاندہی کرتے ہیں۔ اس سے یہ اشارہ مل سکتا ہے کہ او بلڈ گروپ دمہ کی ترقی کے لئے ممکنہ خطرے کا عنصر ہو سکتا ہے۔ غیر دمہ میں بی گروپ کے افراد کی مزید اعلیٰ فیصد دمہ کے خلاف حفاظتی اثر کی تجویز کرتی ہے (او آر = 0.38، 0.19، 0.8، پی = 0.01)۔

44 فیصد مریضوں میں شدید علامات ظاہر ہوئیں جبکہ 56 فیصد مریضوں میں ہلکی سے درمیانی علامات ظاہر ہوئیں۔ ہم نے دمہ کی شدت پر بلڈ گروپ کی قسم کا کوئی خاص اثر نہیں پایا (پی < 0.05)۔ اگرچہ صرف خون کی قسم دمہ کے لئے پیشگوئی کا عنصر نہیں ہے لیکن یہ دلچسپ ہے کہ دمہ خون کی قسم او والے افراد میں زیادہ عام ہے۔ سانس کی دائمی بیماریوں میں اے بی او اینٹی جینز کے کردار کو سمجھنے کے لئے مزید تحقیق کی ضرورت ہے۔ یہ معلومات مریضوں کے انتظام میں ڈاکٹروں اور صحت کے پیشہ ور افراد کے لئے مددگار ثابت ہو سکتی ہے۔

A PROSPECTIVE OBSERVATIONAL STUDY ON MANAGEMENT OF SEPSIS IN CRITICALLY ILL PATIENTS

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Abstract

BACKGROUND:

In patients suffering from sepsis, enters into the severe stage of sepsis leading to death of the patient, In this study our purpose is to study the management of sepsis

OBJECTIVES:

Aim of the study is management of sepsis in critically ill patients and sepsis in–

Multiple disease condition. Also Management of sepsis in critically ill patients.

Drug Dose adjustments in sepsis patients with multiple disease conditions.

To list out the empirical and restrictive antibiotic therapy in patients with Sepsis.

METHODOLOGY:

After getting the permission from the Institutional Human Ethics Committee [IHEC],KIMS HOSPITAL the study was done by PROSPECTIVE OBSERVATIONAL study design. After obtaining the permission to access the patient's medical records and in patients, all the eligible participants data will be collected in a data form which includes all the patient demographic data such as age(inyears), gender, and laboratory data such as ECG, 2DECHO, Medication chart, antimicrobial chart will be collected.

RESULTS:

The results in this thesis work are based on the data acquired from the single center study site of KIMSHOSPITAL, secunderabad, Hyderabad over a period of 6 months. The analysis of the study was based on the observed cases, we collected data of 120 cases as per our sample size, patients receive in antimicrobial therapy in the ICU.

DURATION: 6 Months study

CONCLUSION:

our findings highlight a rapid progression to septic shock, contributing to a poor prognosis and heightened mortality rates. The timely use of standard antibiotics emerged as a critical factor in enhancing patient outcomes, underscoring the importance of early intervention to improve the quality of life and minimize mortality rates.

Utility of LFT and Biomarkers in HepatoPancreatico- Biliary imaging on CT & MRI as predictors in Hepatic & Pancreatic abnormality spectrum.

Dr. Santosh

SoS, MANUU

Abstract

Hepato-Pancreatico-biliary system includes Liver, Pancreas, Gall Bladder and Bile ducts these collectively form a body organ system. Liver function test includes group of blood test which is performed to evaluate the values of enzymes and proteins including bilirubin (direct and indirect) it is helpful in diagnosis of liver conditions like cirrhosis, Hepatitis, and any liver damage. LFT gives basic idea of abnormality in biliary colic associated with Acute Cholecystitis, choledocholithiasis and other liver disease. Liver Function Test includes AST, ALT, ALP, GGT, Total Bilirubin includes direct and indirect bilirubin. Pancreas secretes mainly 3 enzymes Amylase, Lipase, protease. Hepatic and Pancreatic pathologies can be diagnosed by CECT abdomen, T.P.C.T, C.E. MRI and MRCP. Purpose of study is to rule out correlation with predictive Biomarkers & LFT with Hepatic & Pancreatic imaging on CT or MRI. Our hypothesis is that biomarker values in case of Liver & Pancreatic pathologies showing significant relation with pathological conditions. So, imaging should be second choice of investigation. Prospective study with minimum 100 patients was taken in this study in which male and female both patients will be included

Keywords: - Liver function Test, Triple Phase Computed Tomography, Magnetic Resonance Cholangiopancreatography.

Exploring Cardiovascular Disease through Mass Spectrometry-Based Proteomic Analysis: A Comprehensive Review

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Abstract

Cardiovascular disease (CVD) encompasses a range of conditions affecting the heart or blood vessels. This category of diseases comprises coronary artery diseases, heart failure, hypertensive heart disease, rheumatic heart disease, cardiomyopathy, arrhythmia, congenital heart disease, valvular heart disease, carditis, aortic aneurysms, peripheral artery disease,

thromboembolic disease, and venous thrombosis. Except for Africa, cardiovascular diseases stand as the primary cause of mortality globally. The collective toll of CVD accounted for 17.9 million fatalities (32.1%) in 2015, a rise from 12.3 million (25.8%) in 1990. Instances of CVD-related deaths, relative to age, are more prevalent and escalating across much of the developing world, contrasting with a decline in rates observed in most developed nations since the 1970s. Advancements in proteomic methodologies have enabled in-depth exploration of the molecular mechanisms associated with cardiovascular disease, allowing for the identification not only of altered proteins but also of the specific nature of their modifications. Ongoing progress is expected to drive the evolution towards functional proteomic analyses. In these studies, the identification of protein modifications, combined with functional insights obtained from established biochemical and physiological techniques, holds the promise of advancing our comprehension of the intricate relationship between proteome alterations and cardiovascular disorders. Proteomics serves as a systemic physiology discipline aimed at comprehensively characterizing protein species within diverse biological contexts, such as cells, tissues, body fluids, organisms, or population cohorts. Leveraging advancements in chemical analytical platforms, notably mass spectrometry and other technologies, proteomics methodologies have significantly contributed to cardiovascular biomedicine. This contribution is particularly evident in two key areas: firstly, in the discovery of circulating protein biomarkers indicative of heart diseases from plasma samples; and secondly, in the elucidation of disease mechanisms and potential therapeutic targets within cardiovascular tissues, spanning from preclinical models to translational studies. Present-day proteomics investigations offer robust tools for concurrently scrutinizing tens of thousands of proteins across various sample types, thereby facilitating the comprehension of their molecular phenotypes in both health and disease context. The field of cardiovascular proteomics is rapidly developing, and notable advancements have been achieved in recent years. These advancements are directed towards delineating new candidate biomarkers and gaining deeper understanding of molecular pathophysiology.

Keywords: Cardiovascular disease, molecular mechanisms, proteome alterations, mass spectrometry, biomarkers and cardiovascular proteomics

Mammography – Modern Application for early detection of Breast Cancer

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Abstract

Breast cancer is the most common form of cancer and leading cause of mortality in women. Early and correct diagnosis can save lives and the most used diagnostic test is mammography, a low-dose X-ray technique used for imaging the breast. The technology of mammography has developed steadily over the past 35 years. Scientists are trying the most innovative personalized approaches that provide all patients with the best diagnostic and

therapeutic options and provide screening approaches to the patient, diagnostic developments such as CEM and MRI. When evaluating mammograms, one looks for masses, areas of asymmetry or architectural distortion, and microcalcifications. The present study with the title” mammography – Modern applications for early detection of breast cancer” will highlight the imaging evaluation and the management of lesions found in screening and diagnostic mammography, with a focus on commonly encountered questions and dilemmas.



Animal Sciences

Nematode-Insect Interactions in Nature: Models for Sustainable Control of Insects Pests of Agricultural Fields

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Abstract

Nematodes, commonly known as roundworms, represent a remarkably diverse and prolific group within the animal kingdom, occupying a wide array of environments worldwide. Their remarkable adaptability stems from an assortment of feeding behaviors and habitat preferences. This adaptability display in various interactions with other organisms, spanning from competitive relationships to commensal associations. Furthermore, nematodes engage in mutualistic partnerships, where both parties benefit. Notably, nematodes are notorious for their parasitic lifestyle, often inflicting harm or disease upon their hosts, and they themselves can serve as hosts for a diverse array of parasites, including various microorganisms. Beyond parasitism, nematodes function as predators, preying upon microorganisms like bacteria and fungi, as well as other small invertebrates within their ecosystems. This multifaceted role underscores the ecological significance of nematodes and their intricate relationships within ecosystems. Nematodes play pivotal roles in various ecological interactions, particularly in regulating insect populations. Their diverse associations with insects not only underscore their ecological significance but also expand their potential applications in biocontrol strategies aimed at managing insect pests. The proposed research endeavors to explore the efficacy of nematodes as biocontrol agents against insect pests, with a specific focus on their comprehensive characterization using both morphological (light microscopy and scanning electron microscopy) and molecular methods. Additionally, the study aims to uncover novel entomopathogens as sustainable alternatives to conventional pesticide use in agricultural fields and forest ecosystems. Beyond its immediate applications in pest management, this research also promises to enrich our understanding of the intricate ecology and behavior of insect parasitic nematodes. The evolutionary dynamics of nematode-insect associations, unravel the underlying mechanisms driving these complex interactions, thereby advancing our broader understanding of ecological dynamics.

Keywords: Biocontrol agent, biodiversity, evolution, insect pest, molecular, nematode-insect interaction.

Molecular and Biochemical Methods to measure the efficiency of Natural Anticancer Compounds

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Abstract

Cancer is a group of diseases caused by loss of cell cycle control. Cancer is caused by both external factors and internal factors. Indeed, the struggle to combat cancer is one of the greatest challenges of mankind. Cancer is one of the most prominent diseases in humans and currently there is considerable scientific and commercial interest in the continuing discovery of new anticancer agents from natural product sources. Alternative medical practice using plant drugs has been successful from very early times in using natural drugs and preventing or suppressing various tumors with different lines of treatment. Natural products have been regarded as important sources of potential chemotherapeutic agents and many anticancer drugs have originated from natural sources. According to an estimate, over 50 % of the drugs in clinical trials for anticancer properties were isolated from natural sources or are related to them. The areas of cancer and infectious diseases have a leading position in the utilization of medicinal plants as a source of drug discovery. Among FDA-approved anticancer and anti-infectious drugs, drugs from natural origin have a share of 60 % and 75 % respectively. A great number of molecular and biochemical techniques have been developed to measure the efficiency of natural anticancer compounds either as pure compounds or as plant extracts. Biochemical assays like Trypan blue dye exclusion assay, LDH assay, MTT assay, XTT assay, and Sulforhodamine B assay are most commonly used for estimating anticancer properties of natural products from medicinal plants. Among all molecular methods, Western blotting, RT-PCR, and ELISA assay are most popular for estimating anticancer activity. In the present review, these biochemical and molecular biology techniques will be discussed.

Keywords: Anticancer, Molecular and biochemical techniques

Diversity and Density of Meiobenthic fauna from Adyar Beach, Chennai, India.

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Abstract:

Meiobenthic fauna that thrives in sediments is the diverse community of invertebrates. As the term suggests they fall between the category of microbenthos and macrobenthos based on size of classes. One needs to study them because the value they possess is immensely great by the services they offer to the environment. The current study analyzes the meiobenthic diversity and density along the intertidal zones from Adyar Beach in Chennai, India from December 2023 to February 2024. We observed meiobenthos belonging to 10 groups. The most dominant groups among the 10 groups were Nematodes with mean and standard error value of (1944.4 ± 1683.3) and the second dominant group was polychaetes (575.9259 ± 302.77) followed by harpacticoid copepods (459.4541 ± 125.29) . The physicochemical parameters like Dissolved Oxygen, temperature, and salinity were recorded during the study period. The correlation analysis revealed that temperature correlated negatively with polychaetes (-0.999) and foraminiferans (-0.997). Dissolved oxygen correlated positively with nematodes (0.996). Whereas, salinity showed strong negative correlation with harpacticoid copepods (-0.983). This study gives a snapshot of meiobenthic interactions with some physicochemical parameters.

Keywords: Meiobenthic fauna, physicochemical parameters, Adyar beach, Chennai.

Meiobenthic diversity of Adyar Estuary from Chennai, India.

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Abstract

Meiobenthic fauna is an important group of invertebrates that fall in size category of 38 μ m to 500 μ m. It is highly diverse and plays a huge role in proper ecosystem maintenance. Comparatively, there are numerous studies in global perspectives than in Indian perspectives. This study investigates the diversity and density of the meiobenthic community of Adyar Estuary in Chennai from December 2023 to February 2024. We recorded 12 groups. Nematodes with mean and standard error values of (551.1109 ± 348) being the most

dominant followed by Harpacticoid Copepods (546.296 ± 450). The physicochemical parameters like dissolved oxygen, interstitial water temperature and salinity were checked throughout the study period. Correlation analysis revealed that Dissolved Oxygen showed strong positive correlation with Amphipods (0.98) and a strong negative correlation with Turbellarians (-0.98), Nematodes (-0.98), and Calanoid copepods (-0.98). Temperature showed positive correlation with Cyclopoid Copepods (0.98) and showed strong negative correlation with titinids (-0.8). Salinity positively influenced many groups including nematodes (0.5), Turbellarians (0.5), Harpacticoid Copepods (0.34) and negatively influenced Titinids (-0.98), Oligochaetes (0.42) and Amphipods (-0.5). This study gives us insights on meiobenthic dynamics with some physicochemical parameters.

Keywords: Diversity, Density, Meiobenthic fauna, Adyar estuary.

Parasitic biodiversity of gastrointestinal parasites in certain cat fishes of Gomti River, Lucknow.

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Abstract

Fish which is a good source of a protein can be helpful in accomplishing the problem of nutrient deficiency which is one of the major challenges that is being faced by our country in the present scenario. Parasites inhabiting in fishes can cause serious threats to their health which will further affect the health of consumers of fish. The study was carried out to determine the parasitic biodiversity in catfishes of Gomti River, Lucknow. A total of 143 fishes consisting of 135 *Rita rita* and 8 *Wallago attu* were screened using standard parasitological procedures. In *Wallago attu* parasitic infestation was found more in females i.e. 60% and in *Rita rita* males were found more infected than females with the parasitic prevalence of 27.27%. Cestodes were recovered from the gastrointestinal tract of *Wallago attu*. *Rita rita* was found infected with nematodes and trematodes.

The Role of Environmental Preventive Medicine in Achieving a Chemical Free India Under Vision India at 2047

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Abstract

India's ambitious visionindia@2047 plans were set in motion at the fag end of December 2021 with a focus on sustainable goals for future generations through an integrated model of transdisciplinary sciences comprising of medical sciences, other scientific fields such as engineering and architectural sciences etc.

The objectives of the study are mainly to achieve a chemical free india through sustainable environmental preventive medicine and to assess and study the impact of unregulated use of chemicals and what actions need to be taken for their future use while noting the scientific and technological advancements, especially with studies aimed at identifying innovative human biological studies to identify bio-markers for known chemical exposure.

The emerging field of environmental preventive medicine promises new vistas towards advances in the study of chemical risk assessment in human exposure through innovative bio-markers for known chemical exposure pertinent towards visionindia@2047. This could be achieved through a concerted effort towards the legislative and public awareness areas along with a mandatory health assessment system aimed at both the primary and tertiary levels of health care through a sustainable framework.

The study concludes with the mention that India has the need to improve and improvise on the current healthcare framework through proper legislation, public awareness and also lay a special emphasis on the control of the unregulated use of chemicals and their plausible effects on community health.

“Towards a toxic free environment perspective for chemical risk assessment approaches” (Matteo Bonzini, Veruscka Leso, Ivo Lavicoli - La Medicina Del Lavoro 113 (I), 2022). “Developing human biomonitoring as a 21st century toolbox within the European exposure science strategy 2020-2030” (Maryam Zare Jeddi, Nancy B Hopf, Henriqueta Lauro, Susana viegas, karen s galea, Robert Pasanen - Kase -- ENVIROMENT INTERNATIONAL 168, 1074 - 76, 2022).

A Study Related to Physico-Chemical of Water in Anasagar Lake, Ajmer, Rajasthan

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Abstract

Anasagar Lake, which has a vast catchment area, is the largest. 70.55 square kilometers make up Ana Sagar Lake's catchment area. In Anasagar Lake water quality is commonly characterized based on its physical, chemical, and biological characteristics. In Anasagar Lake the level of pollution is rising daily as a result of population growth, the direct discharge of sewage, household trash, detergents, agricultural runoff, usage of chemical pesticides and fertilizers, etc., all contribute to the pollution of the lake water. In this research paper the study analyzes the limnological data pertaining to the physicochemical properties of the water in Anasagar Lake. The limnological parameters were examined using accepted techniques in temperature, turbidity, pH, DO, BOD, COD, free CO₂, total alkalinity, chloride, ammonia, nitrate, phosphate, etc. were among the physicochemical parameters that varied significantly over time in the lake. The lake had a higher concentration of nutrients (phosphate, nitrate). Higher trophic level and eutrophication are also indicated by this finding. In Anasagar Lake the low water quality was made evident by its physico-chemical properties. The aquatic ecosystem and human population will suffer as a result of all these contaminants. Consequently, it's imperative to regularly assess the lake's water quality. Water samples were taken from several locations in order to monitor the Anasagar Lake's water quality. Based on the results, we deduced that the lake's water quality is influenced by home and agricultural activities, making it organic. High levels of pollution caused the BOD to rise. The lake water is alkaline due to its high pH value and hard due to its high alkalinity content. While certain values are within allowable bounds, others have concentrations that are quite high.

Key Words: Lake, Water quality, Physicochemical parameters.

Biogenic functionalization of dietary zinc oxide nanoparticle on commercially important freshwater fish

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Abstract

The present investigation evaluated the effect of dietary commercial and synthesized Zinc oxide nanoparticles (ZnO-NPs) on the growth performance and antioxidative status of *Labeo rohita* fingerlings. In this study, we conducted dietary exposure experiments using both commercial and synthesized ZnO-NPs at various concentrations (10, 100, 200mg/kg) on freshwater fish fingerlings *Labeo rohita* (5.74±0.28cm; 2.17±0.39g) for 90 day, to investigate their potential adverse effects on most sensitive organ liver. The findings indicated that exposure to ZnO-NPs affected the levels of glutathione peroxidase (GPx), glutathione S-transferase (GST), and malondialdehyde (MDA) in liver tissue. The level of MDA in liver tissue due to 90-day dietary exposure to commercial and synthesized NPs-ZnO supplemented feed reduced significantly at $p < 0.05$ in comparison to the control group. GST levels in liver

tissue were significantly elevated compared to the control group, while GPx levels exhibited a significant reduction at concentrations of 10 and 100 mg/kg (0.40 ± 0.03 , 0.39 ± 0.11) respectively. Hence, GPx levels increased significantly (1.14 ± 0.86) at a concentration of 200 mg/kg dietary exposure to commercial nanoparticles. However, synthesized NPs-ZnO exposure caused a significant ($p<0.05$) reduction in GPx level at different concentrations. According to the present findings, ZnO-formulated feed caused a reduction in the antioxidant activity of liver tissue. However, dietary exposure showed an improvement in growth performance (result not presented) with an adverse effect on the antioxidant potential of the fish. These results warrant further investigation by using synthesized NPs would result in much better performance with low doses.

Keyword: *Labeo rohita*, zinc oxide, antioxidant, dietary

Presence of trace and heavy metals in aquatic biota from Kanyakumari coast, Tamil Nadu, India

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Abstract

Marine fish are subjected to several forms of heavy metal contamination, including industrial waste, agricultural runoff, sewage discharge, and atmospheric deposition. These metals may build up in fish tissues and could endanger human health when consuming seafood. This study aimed to assess the concentrations of six heavy metals (Cu, Cd, Co, Ni, Pb, and Zn) in the muscle tissues of five marine fish species (*Thunnus*, *Lutjanus campechanus*, *Carangidae*, *Sardina pilchardus*, and *Rastrelliger kanagurta*) obtained from the Nagapattinam Bay of Bengal coast in India. The study found considerable variations in the amounts of heavy metals across different fish species and sample sites. *Carangidae* species had the greatest concentrations of Ni ($4.02\ \mu\text{g/g}$), Pb ($7.60\ \mu\text{g/g}$), and Zn ($21.95\ \mu\text{g/g}$), with Cu and Zn levels peaking in *Lutjanus campechanus* at ($57.40\ \mu\text{g/g}$) and ($194.96\ \mu\text{g/g}$), respectively. *Thunnus* has the highest concentration of Cd at ($6.55\ \mu\text{g/g}$). Whereas, the least accumulation of Ni, Pb and Zn was found in *Rastrelliger kanagurta* ($14.95\ \mu\text{g/g}$, $1.43\ \mu\text{g/g}$, and $41.78\ \mu\text{g/g}$) and the least accumulation of Cu, Cd and Co was observed in *Sardina pilchardus* ($38.97\ \mu\text{g/g}$, $1.75\ \mu\text{g/g}$, $5.21\ \mu\text{g/g}$). Most fish species have heavy metal levels that are beyond the acceptable limits established by the World Health Organization and the Food and Agriculture Organization for human consumption. The research found that consuming certain fish species might be harmful to health and recommends consistent monitoring and management of the marine environment.

Science behind Human Sex determination: Awareness for Sustainable Development

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انسانی جنس کے تعین کے پیچھے سائنس: پائیدار ترقی کے لئے بیداری

اشرف علی اور عائشہ صدیقہ

ITEP B.Sc.-B.Ed.

زولوجی سیکشن، اسکول آف سائنسز، مانو

رہنمائی: پروفیسر پروین جہاں

قدرت صنفوں کے درمیان کوئی تفریق ظاہر نہیں کرتی ہے، جو پھیلاؤ اور انواع کی بقا (propagation and species survival) کے لئے ضروری ہے۔ انسانوں میں، جنس کا تعین کروموسوم (Chromosome) پر مبنی ہے۔ اگرچہ دونوں جنسوں میں کل کروموسوم کی تعداد ایک جیسی ہے یعنی 46، لیکن وہ ایک جوڑے یعنی خواتین میں ایکس ایکس (XX) اور مردوں میں ایکس وائی (XY) کے حوالے سے مختلف ہیں۔ جنسی کروموسومز (Sex Chromosomes) کا یہ ایک جوڑا مرد میں گیمیٹ کی پیداوار میں فرق کی بنیاد ہے، لہذا پیدا ہونے والا بچہ لڑکی ہو گا یا لڑکا اس کا تعین والد پر ہوتا ہے اور اس میں ماں کا کوئی کردار نہیں ہوتا۔ ہر حمل میں لڑکی یا لڑکا ہونے کے امکانات برابر ہوتے ہیں (50% probability)۔

مختلف ثقافتی اصولوں کی وجہ سے معاشرے میں جنسی تناسب کو لڑکیوں کے قتل اور نوزائیدہ بچوں کے قتل کے ذریعے تبدیل کیا گیا ہے۔ سائنسی ٹکنالوجی جسے نجات دہندہ سمجھا جاتا ہے اسے قبل از پیدائش جنسی تعین کے ذریعے اس کے خلاف استعمال کیا جا رہا ہے۔ عالمی سطح پر صنفی تناسب کا بہترین قانونی، اخلاقی اصولوں اور آگاہی کی وجہ سے مختلف ہوتا ہے۔ خاص طور پر ہندوستان میں جنسی تعین (sex determination) کے پیچھے سائنس کے بارے میں بیداری اور جنسی تناسب (Sex ratio) کو برقرار رکھنے کے لئے قواعد و ضوابط پر سختی سے عمل درآمد کی ضرورت ہے۔

A vibrant, stylized illustration of a green hill. The hill is covered in various types of trees, including a tall, thin tree with yellow leaves on the left, a large green tree with many branches in the center, and a dark green tree with a thick trunk on the right. There are also smaller trees and plants. The sky is white and filled with many small, colorful flying insects, including butterflies and bees. The overall scene is bright and lively, representing a healthy ecosystem.

Agricultural and Environmental Sciences

Effects of Polyethylene Glycol (PEG 6000) induced drought stress in different accessions of Maize (*Zea mays* L.)

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Abstract

Maize is one of the important cereal crops grown all over the world for food and fodder. But the production of maize is adversely affected by various environmental factors. Among all the factors, drought stress or water scarcity are the most important environmental factors in growth reduction of Maize crop. Germination is the foremost and crucial stage in the plant life cycle initiating all the physiological processes. However, this stage is dependent on the availability of water in the soil at the time of planting. Any reduction in the water content of the soil may result in germination failure. This study examined germination characteristics of ten maize accessions under five levels (0%, 5%, 10%, 15%, 20%) of drought stress induced by poly ethylene glycol (PEG-6000). The parameters measured are germination percentage, number of roots, root and shoot length, root fresh and dry weight, shoot fresh and dry weight. Data analysis demonstrated that there was a decline in key parameters with the increase in PEG concentration. The variation among these accessions can be used as a reliable indicator for screening drought-tolerant genotypes.

Keywords: Maize, Drought stress, Polyethylene glycol (PEG), germination, Root length.

Innovative Cultivation and Utilization of Finger Millet (Ragi) in Telangana: A Promising Approach for Sustainable Agriculture and Nutrition

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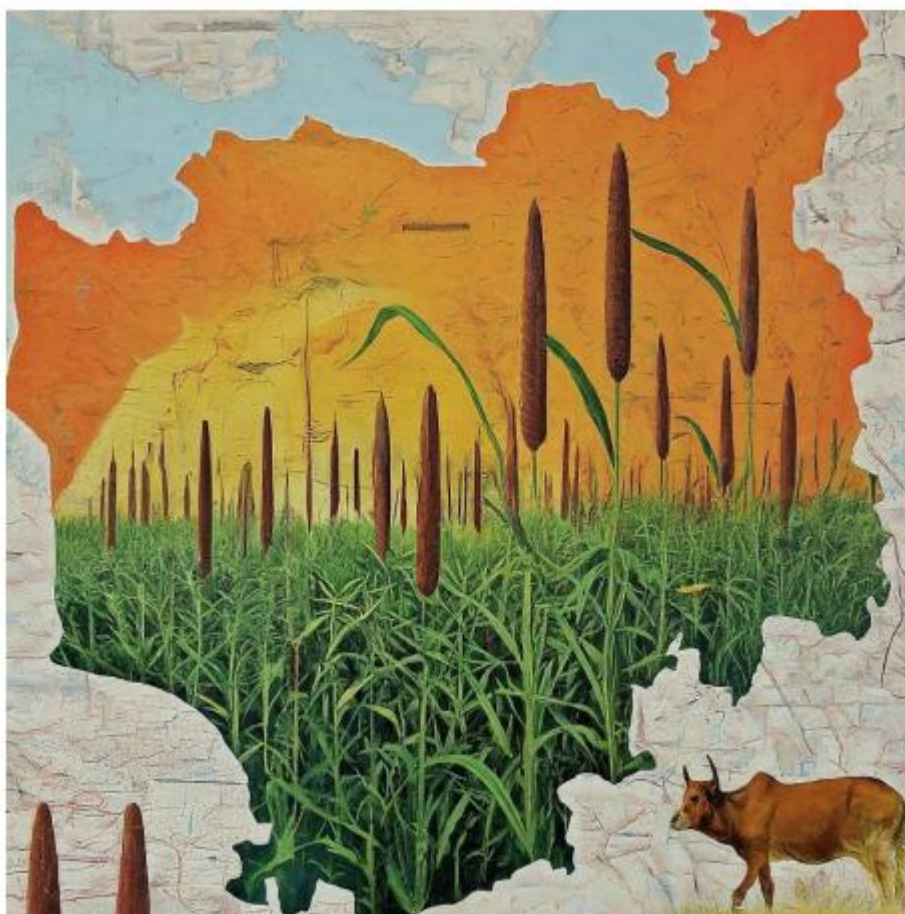
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Abstract

This research delves into contemporary agricultural practices and scientific innovations surrounding finger millet (ragi) cultivation in Telangana, India. Ragi, a traditional millet, has garnered renewed attention owing to its nutritional richness, climate-resilient characteristics, and potential to address food security challenges. Telangana farmers have successfully increased ragi yields while minimizing environmental impact by combining innovative farming techniques, precision agriculture, and biotechnological interventions. The study thoroughly examines the nutritional composition of improved ragi varieties, underscoring

their potential to combat malnutrition and enhance overall health. Additionally, the research scrutinizes the economic feasibility of implementing these advancements, considering their impact on farmers' livelihoods and the local agricultural sector. The findings underscore the manifold advantages of integrating contemporary agricultural practices with traditional crops, establishing ragi as a pivotal contributor to sustainable agriculture and nutrition in Telangana

Graphical Abstract





Plant Sciences

Analysis of Quantitative Traits in M1 Generation of Chick Pea (*Cicer Arietinum* L.) Seeds Under Induced EMS Mutagenesis

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Abstract

In the present investigation, two chickpea genotypes IC265291(V1) and IC265298 (V2) were collected from NBPGR, New Delhi and to study the mutagenic effect of EMS (Ethyl Methyl Sulfonate) on the quantitative traits. The chickpea seeds were treated with different (0.1% to 0.6%) concentrations of chemical mutagen EMS and the seeds were sown in the field at CPMB (Centre for Plant Molecular Biology), Osmania University. 3-5 plants were selected from the progeny of EMS-treated seeds and also the progeny of control seeds and the quantitative characters (Days to flowering, Plant height (cm), Days to Maturity, Number of primary branches per plant, Days to 50% flowering, Days for pod maturity, Number of pods per plant, Pod weight per plant (in g), Number of seeds per pod, 100-seed weight, Total seed yield per plant (in g)) were thoroughly studied in M1-generation. The ANOVA results revealed that the difference is highly significant due to the treatment of all the characters indicating that there is a considerable amount of genetic variability in the genotypes. In between the two genotypes (IC265291 & IC265298), the reduction in quantitative traits was found to be higher in the genotype IC265291 than IC265298 and it is also evident from the study that when the concentration of EMS increased, mean values of all the quantitative traits decreased. It is observed that the seeds treated with 0.1% EMS and 0.2% EMS concentrations showed the highest mean values for quantitative characters under consideration. These mutant varieties can be further utilised in chickpea crop improvement programs.

Keywords: Chickpea, EMS mutagen, Quantitative traits, Crop Improvement.

GC-MS and Qualitative Analysis of Aqueous Extract of *Parthenium Hysterophorus* L

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Abstract

Parthenium hysterophorus L is an invasive alien weed that has shown an inhibitory effect on germination of many crops and reduced the yield up to 40% and forage production up to 90%. *P. hysterophorus* can also affect animal husbandry, human health, and ecosystems in

its area of infestation. Parthenin, a key component of *P. hysterophorus* and a Sesquiterpenes lactone is known to impede growth. In the present study, we examine the phytochemical components of the *P. hysterophorus* aqueous extracts. Results from the study demonstrated that *P. hysterophorus* contains the presence of steroids, sugars, alkaloids, tannins, quinones and phenols. The GC-MS analysis also revealed the presence of 59 compounds in the plant aqueous extract. The major phytoconstituents were Octane, 4-chloro-, Carbamic acid, monoammonium salt reported at highest peak. This study provides the baseline for the future research on the aqueous extracts of *P. hysterophorus* L.

Keywords: *Parthenium hysterophorus* L, Parthenin, Sesquiterpenes lactone, GC-MS.

Novel approach in tertiary water treatment by using pellets of exopolysaccharide for removal of an endocrine disruptor in wastewater

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Abstract

Clean safe portable water is the basic element of all life forms. Pure water constitutes only 3% of the world's fresh water. Water is a finite resource experiencing scarcity with a growing population. There are many water resource management systems which make use of recycled water for industrial, irrigation & sometimes even for domestic purposes. But unfortunately, though there are several innovation made in Water treatment technologies, these processes are usually not able to remove the entire amount of endocrine disruptor compound from the source waters, thus the recycled water with potential micro contaminants used for many anthropological activities can reach the groundwater and can pose a high risk of long-term exposure of humans and animals to these compound. Nevertheless, several technologies currently available depend on energy consumption or may lead to low process efficiency or processes may lead to the production of toxic by-products, and addition of hazardous chemicals. The drawbacks of these technologies prevent the wider application of all these methods at large-scale. Therefore, effective, more sustainable methods are sought to remove such contaminants from water. In the present, the extracellular polymeric substance matrix, produced from bacteria functions as a chelating matrix to trap the potential microcontaminants such as endocrine disruptor compounds though found in lower concentrations could be readily eliminated at low cost without causing secondary pollution or causing energy expenditure. The extra polymeric substances are characterized by FTIR analysis, to detect functional groups. The water sample before and after is analyzed for occurrence of endocrine disrupting compounds.

Keywords: micropollutant, endocrine disruptor compound, extracellular polymeric substance, chelation

To evaluate the analgesic and anti-inflammatory properties of leaf ethanol extract of *Caesalpinia bonducella* (L.) Roxb

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Abstract

Pain is not unusual trouble encountered in day-by-day existence among human beings and animals and it is typically managed conventionally using modern drug treatments and traditionally with the aid of medicinal plant life. *Caesalpinia bonducella* is a common place herb in Karnataka, used historically to alleviate Pain and inflammatory situations. but, its interest in assuaging Pain and inflammatory diseases has no longer been fully scientifically evaluated. The present study was a laboratory-based experimental study. Acetic acid-induced writhing test was used to determine the analgesic activity and the histamine-induced paw edema formation for anti-inflammatory activity of the extract. Twenty-eight animals were divided into 7 groups each with 4 rats and two (2) sets of data were obtained from each animal per group as per the guidance of the refinement rule of 3 rupees. For analgesic activity, Group I was dosed with 1.0ml of normal saline (negative control), group II, III, IV, V, VI were dosed with 500.0, 100.0, 50.0, 10.0, and 5.0 mg/kg b. wt. of extract respectively. Group VII was dosed 10.0 mg/kg b. wt. diclofenac sodium (Na) drug (positive control). For anti-inflammatory activity, Group I was dosed with 1.0ml of normal saline (negative control), Group II, III, IV, V, VI were dosed with 500.0, 100.0, 50.0, 10.0, and 5.0 mg/kg b. wt. of extract respectively. Group VII was dosed 10.0 mg/kg b. wt. diclofenac Na. The percentage mean paw volume inhibition and percentage writhing protection were determined. Results of this study showed the mean percentage paw volume inhibitions were 25.4%, 54.2%, and 32.3% at doses of 5.0, and 10.0 mg/kg b. wt. and 10.0 mg/kg b. wt. diclofenac Na respectively. The mean percentage of writhing protection was 6.8%, 12.3%, 69.5%, and 98.7% at doses of 50.0, 100.0, 500.0 mg/kg of extract, and 10.0 mg/kg b. wt. diclofenac Na respectively. Conclusions says the above experiments was that the total crude leaf ethanol extracts of *Caesalpinia bonducella* have analgesic and anti-inflammatory activity that may be attributed to the presence of polyphenolic, steroids, saponins, flavonoids, alkaloids, and tannins and many others phytochemicals that are present in the plant.

Keywords: *Caesalpinia bonducella*, Analgesic, Anti-Inflammatory, ethanol Crude, Leaf Extract.

Effect of *Euphorbia heterophylla* L. on the Seed Germination and Biochemical components of *Zea mays*

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Abstract

Wild Poinsettia, or *Euphorbia heterophylla* L., is an invasive noxious weed that is primarily found near agricultural crop fields on fallow lands, wastelands, and roadside areas. The purpose of this study was to assess the impact of an extract of Poinsettia (*Euphorbia heterophylla*) root and stem on the germination and biochemical components of maize crop. The weed *E. heterophylla* was taken from maize fields, its root and stem were crushed, oven dried, and then dissolved in distilled water to create extracts. The aqueous root and stem extracts (10, 20, 30, 40, and 50% Conc.) of the abovementioned weed are analyzed for biochemical components such as protein, flavonoid, carbohydrate, and flavonoid of maize, as well as seed germination. 50% concentration of both root and stem extracts significantly reduces germination compared to control after 96 hours of germination. The biochemical components of the maize plant are examined using an aqueous extract of the root and stem (50% conc.), which is greatly impacted by the treatment with weed extracts.

Keywords: *Euphorbia heterophylla* L, Biochemical, Flavonoid, Seed germination

Bioremediation of Wastewater: A Review

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Abstract

The growing rate of urbanization and industrialization has led to an increase in several types of pollution caused by the release of toxic chemicals to the environment. Water is one of the vital components of our daily activities. The majority of water is squandered in our daily lives through activities such as residential waste manufacturing industry wastes, agricultural and industry sewage. The presence of heavy metals and different types of pollutants affects on living organisms. The removal of heavy metals from wastewater can be accomplished by the process of bioremediation. Bioremediation is the practice of employing biological organisms like bacteria, fungi or plants to detoxify polluted water. These organisms break

down poisonous molecules into less damaging compounds. This method is environmental and cost effective for treating wastewater contaminated with organic and inorganic pollutants. This review examines the various forms, methods, and factors affecting microbial bioremediation. It also suggests various methods to encourage the use of microorganisms as bioremediation agents.

Key Words: Bioremediation, Microbes, Waste Water,

Salvia sp. endophytic fungi are identified using a DNA Barcode

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Abstract

In addition to examining the endophytic fungal diversity of *Salvia hispanica* L., also known as chia, a portion traditional food in Central and Southern America, the study attempts to authenticate the plant. Fresh leaves were used to extract DNA, and the plant's leaves were used to isolate endophytic fungus. The ITS2 and rbcL regions were amplified to verify the plant's identity. The ITS2 region of the endophytic fungus that was microscopically identified was amplified for validation. Every amplified area underwent sequencing. The plant and its isolated endophytic fungus were verified by the NCBI Database's Homology search. The plant's species identity as *S. hispanica* was confirmed by sequencing the ITS2 and rbcL genes, and the endophytic fungi that were isolated were identified as *Alternaria longipes*, *Nigrospora camelliae*, and *Geotrichum candidum*. The development and description of endophytic fungus obliquely confirm the significance of S for food and medicine.

Keywords: DNA Barcoding, Endophytic fungi, Salvia sp.

A randomized controlled trial assessing the efficacy of *Elaeagnus conferta* Roxb. Leaf ethanol extract in the treatment of knee osteoarthritis

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Abstract

Osteoarthritis (OA) is one of the most common musculoskeletal disorders all over the world. Available anti-arthritic medications have only partial efficacy and their long-term use is associated with adverse events. *Elaeagnus conferta* Roxb. (EC) is a medicinal plant with analgesic and anti-inflammatory properties. The present study evaluated the impact of two doses of EC extract compared with ibuprofen on the severity of disease in patients with knee OA. This study was designed as a randomized, double-blind, active-controlled, and parallel group trial. Patients with OA were randomized to receive 300 mg/day (n=33) or 600 mg/day (n=32) of EA aqueous extract, or 800 mg/day ibuprofen (n=32) for 7 weeks. EC extract contained 0.21 % (w/w) kaempferol according to HPLC. Efficacy of treatment was assessed using Western Ontario and McMaster University Osteoarthritis Index (WOMAC), Visual Analogue Scale (VAS) of pain, Lequesne's Pain-Function Index (LPFI), and patient's global assessment (PGA) index. The amount of kaempferol in the extract was determined by HPLC method to be 0.21 % w/w. There were significant reductions in WOMAC, VAS, LPFI, and PGA scores by the end of the trial with all three interventions. Comparison of the changes in WOMAC, VAS, and LPFI scores among the treatment groups did not reveal any significant difference between EC and ibuprofen, and between low and high doses of EC. EC was safe and well tolerated during the course of trial and no adverse event was reported. The present results suggest the beneficial effects of aqueous EC extract in reducing the symptoms of OA with an efficacy comparable to that of ibuprofen.

Keywords: osteoarthritis, *Elaeagnus conferta*, pain, NSAID, clinical trial

Raghuveermyces, a new fungus reported from Mahadevpur forest, Telangana

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Abstract

Mahadevpur forest which is a treasure of flora and fauna is an excellent source of fungal genera collection and study. In the present study from soil samples of the Mahadevpur forest one new genus was discovered which was named *Raghuveeromyces*. This was anamorphic taxon and is reminiscent of *Endocalyx* Berk & Br and superficially similar to *Fumaria* -moss capsule.

The new genus *Raghuveera Myces* ARKhan et al Gen. nov. Deuteromycotina, Hyphomycetes, amorphous colonies effuse, thick moss capsules like black. Mycelium immersed or superficial hyphae septate. Stroma poorly developed arumpet, dark brown. Conidiogenous cells endogenous not clearly visible, holoblastic, conidia dry 1 celled blastic, variable in shape, solitary or in chains. Germination not known.

The type species of the new reported genus was *Raghuveeromyces putulogulensis* A R Khan et alen .nov. Deuteromycetes, Hyphomycetes, amorphs, colonise effuse, brunnae, Mycelium partly immersed, velpartin, submersum substratum, hyphis, septatis, stroma erempentis, pallid brunei, laevia. Conidiophore, acrocronemata, synnemata, erecta, flexuosa, hypharum convert gentibus, adopicco Annuli, ad basin absentia.

Thus the fungus discovered was *Raghuveeromyces putulogulensis* was placed on fungal class Deuteromycetes and hyphomycetes as it was amorphous as the perfect stage of its life cycle was absent.

***Trillium govanianum*, a promising endemic medicinal herb of the Himalaya**

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Abstract

Trillium govanianum is a multipurpose medicinally valuable herb known to treat various human and livestock diseases in the traditional medicinal systems of India, Pakistan, Nepal, Bhutan and Tibet (China). Traditionally, it has been used to treat different types of diseases such as boils,

dysentery, inflammation, menstrual disorders, sex-related disorders, and wounds, as an antiseptic and for improving general health. The phytochemical studies carried so far have led to the isolation and identification of 29 bio-active compounds with steroidal saponins (Diosgenin, Pennogenin, Govanoside A, Borososside E) as the major and crucial bio-active constituents from its various parts. Modern pharmacological studies have shown that both extracts and pure compounds isolated from all parts of this plant have antibacterial, antifungal, anticancer, antifertility/contraceptive, anti-inflammatory, antiparasitic, and antioxidant properties. Keeping the widespread scientific interest in view, this review aims to provide a critical overview of the botanical, ethnomedicinal, phytochemical, and pharmacological aspects of *T. govanianum* in order to explore the development of new and safe drugs for further investigation and utilization. Based on research gaps, recommendations for further research works have been provided with special emphasis on its commercial cultivation.

Selection of Heat Resistant Mutants Calli of ICGS-11 and ICGS-44 Cultivars of Groundnut-*Arachis hypogaea* L

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Abstract

The present situation of population explosion, the demand for oil seed crops like groundnut is increasing across the world. Being a very popular oilseed groundnut requirement is also at places with very high-temperature conditions. In the present study mutant calli of groundnut *Arachis hypogaea* L were developed by gamma irradiation treatment and were selected for heat resistance. Increased proline levels and decreased water potential are the biochemical and physiological hindrances in stress conditions like high temperatures, as such these two parameters were also taken into study. In the course of study, it was observed seed treatment with mutagen, viz; Gamma rays produced a maximum number of salinity-resistant mutant calli. At higher temperature conditions the proline accumulation was less in the mutant calli as compared to the control and the water potential was nearly normal in the mutants while in the control it decreased significantly. This biochemical marker of decreased proline levels and normal water potential in the mutant calli under salinity stress is a clear indication of development of heat stress-resistant mutants.

HR-LCMS profiling of phytochemicals of *Arachis hypogaea* L. leaf ethyle acetate extract

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Abstract

Arachis hypogaea L (groundnut), is an agronomically important oil seed crop rigorously investigated for the nutritional property of the pods and limited data are available on the bioactive constituents and medicinal properties of the roots. The aim of the study was to evaluate the phytochemical profiling of the leaf ethyl acetate extract of *A. hypogaea*. The sequential soxhlet extraction method was followed for the preparation of extraction from the leaves. The petroleum ether, ethyl acetate and methanol extract of the roots were subjected to qualitative and quantitative analysis. The ethyl acetate extract was subjected to HR-LCMS analysis and the results of this investigation revealed that the antioxidant and anti-inflammatory flavonoid compounds namely, Quercetin 3 – ramoside 7 – glucoside (C₂₇H₃₀O₁₆), Myricitin (C₂₁H₂₀O₁₂), Quercetin 4-glucoronide (C₂₁H₁₈O₁₃), Wogonin (C₁₆H₁₂O₅), Luteolin (C₁₅ H₁₀ O₆), Herbacetin (C₁₅H₁₀ O₇), and Cirsimatin (C₁₇H₂₀O₆) were expressed with highest hits as the negatively charged lead molecules. Whereas, the alkaloid compound Maltaxazine (C₁₀H₁₃O₂) and the sequeterpenoid compound Vernolepin (C₁₅H₁₆O₅) were expressed with highest hits as the positively charged lead molecules. The obtained results confirmed that the leaves of *A. hypogaea* showed the presence of bioactive molecules with pharmacological potentials. So in addition to the pod yield the leaf materials has been used as the raw materials to the pharmaceutical industries and it is an additional income to the farmers.

Keywords: Ground nut; HR-LCMS profiling, Soxhlet extraction, bioactive compounds.

Antioxidative Proficiency and Molecular Docking of the Phytochemicals from the Leaf Calli of *Bridelia scandens* Wild.

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Abstract

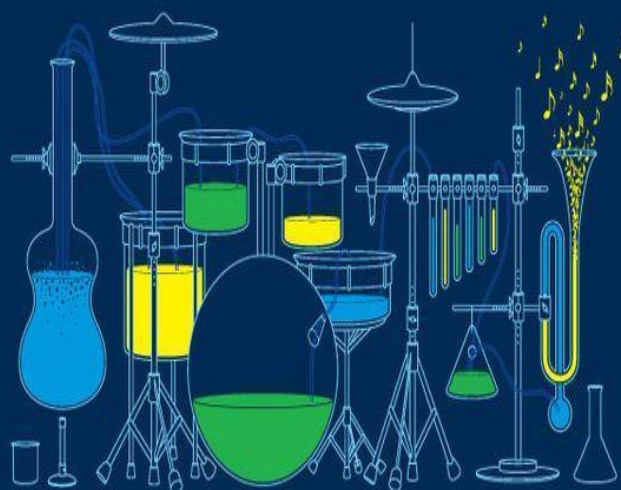
Bridelia scandens Wild., a member of the Euphorbiaceae renowned for its therapeutic applications in treating genital cancers, asthma, bronchitis, pleurisy, exudation, and oral sores. The in vitro derived calli is a boon to produce phytochemicals all around the year without depleting the natural population. This study aimed to assess the antioxidant potential of the leaf calli methanol extract (LCME) of *B. scandens*. The LCME underwent rigorous evaluation using diverse antioxidant assays, encompassing DPPH and nitric oxide radical scavenging

assays, along with a reactive oxygen species (ROS) assay conducted on HEK-293 cells. Additionally, a molecular docking study of compounds identified through high-resolution liquid chromatography-mass spectrometry (HR-LCMS) was carried out, targeting Human peroxiredoxin-5.

The results of HR-LCMS analysis revealed azaperone, bifonazole, fusidic acid, lasalocid, and quinine as the predominant phytochemicals. The LCME extract demonstrated noteworthy antioxidant efficacy in DPPH and nitric oxide radical scavenging assays, yielding IC₅₀ values of 132.54 and 140.54, respectively. Quantitative phytochemical analysis indicated the presence of alkaloids (83.9 µg/mg) and phenolics (112.3 µg/mg). lasalocid identified as the principal phytocomponent showing considerable inhibitory activity against the Human peroxiredoxin-5 protein which is responsible for the increase of ROS in pathogenesis. This study exhibited significant anti-oxidant activity of the LCME and the calli-derived compound lasalocid. It also authenticates the traditional medicinal assertions associated with *B. scandens* emphasizing its potential as an antioxidative therapeutic agent and also continuous production of therapeutic molecules from the *in vitro* derived calli without depleting the natural population.

Keywords: *Bridelia scandens*, leaf calli, Antioxidant, HEK-293

Pure and Applied Chemistry



The Role of Perovskite Materials in India's Commitment to Net Zero by 2070

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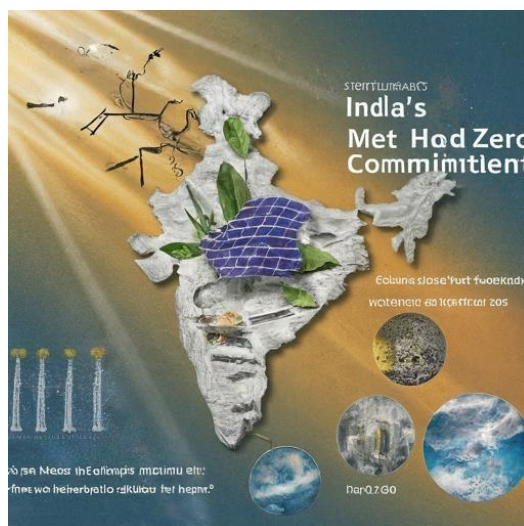
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Abstract

India's ambitious commitment to achieving net zero emissions by 2070 across all sectors, including science and technology, necessitates a critical evaluation of materials and practices with significant environmental impact. The semiconductor industry, heavily reliant on silicon-based materials, presents a major challenge in this pursuit. To minimise this essential sector's environmental footprint, researchers are actively exploring alternative materials with promising properties capable of replacing silicon. One such promising candidate is the class of Metal Halide Perovskite materials (MHPs). These materials boast unique characteristics that make them attractive alternatives in various semiconductor applications—exploring promising perovskites: importance, types, and potential for a sustainable future in semiconductors, aligning with India's net-zero goal.

Keywords: Inorganic Halide perovskites, charge collection efficiency, non-radiative recombination

Graphical abstract



Efficient Synthesis of Novel Coumarin Derivatives as Fluorescent Probes

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Abstract

Fluorescent probes play a pivotal role in various scientific disciplines, including biochemistry, medicinal chemistry, and materials science. Coumarin derivatives as fluorescent probes with enhanced properties have been used for diverse applications such as biological imaging, metal ion sensing, environmental monitoring, pH sensing, biochemical assays, drug delivery, optical sensors, and photochemical studies. Nowadays, fluorescent imaging has become a well-established and reliable tool for monitoring target analytes in complicated biological systems owing to its superiority in terms of high sensitivity, non-destructive detection, and real-time response. In this work, we designed a coumarin hybrid with two distinct possibilities: a molecule with fluorescent properties and a targeting moiety to specifically bind to the target of interest. We started preparing a focused library of coumarin hybrids and planned to assess their efficacy against different targets, such as anticancer, antifungal, and antibacterial.

Keywords: Fluorescent probes, coumarin derivatives, Biological Imaging, Metal Ion Sensing, pH Sensing, Biochemical Assays, Optical Sensors,

Photophysical Investigation of Schiff Base derivative act as “Turn-Off” fluorescence Chemosensor for the detection of Hg²⁺ metal ion detection.

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Abstract

A highly efficient fluorescence sensor Schiff Base, based on benzothiazole, has been successfully designed and synthesized for the selective detection of Hg²⁺. The structural confirmation was confirmed through FT-IR, ¹H-NMR, ¹³C-NMR, mass, and elemental analysis. The photophysical characteristics of the derivative were investigated in solvents with varying polarity, revealing a significant bathochromic shift in both absorption and emission spectra. Photophysical parameters such as dipole moments, stock shift, oscillator strength, and fluorescence quantum yields were notably influenced by solvent polarity. Furthermore, the Schiff base derivative functions as a fluorescent chemosensor for the detection of Hg²⁺ metal

ions. The obtained data indicate a concentration-dependent quenching of fluorescence intensity, establishing the derivative as a "Turn-Off" fluorescence chemosensor for Hg²⁺ metal in DMSO-water solution. The molecular coordination complex between the derivative and Hg²⁺ was confirmed to be in a 1:1 ratio through Benesi-Hildebrand, Stern-Volmer, and Job's plot measurements.

Keywords: Photophysical; Fluorescence; Schiff Base; Dipole-moment; Stokes shift; Sensor;

Synthesis, Characterization and Photophysical Properties of 2,2'-di(pyren-1-yl)-1,1'-bibenzo[d]imidazole; a bis-imidazole derivatives

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Abstract

The synthesis of the bis-imidazole derivative involved the ferricyanide oxidation of its mono-imidazole derivative counterpart. The mono-imidazole derivative was obtained by reacting an aldehyde with 1,2-diaminobenzene in the presence of ammonium acetate in ethanol. Structural confirmation of the compounds was investigated by the IR, ¹H-NMR, ¹³C-NMR and Mass spectral analysis. The photophysical properties of the bis-imidazole derivative, including molar absorptivity, transition dipole moments, Stokes shift, oscillator strength, and fluorescence quantum yield, were systematically investigated across ten different solvents. The bis-imidazole derivative exhibited favorable photophysical characteristics, influenced by the varying polarities of the solvents employed. The bis-imidazole demonstrates favorable photophysical attributes, rendering it a promising candidate for various applications, including but not limited to optical data storage, sensor technology, anti-counterfeiting systems, memory devices, and optical molecular switches.

Keywords: One-pot; Imidazole; Bis-imidazole; Stokes Shift; Oscillator strength

Synthesis of Biologically Active Coumarin based Schiff Base

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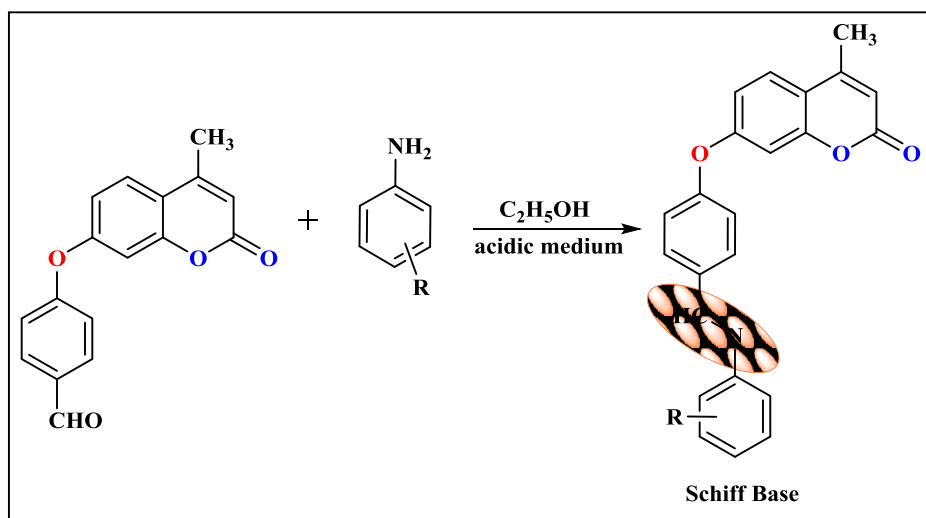
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Abstract

Bioactive compounds derived from natural plant that contains 4-methylumbelliferone core possesses a wide variety of pharmacological properties including anticancer, antimicrobial, antiviral, anticoagulant, antihypertensive, anti-inflammatory and antioxidant. In this study, firstly we have synthesized 4- methylumbelliferone using resorcinol and ethyl acetoacetate in the presence of H_2SO_4 . After the formation of coumarin, the reaction further proceeds under reflux condition for the synthesis of schiff base. A novel series of schiff base were synthesized by using 4-flourobenzaldehyde and K_2CO_3 in DMF with an aim to produce promising anticancer agents.

Keywords: pharmacological properties, 7-hydroxy-4-methyl coumarin, pechmann synthesis



Uranium (VI) Incorporated Polyoxometalate: Synthesis, Characterization and Electrocatalytic Water Reduction to Molecular Hydrogen

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Abstract

Design and synthesis of earth-abundant electrocatalyst for hydrogen evolution reaction (HER) is crucial to address the increasing global energy crisis. Here we report, a uranium (VI) incorporated polyoxometalate compound, $K_{10}[\{K_4(H_2O)_6\}\{UO_2\}_2\{(\alpha-PW_9O_{34})_2\}]\cdot 13H_2O$ (**1**), isolated in a facile one-pot aqueous synthesis. The title compound has been characterized by routine analytical and spectral techniques (such as FTIR and electronic spectroscopy, FESEM-EDX microscopy, ICP-OES, *etc.*) including its unambiguous characterization by single-crystal X-ray diffraction analysis. In the crystal structure, two intrinsically generated tri-lacunary Keggin $\{(\alpha-PW_9O_{34})_2\}^{9-}$ clusters are sandwiched by a complex cation $[\{K_3(H_2O)_6\}\{UO_2\}_2]^{7+}$ leading to the formation of a water-insoluble Dawson type polyoxometalate compound **1**. Interestingly, compound **1** acts as an efficient electrocatalyst for water reduction to molecular hydrogen in a wide pH window. The complete electrochemical investigation (such as kinetic and controlled experiments) uncovers that the present system is a highly efficient molecular HER electrocatalyst.

Keywords: Polyoxometalates, Uranylacetate, Keggin type cluster, Electronic microscopy, Single-crystal X-ray diffraction, Electrocatalyst, Hydrogen evolution reaction (HER).

Mathematical Approach to Balance the Chemical Reaction Equations

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Abstract

This study uses a system of linear equations with the Gauss and Gauss-Jordan elimination method and Cramer's rule to balance the chemical reaction or the burning of hydrocarbons. These methods are not suitable for balancing the chemical reactions, as reported previously. The current study's findings demonstrate that by applying the linear equations technique, these reactions can be balanced. Additionally, a variety of computational programming tools

and software, including MATLAB, Python (Jupyter Notebook), and Lindo, were used to verify the findings of this work. The numerous hydrocarbon combustion reactions are likewise obtained using the above approaches, demonstrating the generality of the current investigation. Therefore, it is expected that the current study's findings will pave the way for the use of mathematical protocols and their computational equivalents to balance chemical reactions, and that eventually, any chemical reaction with specified reactants and products may be handled mathematically.

Mathematics Subject Classification: 15A06;15A52;15A12;65F05;65F35.

Keywords: Chemical Reaction, Linear Equations, Balancing Chemical Equations, Gauss Elimination Method, Gauss-Jordan Elimination Method, Cramer's Rule.

Synthesis of Novel Betti Bases by Baker Yeast - A Green and Sustainable Approach.

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Abstract

Betti reaction is a multi-component reaction between 2 naphthols, Arylaldehydes and Ammonia yielding amino Benzyl naphthols familiarly known as Betti bases. Due to the unveiling of the pharmacological and synthetic potential of betti bases, a huge increase in the studies reporting novel synthetic methods for the efficient synthesis of Betti base was observed.

In our recent work we used one pot multi-component modified Betti reaction with β naphthol, aromatic Aldehyde, and Immidazole amine. By employing aromatic Aldehyde, β naphthol and Immidazole amine in place of Ammonia in one pot multi component Betti reaction at room temperature catalyzed by baker yeast a good yield of Betti base was obtained. The developed methodology has many advantages as high yield of product and use of baker yeast as the catalyst make method more eco-friendly which aids in the sustainability of the environment.

In continuation of the work done, we are in a process of preparing different series of betti bases by using substituted β Naphthols and substituted aldehyde.

Key words: Betti base, 2 naphthols, ammonia, arylaldehydes, amino benzyl naphthols, aldehyde, immidazole amine

Coumarin-Indole Derivatives: Emerging Paradigms as Anticancer Agents

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Abstract

Coumarin-indole derivatives have gained significant attention in recent years as a promising class of compounds with anticancer potential. This review provides an overview of the structural modifications and pharmacological advancements in coumarin-indole derivatives, emphasizing their diverse mechanisms of action and therapeutic applications in cancer treatment. The fusion of coumarin and indole moieties in these compounds confers unique bioactive properties, leading to targeted cytotoxicity against various cancer cell lines. *In vitro* and *in vivo* studies showcase the efficacy of these derivatives in inducing apoptosis, disrupting cell cycle progression, and inhibiting angiogenesis. This review insights into the molecular pathways targeted by these derivatives and their potential as multitargeted agents are discussed.

Keywords: Coumarin-indole, anticancer, therapeutic applications, cytotoxicity, multitargeted agents.

Different Approaches for the Synthesis of Coumarin and its Applications

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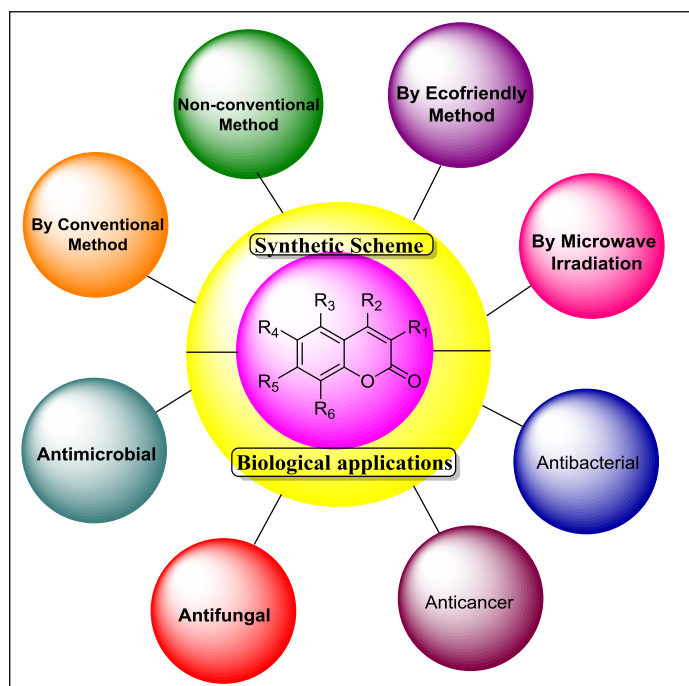
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Abstract

Coumarin is a class of phenolic compounds formed by the fusion of β -pyrone rings with benzene. We can be synthesized coumarin in the laboratory by different methods including pechmann condensation, Knoevenagel synthesis, perkin reaction, and Reformatsky by employing a variety of catalyst. In this review, we will discuss different synthetic methods by various approaches like conventional, non-conventional, and eco-friendly methods. Coumarin analogs is a diversity-oriented structure with promising biological activity and therapeutic applications which include antiviral, antifungal, antimalarial, anticoagulant, anti-cancer, anti-diabetic, antimicrobial, and anti-inflammatory.

Keywords: Coumarin, Pechmann condensation, Knoevenagel synthesis, Antifungal, Antibacterial, Anticancer



Ban on single use plastic (SUP) - A step towards protection health and environment

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Abstract

Plastic being cheaper, lightweight, and easy to produce has entered into all spheres of life. Today, it seems that plastic is indispensable. Because of our lifestyle, plastic waste has become a nuisance and the management of plastic waste is a serious problem as it is threatening our environment and life on earth and water bodies. Single-use plastic (SUP) refers to items like earbuds, balloons, ice cream, cups, glasses, and wrapping or packing films around invitations cards, sweet and article boxes like cigarette packets, grocery bags, food packaging, water bottles or bottles or straws as well as cutlery products like forks, spoons, knives, and trays etc, that are used only once before they are thrown away or sometimes recycled and is major nuisance.

In June 2018, Prime Minister of India Narendra Modi announced that India would eliminate all SUP items in the country by 2022. The centee notified the plastic waste Management Amendment Rules, 2021, prohibiting the manufacture, import, stocking, distribution, sale, and use of several SUP items from July 1, 2020.

In the present paper an attempt has been made to discuss the policies made by the Government for banning SUP items and their shortcomings. Also, it is concluded that the goal of bannig of SUP items can be achieved only through people's participation.

A Review: Quinoline-An Exclusive Pharmacophore in drugs discovery for Alzheimer's disease

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Abstract

The scientific community is working to comprehend the importance of fused and heterocycles in drug discovery programs, because of the variety of biological activity and synthesis. Among all organic molecules, heterocyclic compounds are the largest and most diverse family. Heterocyclic compounds are widely known these days, and their number is growing daily as a result of extensive synthetic study as well as their synthetic value. In most scientific domains, including medical chemistry and biochemistry, heterocyclic molecules play a significant role. This review highlights the trends in using quinoline moiety nitrogen-based heterocycles in drug design as antifungal, anti-inflammatory, antibacterial, antioxidant, anticonvulsant, antiallergic, herbicidal, anti-Alzheimer, and anticancer agents.

Keywords: Quinoline; Heterocyclic compounds, Alzheimer's disease Biological activity, Medicinal chemistry.

A Review: Current Progress in Synthetic Approaches and Biological Applications of Triazole Derivatives

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Abstract

Since the beginning of click chemistry, heterocyclic compound triazole has been at the centre of modern organic chemistry. Triazole is a five-membered heterocyclic compound containing three N-atoms as hetero atoms in their ring system. Triazole was originally known as pyrrodiazole and it was first discovered by Bladdin in 1885. Generally, triazole has been synthesized by the reaction between terminal alkyne and azide using copper (I) as catalyst. Researchers were initially drawn to the broad biological profile of this skeleton, which stimulated their curiosity about its pharmacophoric aspects. Therefore, we provide a review that focuses on the extensive synthesis of triazole hybrids via reflux method, microwave method, ultrasound method, and metal catalyst as well as their biological activities, including anticancer, antibacterial, antifungal, antiviral, and antitubercular. The present review aims to investigate new trends in chemistry of heterocycles incorporating imine linked 1,2,3-triazole, spirochromenocarbazole tethered 1,2,3-

triazole, 1,2,4-triazole derivatives containing amide, and coumarin 1,2,3-triazole, etc. as well as their biological aspects.

Keywords: Sustainable Chemistry, Drug Development, Biological Application, 1,2,3-triazole, 1,2,4-triazole

Synthesis Approaches and Biological Applications of Novel Heterocyclic Organic compounds

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Abstract

In this work, multi-step synthesis and Biological applications of novel heterocyclic compound (I). It has been prepared by using Shikimic acid with suitable dehydration reagents such as DCC/TEA, based on the molecules functional group may its shows biological activity and we did send the sample for Biological activity and we are waiting for results of Anti-Cancer or Ant-viral. The structure of the synthesized compounds (I) was confirmed using mass, H1-NMR, and C13 spectra. TLC indicated a single spot for these compounds.

We know that most heterocyclic compounds are drugs or co- drugs. In our investigation, different groups were used as a precursor for heterocyclic synthesis.

Keywords: Biological activity of Novel Heterocyclic compounds.

Photocatalytic degradation of Bisphenol A by ZnO nanoparticles

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Abstract

Because Bisphenol A (BPA) has negative effects on the environment and human health, research into its degradation is essential in the field of chemical science. BPA is well known for causing endocrine disruption in humans, among its many other negative effects. Because of its low cost and non-toxicity, ZnO is an n-type semiconductor that has been used as a possible photocatalyst. Its binding energy is 3.2 eV. BPA degradation is examined under a variety of situations using a UV-Vis spectrophotometer. BPA concentration, HClO₄, CTAB, and SDS quantity were among the variables that were looked into. Obtained results show that as the concentration of these compounds increases, the degradation of BPA also increases.

Keywords: Bisphenol A (BPA), photocatalytic kinetics, Zinc oxide, Nanoparticles

Conductometric Studies on Interaction of Amino Acids with Anti- Cancer Drugs: A Review

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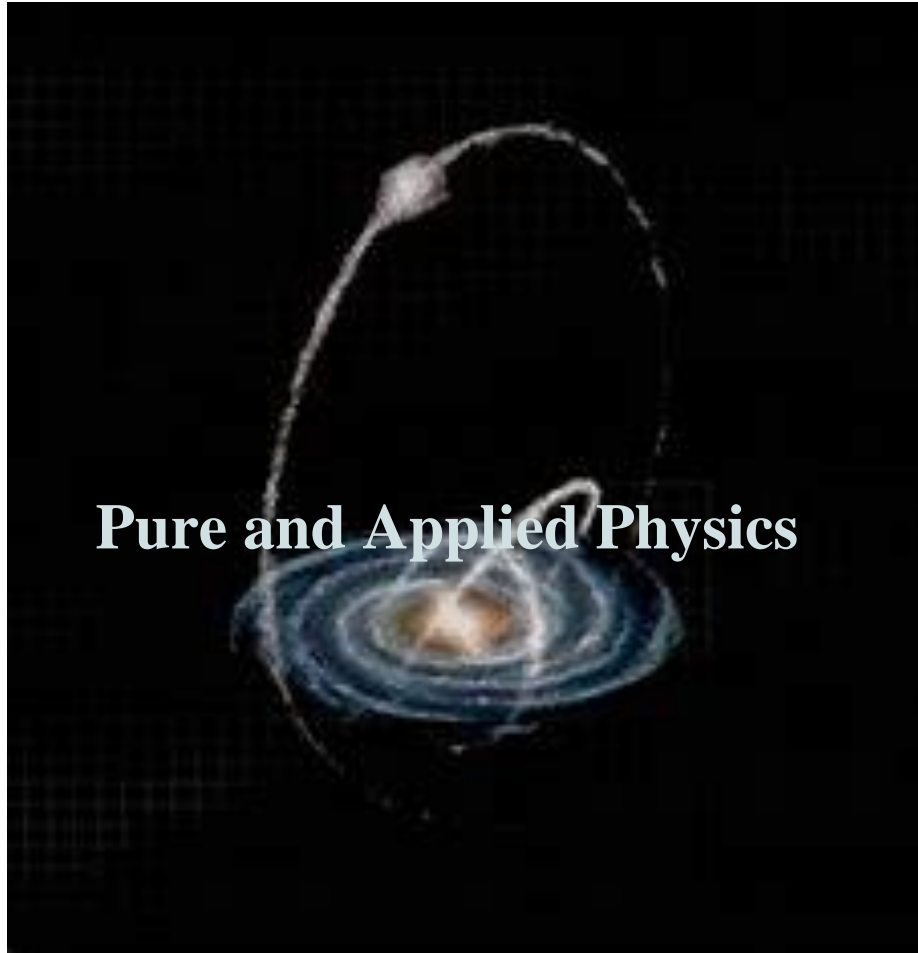
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Abstract

Drug-macromolecule interactions are important in drug transport and protein binding. Understanding protein structure is challenging, so amino acids are used to study drug-protein interactions. Cancer is a group of diseases with abnormal cell growth that can spread to any part of the body. Anti-cancer drugs are used to treat cancer, so understanding their interaction with amino acids is significant for drug development. The conductometric technique is highly useful for studying the solution behavior of various systems, including drugs. Keeping this in mind in this review we have discussed the conductometric interaction between amino acids and anticancer drugs.

Keywords: Amino acid; anti-cancer drug; molecular interaction and conductometric properties.



A review of recent trends in non-invasive in-ovo sexing methods

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Abstract

In large-scale breeding applications, laying line male chicks are terminated. Determining the gender of chicks before hatching is a significant issue. This study reviews non-invasive in-ovo sexing methods. It mainly focuses on spectral, acoustic, morphological, and VOC-based approaches in determining the early sex determination of the embryos before the nociception period. spectral-based techniques have a lot of promise as non-invasive approaches. Acoustic methods are susceptible to noise from the surroundings. The arrangement of blood vessels and the external structure of the eggshell, as well as morphology-based research, offer new tools for the ovo sexing of chicken eggs. Nonetheless, they have difficulties with the eggshell's colour, thickness, and smoothness. Early incubation sexing of chicken eggs is made possible by VOC profiling; further research is needed to examine potential uses, as species or feed may impact the VOC composition. There are still reports of non-invasive methods, and none of the technologies meet industry standards. To fully grasp the possibilities and expectations of in-ovo sexing procedures in the chicken industry, more investigation and market monitoring are required.

Keywords: non-invasive, in-ovo sexing, volatile organic compounds

Study on Excess Permittivity of Avian Species Erythrocytes through Dielectrophoresis

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Abstract

The main purpose of this article is to explore the cellular level ideas by examining the electrical properties of Avian Species erythrocytes under different physiological conditions using the technique of Biological cell dielectrophoresis. The research papers present data on the excess permittivity (Ke) and Dielectrophoretic Collection Rate (DCR) of Avian Species erythrocytes. In this investigation, a suspension of Avian Species erythrocytes is exposed to a non-uniform electric field created by a pin-pin electrode setup. The DCR parameter is measured within the frequency range of 1 MHz to 2 MHz, while maintaining a constant cell concentration and applied voltage. Ke is then calculated based on the knowledge of DCR.

The study of the Excess permittivity parameter provides insights into understanding the electrical composition of biological cells and electrophysiological changes.

Key Words: Dielectrophoresis, DCR, Excess permittivity, Avian Species Erythrocytes.

Gaia: A Marvel In The Outer Space

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Abstract

This paper aims to provide an overview of the Gaia milestone in astronomy. A European Space Agency (ESA) mission, Gaia aims to create the largest, most precise three-dimensional map of our galaxy by surveying one percent of the 100 billion stars with micro-arc seconds precision. Launched in 2013, Gaia has provided a time-based record of the brightness and position of each source over time, as well as the ages, chemical compositions, and velocities of celestial objects. Astrometry, a branch of astronomy, plays a crucial role in understanding the distances and motions of celestial objects, such as planets and stars, and is essential for various applications in astronomy.

Keywords Gaia, Astrometry, Microarc Second, Celestial Objects

Mega Projects in Astronomy in India

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Abstract

In recent years, India has entered several mega-projects in the area of Physics & Astronomy. Some of these are the Large Hadron Collider, Indian Neutrino Observatory, Square Kilometer Array, Thirty Meter Telescope, ASTROSAT, LIGO -India, etc. These are projects where India is a partner country in a consortium of International Communities with a participation of the order on 10% in cash or kind. These mega-projects will provide enormous opportunity for the researchers in these areas. The talk will describe the main aspects of these projects and the future of Physics and Astronomy in India.

A Comparative Study of the Surface Dew Point Temperature, Lifted Index, Precipitable Water and Precipitation over Hyderabad (India)

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Abstract

This study examines the comparative study of the stability indices such as Lifted index (LI), and humidity parameters such as Surface dew point temperature (Td) and Precipitable water (PW) and also explores the impact of these parameters on precipitation over Hyderabad, India. For this analysis, we obtained atmospheric data of LI, Td, and PW from the Wyoming Weather Web for the period January 2010 to December 2019, and monthly average precipitation data for the same period were obtained from NASA Data Access Viewer. For the ten-year averages of monthly mean data, correlation coefficients were observed between Td and PW (0.95), between LI and PW (-0.82), between PW and precipitation (0.96) and between LI and precipitation (-0.69). Whereas, for complete time series monthly mean data, correlation coefficients were observed between Td and PW (0.83), between LI and PW (-0.74), between PW and precipitation (0.78), and between LI and precipitation (-0.51). The degree of relationship between Td and the natural logarithm of PW was excellent over Hyderabad and a regression equation relating the two parameters was computed. We also observed that more precipitation occurs when precipitable water values range from 40 mm to 60 mm and when LI is more negative. From this study, it can be concluded that the accommodation of PW in the atmosphere can be related to the environmental temperature and dew point. These findings suggest that a comprehensive understanding of these meteorological parameters plays an important role in predicting and analysing precipitation over Hyderabad.

Keywords: Dew point temperature, Lifted index, Precipitable water, Precipitation.

Synthesis, Physicochemical and third order nonlinear optical properties of Bis-Chalcone as push-pull Chromophore

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Abstract

Bis-Chalcone (BBDP) was synthesized via condensation reaction of 4-(dimethyl-amino)-benzaldehyde and 1,1'-([1,1'-biphenyl]-4,4'-diyl) di (ethan-1-one). The structure of the chalcone compound was confirmed by Mass Spectra, ¹³C-NMR, ¹H-NMR, and IR spectroscopy. Various

physicochemical parameters such as dipole moments, Stoke-Shifts, Oscillator-strength, dielectric constant, and quantum yields of fluorescence were explored by analysing the emission and absorbance spectra in various solvents. The compound (BBDP) Exhibited a bathochromic shift as the solvent polarity increased, transitioning from n-Hexane to DMSO. Additionally, we examined the third-order nonlinear optical properties of the bis-chalone using Z-scan techniques in CHCl_3 solvent. The assessments were conducted using a continuous wave (CW) diode laser operating at a wavelength of 520 nm in CHCl_3 solvent. The third-order nonlinear optical properties, including the nonlinear refractive index (NLRI) n_2 , nonlinear absorption coefficient (NLAC) β , and nonlinear susceptibility ($\chi^{(3)}$), were evaluated across different solution concentrations and laser power levels. The determined values for n_2 , β , and ($\chi^{(3)}$) were found to be notably high, approximately on the order of 10^{-7} (cm^2/W), 10^{-3} (cm/W), and 10^{-6} (esu), respectively. Consequently, bis-chalcone (BBDP) emerges as a promising candidate for applications in nonlinear optical devices and optical limiting (OL).

Keywords Bis-Chalone · Chromophore · Stokes Shift · Z-scan · Nonlinear refraction and nonlinear absorption

Fractal Behaviour of Solar Flares ‘Unwaan: Shamsii Sho’lon ka Fractal Jibil’lat

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Abstract: A solar flare is a sudden brightening observed over the sun’s surface or the solar limb, which is interpreted as energy release of large amount up to the order of 6×10^{26} Joules of energy (about a sixth of the total energy output of the sun each second). A Solar flare is a sudden eruption of magnetic energy released on or near the surface of the sun, usually associated with sunspots, accompanied by bursts of electromagnetic radiation and particles. Solar flares strongly influence the local space weather in the vicinity of the Earth. They can produce a stream of highly energetic particles in the solar wind, known as a solar proton event or “coronal mass ejection” (CME). These can impact the Earth’s magnetosphere and present radiation hazards to spacecraft, astronauts and cosmonauts. In the present paper, attempts have been made to analyze the solar flare index signal developed at Mc-Math-Hulbert Solar Observatory on a daily basis from 1st January 1966 to 31st December 2008 for comprehending its self-similarity or fractal nature by Higuchi method.

افراط کائنات..... ہماری کائنات کا حیرت انگیز مظہر۔

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تخلیص

ہماری کائنات کئی سربت رازوں کا مجموعہ ہے جیسے جیسے سائنس ترقی کرتی گئی ہماری کائنات کے یہ پراسرار سربت راز منکشف ہونا شروع ہوئے آج ہم ہماری کائنات میں پائے جانے والے حیرت انگیز مظہر افراط کائنات کے بارے میں معلومات حاصل کریں گے۔

افراط کائنات کو سمجھنے سے پہلے ہم انفجار عظیم کو سمجھنا ہوگا۔ انفجار عظیم یعنی بگ بینگ (Big Bang) اس کائنات کی پیدائش کے بارے میں پیش کیا جانے والا ایک علمی نظریہ ہے اور کائنات کے آغاز کے لمحے سے متعلق ہے۔ بگ بینگ یعنی عظیم دھماکہ کا واقعہ آج کے دور سے تقریباً 13 ارب 70 کروڑ سال قبل ظہور پزیر ہوا تھا اور زمین کی تشکیل بگ بینگ کے تقریباً ساڑھے نو ارب سال بعد ہوئی۔

اس مقالہ میں ہم افراط کائنات کو سمجھیں گے۔ اسکی ضرورت کیوں محسوس ہوئی۔ کیا مسئلے تھے جن کا حل ہمیں افراط کائنات کے نظریہ سے ملتا ہے ہم جانے گیں۔

کوما کے جھٹ کے مرکز میں کہکشاؤں کا مورفولوجی مطالعہ

پروفیسر سید نجم الحسن

شعبہ ریاضی، مولانا آزاد نیشنل اردو یونیورسٹی

حیدرآباد

خاکہ

اس مقالے میں ہم F814W بینڈ میں 19.5 شدت سے زیادہ کوما گھر مٹ کے مرکزی علاقے میں کہکشاؤں کی ساختی خصوصیات اور مورفولوجی پیش کرتے ہیں۔ ہم HST/ACS کوما کلسٹر ٹریڈری سروے سے مواد استعمال کرتے ہیں۔ بنیادی طور پر سپیکٹرو سکوپک ریڈ شفٹس کا استعمال کرتے ہوئے، ہم 219 کہکشاؤں کے اپنے نمونے سے 132 ارکان تلاش کرتے ہیں۔ ہم GALFIT کا استعمال کرتے ہوئے نمونے کی ابھاری کئی کاسزنا پیش کرتے ہیں اور اپنے نمونے کے لیے پیمانے حاصل کرتے ہیں۔ بقیہ کے بصری معائنہ کا استعمال کرتے ہوئے، ہم کہکشاؤں کی مورفولوجی کی درجہ بندی کرتے ہیں۔ ہم نے ابھار اور مکمل روشنی کا تناسب (بی / ٹی) کلر میگنٹیو ڈرلیشن (سی ایم آر) سیرسک انڈیکس (این) کور مینڈی ریلیشن اور ابھار اور کہکشاؤں کے لیے ان پیمانوں کے درمیان کراس ارتباط کے ساتھ مورفولوجی کی اقسام کے تعلق کا مطالعہ کیا۔ یہ کام ہمیں مختلف پیرامیٹرز جیسے بی / ٹی، رنگ اور این کے درمیان اہم تعلقات کو سمجھنے کے ساتھ ساتھ کور مینڈی خاکہ اور ان کے سیرسک انڈیکس میں ان کے مقامات کے لحاظ سے ان کہکشاؤں کے مختلف پہلوؤں کو سمجھنے میں مدد کرتا ہے۔ شماریاتی طریقوں کا استعمال کرتے ہوئے، ہم دیکھتے ہیں کہ E/SO, SO کہکشاؤں غیر اراکین کے مقابلے میں اراکین کی آبادی میں نمایاں طور پر زیادہ ہیں۔

کلیدی الفاظ: کہکشاؤں: جھٹ: انفرادی: کوما، کہکشاؤں: الپٹیکل اور لینکولر، سی ڈی، کہکشاؤں: ارتقاء

Science in Teaching & Learning for Sustainable Development

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Abstract

This paper mainly focuses on opportunities in Teaching & Learning to share their innovative research methodologies in real-life classrooms specifically in the field of school education and also is to inculcate the scientific spirit among the students. This paper focuses on real-life experiences of a teacher who shares their great skills with students of a broad age group to improve their innovative skills. In the present digital era, students are well-equipped with many of the gadgets and are aware of many things before being taught in the class. The basic skill required by teachers in today's generation is to accept the challenges in the classroom and contribute to the new means of imparting education. Engaging, counseling, and motivating a group of students is very challenging. Every child has their own grasping capacity, conceptual clarity, and understanding levels are different where innovations are required in the classrooms. Teachers who are already experts have to inculcate recent technologies in the field of science of teaching and learning to improve the status of students. Hence, More emphasis is given to the methodologies that are cost-effective, open source and also can be easily adopted where no resources are required which develops innovative skills among the students. This will be highly helpful in the field of science in teaching and learning for sustainable development.

Beyond the Traditional Classroom: Exciting Science Teaching Methods for School Levels

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Abstract

The advancement of a country is contingent upon the caliber of its educators. A teacher assumes a crucial role in enhancing the standard of education within schools. Consequently, teaching is regarded as the most esteemed occupation among all others. Teaching is not merely a vocation, but rather an art of conveying knowledge with fervor, and only those who possess artistic abilities can truly excel in this profession.

The conventional approaches to education require teachers to guide and control the learning process, resulting in students being passive learners. However, in response to the current demands, traditional methods are being substituted with novel and inventive approaches and techniques.

“It is the supreme art of the teacher to awaken joy in creative expression and knowledge.”

Albert Einstein

Nowadays, the primary obstacle faced by educators is capturing and retaining the attention of every student while effectively conveying ideas and concepts. The objective is to establish a lasting impression and promote enhanced learning, ultimately transforming the recipient into an active learner. To effectively address this challenge, teachers must incorporate innovative techniques and ideas into their teaching methods, thereby making the subject matter captivating.

This paper is designed to bring out new ideas and innovative techniques for school education. This paper will discuss various methods and techniques like Flipped Classroom, Role Play, Induction of a lesson with Story, Classes outside the Classroom, Z to A approach, Mnemonics Words, Science movies, Puzzles and Games and many more, and shed light on the challenges and opportunities that teachers face when incorporating these techniques into their everyday teaching and learning practices.

Key Words: Innovative Techniques, Flipped Classroom, Z to A approach, Mnemonics Words, Word Games

سائنس کی تدریس میں معلم اور اکتسابی ماحول کا اثر

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تلخیص

درس و تدریس ایک اہم علمی مشغلہ ہے جس میں معلم اکتسابی ماحول پیدا کرتے ہوئے تدریس انجام دیتا ہے معلم اپنی صلاحیت و تجربہ کے ساتھ ساتھ تدریسی آلات، سمعی و بصری آلات کا استعمال کرتے ہوئے اکتسابی ماحول پیدا کرنا معلم کی ایک اہم ذمہ داری ہے۔ اکتسابی ماحول کے سبب حصول علم میں دلچسپی کو برقرار رکھنے کے ساتھ ساتھ اس کے دور رس نتائج بھی حاصل ہوتے ہیں۔ کمرہ جماعت میں سائنسی آلات کی نمائش، سائنسدانوں کے سوانح حیات و تقاریر کا اویزاں کرنا، صاف صفائی وغیرہ ایک روایتی طریقے ہیں۔ اس کے ساتھ ساتھ عصر حاضر کے ٹیکنالوجی کا سہارا لیتے ہوئے اکتسابی ماحول کو مزید بہتر بنایا جاسکتا ہے۔ روزمرہ زندگی میں استعمال سائنسی آلات کے استعمال کے ذریعہ اس کی تفہیم میں سہولت پیدا ہوتی ہے۔ سائنسی ماحول، سائنسی لیاب سے نمونے ہونے ذہنوں میں پیوست ہوتے ہیں جو نئے انکشافات و اکتسابی جدت کو جلا بخشتے ہیں۔ سائنسی و اکتسابی ماحول سے تعلیمی مقاصد کی تکمیل کے ساتھ ساتھ مملکت میں سائنسی نکتہ نظر کے حامی طبقہ کی پرورش ہو سکتی ہے جس سے ہر شعبہ حیات میں کامیابی حاصل ہوتی ہے۔ سائنس دانوں کے فکر انگیز خیالات، تجربات، مشاہدات، واقعات کے ذریعہ غور و فکر کی صلاحیتیں پیدا ہوتی ہیں۔ گھروں میں کتابوں کے ساتھ ساتھ سائنس دانوں کے سائنسی کارناموں کو اویزاں کرتے ہوئے گھر میں بھی سائنسی ماحول پیدا کیا جاسکتا ہے جو وقت کی اہم ضرورت ہے۔

Emergence of CCE in Science Teaching and Learning: An Overview

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Abstract:

The educational landscape in India has witnessed a transformative shift through the implementation of continuous and comprehensive evaluation (CCE). CCE, which the CBSE introduced, aims to evaluate students holistically and goes beyond the parameters of conventional board exams. The Central Board of Secondary Education (CBSE) introduced the Continuous and Comprehensive Evaluation (CCE) system to revolutionize the assessment paradigm in Indian education. This paper aims to critically evaluate the effectiveness of the CCE system, particularly in the context of science teaching and learning in India's present scenario. The CCE system, which CBSE has implemented, aims to shift the emphasis from rote memorization to holistic development. It emphasizes a continuous evaluation process throughout the academic year, comprising formative and summative assessments. However, its implementation has faced challenges, including variations in interpretation and execution among schools, leading to inconsistencies in assessment practices. In the realm of science education, the CCE system has the potential to transform the teaching-learning process. It encourages a more practical and application-based approach, aligning with the National Curriculum Framework (NCF) 2005's objectives. However, the effective integration of formative assessments, such as quizzes, projects, and activities, is crucial for its success. Despite its potential benefits, the CCE system has encountered criticism for increasing the burden on teachers and students due to the extensive documentation and record-keeping requirements. Furthermore, concerns have been raised regarding the standardization and reliability of assessments, particularly in the absence of clear guidelines and training for teachers. In this paper, we are discussing CCE in light of NEP-2020.

Keywords: CCE, CBSE, Paradigmshift, NCF-2005, NEP-2020

Integrating Biomedical Disciplines into Science Teaching and Learning for a Sustainable Future: Innovations, Challenges, and Opportunities

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Abstract

This paper explores the integration of biomedical disciplines into science teaching and learning as a pathway towards a sustainable future or as a means to foster sustainability. By examining innovative approaches, interdisciplinary collaborations, challenges, and opportunities, as well as community engagement initiatives, this paper aims to shed light on

the potential of incorporating biomedical sciences into science education to address global health challenges, promote scientific literacy, and foster sustainable practices. Through interdisciplinary collaboration, experiential learning, and community engagement, educators can empower students to become informed, critical thinkers capable of addressing complex biomedical issues and contributing to a healthier, more sustainable world. From curriculum design and teacher training to resource allocation and ethical considerations, this abstract explores the multifaceted nature of integrating biomedical sciences into science education. By leveraging scientific advancements, promoting equity in healthcare access, and fostering interdisciplinary collaboration, the health sciences can contribute to building healthier, more resilient communities and achieving sustainable development goals.

Keywords: Biomedical Disciplines, Science Teaching, and Learning, Sustainable Future Innovations

Strategies for Teaching Science in elementary schools: In the light of NEP 2020

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Abstract

Science lays the foundation for the development of any society through discoveries and inventions and also by offering knowledge accessible to all. It brings technological progress in all spheres of life. Therefore, it is necessary that every citizen have scientific knowledge and an understanding of the daily life events and problems faced by humans. Science Education provides the required understanding and develops the capability to tackle the problem in an effective way and brings social responsibility in an individual. In today's world, science has become an integral part and entered deep into human life to an extent that we cannot imagine life without science. Hence learning of science has become an unavoidable part of our education system. It is the responsibility of teachers to develop scientific thinking and scientific attitudes among the students. In this regard, the researcher has reviewed various kinds of literature related to science teaching of the national and international levels and analysed documents related to school education such as the National Education Policy (NEP) 2020 and National Curriculum Framework, etc. The researcher has recommended effective strategies to be used in the elementary school in teaching science.

Keywords: Teaching science, scientific attitude, and National Education Policy 2020.

ہندوستان میں اساتذہ کی تعلیم کے مستقبل کے امکانات ITEP کے حوالے سے

A Future Prospects of Teacher Education in India with reference to ITEP

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Abstract

ہندوستان ہی نہیں تقریباً دنیا کے سبھی ممالک میں اساتذہ اور اساتذہ کی تعلیم و تربیت سب سے زیادہ موضوع بحث رہی ہے۔ اس بات کو دہرانے کی ضرورت نہیں کہ اساتذہ کسی بھی ملک کے مستقبل کے معمار ہوتے ہیں۔ سوسائٹی میں ان کو سب سے اعلیٰ مقام حاصل ہے اور بعض مذاہب میں تو انہیں دیوتا کا درجہ حاصل ہے۔ لیکن کچھ وجوہات سے اساتذہ اپنے اس مقام کو کھوتے جا رہے ہیں۔ قومی تعلیمی پالیسی 2020 دیگر پالیسیوں اور کمیشنوں کی طرح ہی اساتذہ کے وقار کو قائم رکھتے ہوئے ان کا رتبہ بلند کرنا چاہتی ہے۔ اس کے لئے پالیسی نے اساتذہ کی تعلیم و تربیت سے متعلق کئی ہدایات دی ہیں۔ اس پالیسی میں اساتذہ اور اساتذہ کی تعلیم و تربیت ہی ایک ایسا تعلیمی پہلو ہے جو سب سے زیادہ بحث و تجویز کا موضوع ہے اور اسے پالیسی کی دستاویز میں دو حیثیتوں سے شامل کیا گیا ہے۔ پالیسی کے حصہ اول (Part-I) اسکول ایجوکیشن کی پانچویں اکائی میں اساتذہ کی تعلیم و تربیت، ملازمت کی شرطیں و سہولیات، تعلیمی و ترجیحی لیاقت اور دیگر سہولتوں سے متعلق تفصیلی بحث کی گئی ہے۔ پالیسی کے دوسرے حصے (Part-II) ہائر ایجوکیشن یعنی اعلیٰ تعلیم کی اکائی نمبر 15 میں بھی اساتذہ کی تعلیم و تربیت اور ملازمت و شرائط کے ساتھ ساتھ اس ضمن میں ہونے والی اہم تبدیلیوں اور اساتذہ کی تعلیم و تربیت کے ہمہ جہتی اداروں و مستقبل کے امکانات سے بحث کی گئی ہے۔ اس سے اساتذہ کی تعلیم و تربیت، انتظام، Pre-service, and In-service، ٹریننگ، Employment، اساتذہ کی تعلیم کے ادارے، ان کے نصابات اور Duration وغیرہ سے اس کی اہمیت کا اندازہ لگایا جاسکتا ہے۔ پالیسی کی حتمی شکل سے قبل مسودے کے منظر عام پر آنے کے بعد سے ہی جو سب سے بڑا تعلیمی مدعا و مسئلہ رہا ہے وہ اسکولی تعلیم اور اساتذہ کی تربیت سے متعلق ہی ہے۔ بے شمار بحث و تجویز، سفارشات، مشورے اور آرا کے بعد اساتذہ کی دونوں حیثیت کو حتمی شکل دی گئی ہے۔ پالیسی کے مطابق درس و تدریس کے پیشے کو ممتاز کرنے کے لئے یقینی طور پر بہترین طلباء کا بالخصوص دیہی علاقوں سے انتخاب کیا جانا چاہئے اور انہیں چار سالہ بی۔ ایڈ پروگرام میں Merit کی بنیاد پر داخلہ دے کر اسکالرشپ کے ساتھ تربیت دینی چاہئے۔ اس چار سالہ تربیتی پروگرام کو Integrated Teacher Education Program (ITEP) کا نام دیا گیا ہے۔ اس پیپر میں چار سالہ مربوط اساتذہ تربیتی پروگرام ITEP کے جن مدعوں اور مسائل پر گفتگو ہوگی ان میں ----

ITEP سے نئی نسل کو ہونے والے فوائد،

ITEP کا کورس اور ذریعہ تعلیم،

ITEP نافذ کرنے والے تعلیمی اداروں کے مشکلات اور ان کا تدارک،

ITEP کا نصاب اور مستقبل میں پورے ایجوکیشن سسٹم پر ہونے والے مضمرات کا جائزہ شامل ہے۔

A Study of Mathematical Sciences in relation to Urdu Language and Culture

Dr. Bondu Raju

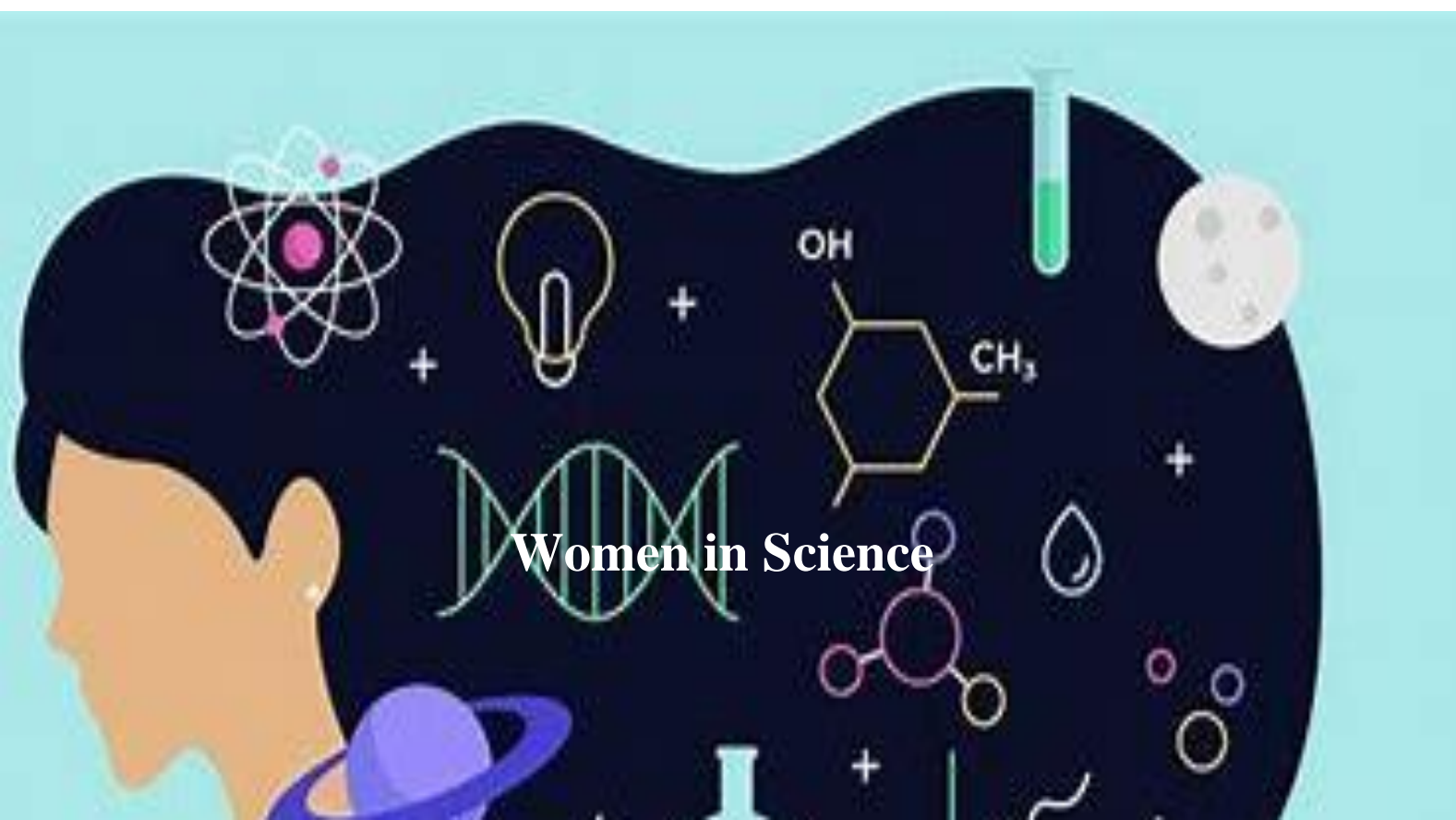
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Abstract

The study explores the relationship between mathematical sciences and the Urdu language, a language originating from the Indian subcontinent. It provides a historical overview of Urdu's evolution as a language of scholarship and intellectual exchange, highlighting the contributions of mathematicians and scholars. The research also examines the challenges faced in teaching mathematics in Urdu-medium schools. It also explores the development of mathematical terminology in Urdu, focusing on translation, adaptation, linguistic nuances, and standardization efforts. The study also investigates cultural perspectives, societal attitudes towards mathematics, and cultural influences on problem-solving approaches. The aim is to promote mathematical literacy in Urdu-speaking populations by fostering collaboration between mathematicians, linguists, educators, and cultural custodians.

Keywords: Mathematical Sciences, Urdu Language, Cultural Perspectives, Mathematical Education, Terminology Development, Interdisciplinary Research.



Empowering women for building sustainable assets

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Abstract

This paper draws upon the role of women in sustainable development and highlights the need for empowerment to ensure equitable distribution of resources. Women and girls make up more than half the world's population and they are on the frontlines, often more deeply impacted than men and boys by poverty, climate change, food and nutrition insecurity, lack of healthcare system, and global economic and environmental crises. Strengthening women's participating in the political sphere is also a critical step towards the empowerment of women. Women have a vital role in the environment and development. Their full participation is therefore essential to achieve sustainable development goals. Their contributions and leadership are central to finding a solution. With the new global 2030 roadmap and Sustainable Development Goals (SDGs) approved by UN Member States on 25 September 2015, we will take a look at how women are affected by SDGs, as well as how women and girls can and will be key to achieving these goals. Ending all forms of discrimination against women and girls is not only a basic human right, but it is also crucial to accelerating sustainable development. It has been proven time and again, that empowering women and girls has a multiplier effect, and helps drive up economic growth and development across the world. This paper delves into the role of women in achieving SDG and how SDG is going to impact women will be discussed.

Women in Astronomy

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Abstract

The International Astronomical Union Women in Astronomy (IAU WiA) working group (WG) is a part of the IAU Executive Committee that supports the needs and endeavors of women astronomers and initiates actions to advance equality of opportunity for women and men in astronomy. The new organizing committee of the IAU WiA WG was set-up in August 2021 with a 4-point plan, to enhance (i) Awareness & Sustainability via surveys, (ii) Training and Skill Building, (iii) Fundraising & (iv) Communication via dissemination of results in conferences, WG Magazines, newsletters, etc. to facilitate the career of women in astronomy. In talk, I present an overview of IAU WiA WG activities with a special focus on the Training and Skill Building efforts that can be adapted for differently abled and marginalized women researchers.

Challenges Faced by Women in Science: An Abstract Report

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Abstract

This report explores the multifaceted challenges encountered by women in the field of science. Despite advancements in gender equality, disparities persist, hindering women's progress in scientific careers. The report examines systemic barriers such as gender bias, stereotype threat, and lack of representation in leadership roles. Additionally, it discusses the impact of work-life balance, family responsibilities, and implicit biases on women scientists. Strategies for fostering inclusivity and addressing these challenges are also highlighted, emphasizing the importance of institutional support, mentorship programs, and advocacy for gender parity in science. By understanding and addressing these challenges, the scientific community can strive towards creating a more equitable and diverse environment conducive to the success of all scientists, regardless of gender.

Women can play a pivotal role in the progress and sustainability of the world if they are empowered through education and employment opportunities in Science, technology, innovation and through changing the social stereotypes that restrain them in certain workplaces. In the literature, few recently published studies exist that document the challenges faced by female scientists in their workplaces. The purpose of this study was to understand the challenges and coping strategies faced by female scientists around the world today, in order to contribute to their improved performance. A multi-centre electronic cross-sectional review survey across 55 countries was conducted to profile female scientists and to identify the challenges that they experience throughout their career as well as the coping mechanisms that they use to overcome the barriers. A total of 39 female scientists from different countries across the world were taken into consideration in our study and most participants were from the Asian region.

Most female scientists in our study belong to the middle and junior level career category. Most of the scientists reported availability of maternity leave at their workplace but less than a third reported presence of a creche at work. Workplace sexual harassment was reported by 24% of the study population. Work related stress (71.5%) and work life imbalance (46%) are also major challenges faced by female scientists. Self-confidence, dedication and hard work are the most commonly adopted coping strategy. Flexible work timings, woman-friendly management policies, fair appraisal and mentorship appear to reduce the work-related stress and improve work-life balance among female scientists. In conclusion, female scientists face numerous challenges, which can greatly affect both their individual and career growth. Intrinsic (personal) and extrinsic (institutional) factors are important for improving female scientists' wellbeing and productivity.

Beyond Glass Ceilings: Women Shaping the Future in Science

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Abstract

In the context of women in science, the "glass ceiling" refers to the invisible but pervasive barriers that prevent women from advancing to higher levels of leadership and achievement within the scientific field, despite their qualifications, skills, and ambitions. It represents the

- ❖ *limitations*
- ❖ *biases,*
- ❖ *and structural obstacles*

that impede women's progress, particularly as they strive for positions of authority, recognition, and influence within scientific disciplines and institutions.

The Impact of Advanced Reproductive Technologies on Women hood: A Sociocultural Perspective

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Abstract

Recent advances in reproductive technologies have opened up individuals and couples with previously unimaginable possibilities for conception and fertility management, fundamentally changing the face of modern healthcare in terms of how women, mothers, and parents are traditionally perceived.

Recent advances and future prospects in reproductive technology, particularly in the realm of artificial wombs, embryo creation using advanced synthetic biology approaches, unrestricted surrogacy arrangements, and so on, will call into question all traditional cultural and religious aspects of women and womanhood.

These technologies have undoubtedly improved medicalization and made family planning more accessible. However, it has stealthily stretched out the definition of what constitutes a family; traditional perception about the eminence of family system, conception, gestation, and childbirth processes, potentially reshaping how humans reproduce, as well as ethical quandaries regarding the definition of life, personhood, the psychological and emotional implications of gestating a foetus outside biological mother's body. Along with psychological and emotional impact on the growing and developing child there is also the possibility of misuse or abuse in research among other things.

On the societal level, it has the potential to influence intergenerational relationships and familial expectations. As men and women gain more control over their reproductive choices and timelines, generational disparities in attitudes toward fertility, parenthood, and family planning

may emerge. These differences can cause tensions or misunderstandings within families, particularly between older and younger generations, as perceptions of traditional family values shift in tandem with technological advances.

Although women can navigate their reproductive journeys with remarkable ease thanks to new reproductive technologies, their influence on womanhood transcends the field of medical innovation. Understanding the sociocultural implications of these technologies is critical for promoting reproductive healthcare practices that are equitable, inclusive, and empowering. We can work toward a future in which women's diverse experiences, needs, and identities are respected and supported in the context of reproductive healthcare by critically examining the intersection of technology, gender, and society.

This paper can be regarded as a baby step towards that goal.

Social Causes of Less Contribution of Women in the Field of Sciences: A Study of Sociological Perspective

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Abstract

Social Causes of Less Contribution of Women in the Field of Sciences: A Study of Sociological Perspective.

