

# 3<sup>rd</sup> International Conference on Recent Trends in Multi-Disciplinary Research



**26<sup>th</sup> - 27<sup>th</sup>  
December 2020  
Maldives**

**ICRTMDR-2020**



**ORGANIZED BY**

**INSTITUTE FOR ENGINEERING RESEARCH AND PUBLICATION (IFERP)**

**CO-HOST BY**

**CYRYX COLLEGE, AVID COLLEGE, MI COLLEGE & DEP OF CSE A.P.C MAHALAXMI COLLEGE FOR WOMEN**





# 3<sup>rd</sup> International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR –2020)

Maldives

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[www.iferp.in](http://www.iferp.in)

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Dep of CSE A.P.C Mahalaxmi College for Women

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IFERP-Explore

## **Editorial:**

We cordially invite you to attend the **3<sup>rd</sup> International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR-20)** which will be held at **Maldives** on **December 26<sup>th</sup>-27<sup>th</sup>, 2020**. The main objective of **ICRTMDR 2020** is to provide a platform for researchers, students, academicians as well as industrial professionals from all over the world to present their research results and development activities in relevant fields of Recent Challenges in Science and Technology. This conference will provide opportunities for the delegates to exchange new ideas and experience face to face, to establish business or research relationship and to find global partners for future collaboration.

These proceedings collect the up-to-date, comprehensive and worldwide state-of-art knowledge on cutting edge development of academia as well as industries. All accepted papers were subjected to strict peer-reviewing by a panel of expert referees. The papers have been selected for these proceedings because of their quality and the relevance to the conference. We hope these proceedings will not only provide the readers a broad overview of the latest research results but also will provide the readers a valuable summary and reference in these fields.

The conference is supported by many universities, research institutes and colleges. Many professors played an important role in the successful holding of the conference, so we would like to take this opportunity to express our sincere gratitude and highest respects to them. They have worked very hard in reviewing papers and making valuable suggestions for the authors to improve their work. We also would like to express our gratitude to the external reviewers, for providing extra help in the review process, and to the authors for contributing their research result to the conference.

Since October 2020, the Organizing Committees have received more than 112 manuscript papers, and the papers cover all the aspects in Science and Technology. Finally, after review, about 54 papers were included to the proceedings of **ICRTMDR-2020**.

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of **ICRTMDR-2020**. We would like to thank the keynote and individual speakers and all participating authors for their hard work and time. We also sincerely appreciate the work by the technical program committee and all reviewers, whose contributions made this conference possible. We would like to extend our thanks to all the referees for their constructive comments on all papers; especially, we would like to thank to organizing committee for their hardwork.





## Acknowledgement

IFERP is hosting the **3<sup>rd</sup> International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR -2020)** this year in the month of December. The main objective of **ICRTMDR** is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions. The sessions serve as an excellent opportunity to soak up information from widely respected experts. Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader.

I express my gratitude to all my colleagues, staffs, professors, reviewers and members of organizing committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to travel such a long distance to attend this conference.



**Rudra Bhanu Satpathy**  
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ICRTMDR -20

*3<sup>rd</sup> International Conference on  
Recent Trends in  
Multi-Disciplinary Research*

**Keynote Speakers**





**EASTERN SAMAR  
STATE UNIVERSITY**  
Excellence • Integrity • Accountability

***Dr. Andres C. Pagatpatan***

***Professor***

***Campus Administrator At Eastern Samar State University -Guiuan Campu***

**Message**

***On behalf of Eastern Samar State University, my cordial greetings to everyone.***

***The fast-paced and knowledge-based 21<sup>st</sup> century milieu ushers in ample opportunities for social development. Against the backdrop of this perpetually evolving environment, however, is the pressing need for collaboration among researchers, scientists, policymakers, among others, to establish sound platforms for the exchange of ideas and dissemination of innovations. This, I believe, is the lynchpin that will push the frontiers of science and technology in particular, and our world in general.***

***The conduct of the 3<sup>rd</sup> International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR-20) spearheaded by the Institute for Engineering Research and Publication (IFERP) is an important undertaking towards this development trajectory. It offers a broad purview of topics in science and technology, engineering, and other areas of specialization.***

***I take, therefore, the distinct honor for being part of this scholarly endeavor. This comes with a message of encouragement for future researchers and scholars to continue the pursuit of knowledge and innovation. From where I stand, studies in disaster risk management, computer networks, as well as in Mathematics, and Social Sciences, all serve to benefit developing countries in their mission to end poverty, hunger, and a host of other issues.***

***Congratulations for being a part of this noble undertaking and see you in our future scientific endeavors***

**DR. ANDRES C. PAGATPATAN, JR.**  
***Campus Administrator***  
***Eastern Samar State University Guiuan Campus***



***Prof. Jake R. Pomperada***

***MAED-IT, MIT, Science Research Specialist II***

***Technological University of the Philippines Visayas***

***City of Talisay, Negros Occidental Philippines***

**Message:**

***I am really honored to be part of this “3<sup>rd</sup> International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR-20)” organized by Institute for Engineering Research and Publication (IFERP).***

***Today we can not imagine life without research and it has become an integral part of our life. Such conference gives opportunity to bring those ideas on the table.***

***My message to all participants is to carry out more research and development in the area of engineering and technology which is very important in the progress of our society.***

***I would like to extend my thanks to all participants who have joined ICRTMDR-20 and may this be one of the many fruitful exploits we engage into to further research and development.***

## **Guest of Honour**



**Dr. V. Shyamala Susan**

**Head & Assistant Professor**

**Department Of Computer Science**

**A.P.C Mahalaxmi College For Women,**

**Thoothukudi, Tamil Nadu**

**India**

### **Message:**

This is the day the LORD has made – PS 118:24

This is with pride and rectitude to be part of this magnificent and dynamic Research Group of international researchers and innovators whose interest is to provide not only innovative projects that surely help the people in the world to live in a comfort life but of course WITH environmental CONCERNS.

I also specially thank my colleagues and also the coordinator for their continuous support and tireless effort for successfully organizing this program. I am sure that IFERP will continue to get generous support from various organizations in future also. My heartfelt thanks to all the distinguished participants who have come from distant places to attend the conference. I earnestly request all the participants to make use of this wonderful opportunity and to derive the maximum benefits.

Such a great conference event is the culmination of the ideas contributed by many individuals.

“When you identify yourself with a cause larger than yourself, the energy and competence that are required for the fulfilment of the cause comes seeking you”

Once again, I welcome one and all to ICRTMDR – 2020



## **Session Chairs**



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# ICRTMDR-2020

## 3<sup>rd</sup> International Conference on Recent Trends in Multi-Disciplinary Research

Maldives

26<sup>th</sup>-27<sup>th</sup> December, 2020

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**ICRTMDR-20**

**3<sup>th</sup> International Conference on  
Recent Trends in Multi-Disciplinary  
Research**

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**ABSTRACTS**

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**ICRTMDR- 2020**

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# Big Data Analytics for Telco Using Open Source Data Pipeline Architecture: Results of SLR and Architecture Recommendation

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## ***Abstract:--***

This research paper focuses on some of the important big data analytics architectures (BDA) for telecommunication sectors. Telecom companies handle a huge volume of data (terabytes to petabytes) on daily basis and there is a need to filter meaningful data from this bulk data. There are multiple advancements in recent years which are helpful in deriving these meaningful insights. As a part of our research work, we have initially conducted a SLR and have filtered 36 articles which were later categorized based on use cases, frameworks, white papers, and experimental results. We have identified the research gap exists as there are no papers focusing on high-level cloud-native opensource computing platforms like Kubernetes for Telco data analytics. We recommend a full-fledged, real-time, cloud-native, and distributed data pipeline architecture using opensource components like Apache Kafka, Kubernetes computes and so on. Our open source and modular data pipeline architecture is completely based on open source big data analytics components using a public cloud infrastructure like AWS and Kubernetes pods. Though there are resources that separately talks about Kubernetes for resource management and data pipeline architecture using Apache Kafka, integrating both is of great value and need of the hour which our proposed architecture can deliver.

## ***Index Terms***

Big data analytics, Open Source technologies, Telecommunication sector, Kubernetes, BDA

# A study on the impact of cultural dimensions towards the cultural competency of transnational project environment in the Maldives

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## ***Abstract:--***

The Maldives is a country highly dependent on international clients towards development of the nation, through major infrastructural and institutional projects. Majority of the projects handled in the Maldives are international donor-funded projects or international projects by private organisations.

This research focuses on the cross-cultural impact on the transnational projects established in the Maldives, in regards to Hofstede's Cultural Dimension Theory. This research studies the opinions and insight of experts such as shareholders and project managers, on the cross-cultural impact using qualitative data. It becomes evident that these projects are competent towards the transnational project environment. However, it is also established that there are dimensions of culture that projects must utilize to improve the project environment.

A total of four major themes and fifteen sub themes were discovered in this study. It can be determined that the overall project environment has a very positive contribution towards the cultural competencies. The project culture of Maldives encourages long term orientation, High Uncertainty Avoidance as well as Collectivism. On the other hand, Maldives require cultural balance towards low power distribution, influence of politics and gender role distribution in the project environment.

# A Study on the Influence of After Sales Service Quality on the Buying Preferences of the Members of Network Marketing Companies.

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## ***Abstract:--***

Service quality plays an important role in the sales of products. The quality of after sales service is one of the factors influencing the buying decisions of the customers. Poor service quality may result in the customer reluctance to purchase products. The situation is not very different in case of network marketing also known as multi-level marketing. The after sales service quality of network marketing companies impact can be an important factor in shaping the buying decision of the members (Independent Business Owners - IBOs). Therefore, it becomes essential to find out the extent of influence of after sales service quality over the buying decisions of the members. This research study tries to identify the level of influence of after sales service quality on the preferences of members of network marketing companies.

## ***Keywords:***

Service Quality, Network Marketing, Multi-Level Marketing, IBOs

# Healing Effect of Hydroalcoholic Extract from MorindaCitrifolia (Peruvian Noni) in Periodontal Incisions

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## ***Abstract:--***

Periodontal treatments involve gingival mucosal cuts and bleeding; therefore, this study aimed to investigate the potential of hydroalcoholic extract in the regenerative processes of periodontal incisions at 70% in different concentrations (1%; 5%, and 10%) of MorindaCitrifolia (Peruvian Noni) and their coadjuvant accelerating effect in the healing of oral tissues. Previous studies have been conducted for solubility testing, phytochemical, pharmacological, and histopathological analysis. Doses were administered twice a day in groups of five rats at different concentrations in quantities of 0.5 ml in the incision, which were evaluated for seven days by observing specific parameters such as a) infection, b) skin tone gingiva, c) closure of the wound, d) reduction in the size of the incision, e) percentage of healing for histopathological analysis. The results showed that the healing activity was improved by reducing the size of the incision in the gum on the seventh day in all the groups that were administered the 70% hydroalcoholic extract at its various concentrations, resulting in better concentrations of 5% compared to other concentrations (1% and 10%). This is the first study that demonstrates the effectiveness of Peruvian MorindaCitrifolia due to its accelerating response in improving healing process in periodontal therapies.

# Digital Payment Adoption during Pandemic in India: An empirical analysis using SEM

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## ***Abstract:--***

**Purpose** – This study aims to investigate the actual usage (AU) of digital payment systems by the consumers during the period of Pandemic in India.

**Design/methodology/approach** – The conceptual framework for this study is based on the unified theory of acceptance and use of technology (UTAUT 2) and innovation resistance theory. A total of 766 sample respondents were surveyed using a pre-tested questionnaire. The empirical validation of the framework and analysis was done using partial least squares (PLS)-structural equation modeling (SEM) technique.

**Findings** – The results suggest that the behavioral intention (BI) to use and innovation resistance (IR) affect the usage of digital payment systems. The relation between BI to use digital payment systems and the AU of digital payment systems is moderated by the stickiness to cash payments.

**Research limitations/implications** – This cross-sectional study is limited by geographic constraints and highlights the AU of digital payment systems by using the UTAUT 2 and IR theory only during the demonetization period.

**Practical implications** – This study offers valuable insights to the economists, policymakers and digital payment service providers regarding the usage of digital payment systems by consumers during pandemic.

**Originality/value** – This study assumes importance as it empirically examines the influence of BI and IR on the AU of digital payment systems during the pandemic period in India. This study empirically validates the moderating influence of stickiness to cash payments on the AU of digital payment systems

## ***Keywords:***

PLS-SEM, COVID-19, Innovation Resistance, UTAUT-2, Behavioral Intentions



## Critical determinants for mobile commerce adoption by Indian micro enterprises through SEM analysis

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### ***Abstract:--***

This paper investigates the critical determinants of mobile commerce (m-commerce) adoption in micro enterprises in India. A comprehensive review of the related literature leads to the development of a conceptual framework to better understand m-commerce adoption in organizations. This framework is then tested and validated using structural equation modelling on the data collected from 513 Micro enterprises. The study shows that perceived benefits, perceived compatibility, perceived security, organizational readiness, organizational innovativeness, customer pressures, government support, and managers' IT knowledge are the critical determinants of m-commerce adoption. This study contributes to a better understanding of m-commerce adoption in developing countries, particularly in India. It can facilitate the development of m-commerce in micro enterprises by providing evidence-based strategies and policies.

### ***Keywords:***

Critical Determinants, Mobile Commerce, Micro Enterprise, India

## MSME Financing Gaps – A Review of Literature for the Period 1960 To 2020

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### ***Abstract:--***

Micro, small and medium enterprises have been an area of great interest for many researchers. As per reports, credit is a crucial input for promoting growth of the MSME Sector. The review aims to find out the role of MSMEs in development, major hindrances to MSME growth and what influences such hindrance. MSMEs have been revolutionary in development of economies, especially in developing countries. The study has further found financial constraints as a major hindrance to MSME growth. MSMEs find it difficult to obtain credit from formal sector, and banks find it difficult to give credit to the sector. However, formal lending sources are indispensable to MSME development. Reliance on informal sector is not a healthy option for the small sector. The important factors that influence lending towards MSMEs are competitiveness, legal framework, credit policies and lack of information about SME borrowers, firm characteristics and firm size. Various schemes have been introduced over time directed at MSME development which have uplifted the sector but remains ineffective in many areas. Also, very limited studies have been found on unregistered and informal MSMEs as well as government funded organizations dealing with MSME financing.

### ***Index Terms***

MSME, MSME Financing, Bank Financing, MSME Review.

## MSME Sector: A Multifaceted Model to Achieve Prosperity

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### ***Abstract:--***

The current enthusiasm for the entrepreneurship culture results in mushrooming of self-employment activities. Self-employment also supports the growth of micro, small, and medium-sized enterprises (MSMEs). Of course, MSMEs have various economic benefits, and India is riding upon the performance of MSMEs to become self-reliant. But still, MSMEs should not be perceived in isolation for the economic benefits only. Rather, other socio-economic perspectives of MSMEs should also get equal consideration. Thus, this paper descriptive in nature attempts to record other socio-economic benefits. For this paper, various government reports and other related literature have been consulted. MSMEs have an impressive track record in contribution to GDP, employment generation, reducing social inequalities, women empowerment, and balanced geographical growth. The study concludes that the role of MSMEs in the development of India is crucial, yet there are many roadblocks that need state intervention through an appropriate policy framework. Some of the roadblocks in the progress of the MSME sector are difficulty in availing credit facility, lack of marketing avenues, inefficient productivity, operation of scale, frequent obsolescence of technology, inadequate infrastructure, and institutional framework. The paper also highlights the role of professionals in facilitating the smooth functioning and growth of the MSME sector.

### ***Index Terms***

Entrepreneurship, Economic Development, Employment, GDP, MSME, India

# Non-Dimensional Numbers Analysis of a Natural Convection Grain Dryer with and Without Sensible Energy Storage

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## ***Abstract:--***

In the present work, non-dimensional number analysis has been performed for the outer surface of the rectangular chamber (brick wall) in a natural convection grain dryer. For the study, biomass is burnt for three hours at a rate of 1.6 kg/h in the conical furnace. The study has been performed for two cases; (i) without sensible heat storage medium (pebbles), and (ii) with sensible heat storage medium in the rectangular chamber. In the present study, Grashof number ( $Gr$ ), Rayleigh number ( $Ra$ ), and Nusselt number ( $Nu$ ) have been evaluated. The value of Grashof number and Rayleigh number was obtained in the range of  $2.59 \times 10^8$ - $9.56 \times 10^9$  and  $1.9 \times 10^8$ - $7.84 \times 10^9$  for the case-I and  $1.48 \times 10^9$ - $579 \times 10^9$  and  $1.08 \times 10^9$ - $4.23 \times 10^9$  for case-II, respectively. The value of Nusselt numbers was obtained in the range of 85.6-284.23 and 152.99-240.8 for the cases-(I&II), respectively.

## ***Index Terms***

Natural convection, Grashof number, Rayleigh number, Nusselt number.

# Digitising English for Engineers: Innovations in Learning technologies in ELT

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## ***Abstract:--***

English language engineering students have been at the verge of modern technology-driven paths for quite some time now. Now that since everybody knows that English monopoly is the factor which plays a significant role in digitally assisted learning, English learners have a significant target to accomplish at their hands. The learners, who belong to technical streams like Engineering, grapple with multiple communicative skills concerns. These undergraduates, who study Professional English nowadays, are introduced to facets in a curriculum that adapts a much more learner-centric attitude with the modern age digital technology. Software-based learning has proved to be very useful in terms of personal contact and self-help, as well as offering descriptive and real-time knowledge. Some technology aided learning tools often help burgeoning engineers interact better. The internet is, of course, a strong tool that affects the language learner in a positive way, yet the instructor is irreplaceable. Nowadays, Industry 4.0 is a development in industrial transformation and digitalization. Industry 4.0's impacts and significance represent many facets of our lives. This study attempts to examine literatures based on an exploratory analysis approach basis the above mentioned factors.

Engineering students still face a shortage of digital community, instruction manuals, authentic information and language needs when applying digitally assisted activities to their learning. The study evaluates Digital Language, Learners' needs and Industry 4.0 literature from different platforms. Surprisingly, the findings reveal that the study conducted in these domains are so narrow, concentrating only on one of the earlier threads in the above mentioned regions; although, some study papers were found describing the interrelationships between these regions. Therefore, the report suggests that addressing the differences and performing experiments in these fields will be helpful in addressing some of the engineering students' problems and proposes that researchers undertake potential studies focused on Modern English Language interconnections with the evolving industry trends and education.

## ***Keywords:***

Digital English, Digital Learning, Engineering, Industry 4.0, Internet of Things (IoT)

## Integrating Applied Ethics with its Bio-Ethical Issues and life in the Womb

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### ***Abstract:--***

Morality is concerned with beliefs and actions which are in conformity with the social norms shaped and modified over a length of time. The belief about what is right and what is wrong, what ought to be done and what not to be done is generally defined as moral belief. Thus, morality is like a stage in the life process of human beings from its primitive to the present stage. But, in this age of globalization all human beings with their rapid developments feel insecure in every spheres of life. The problems of bio-ethical issues like Abortion, Euthanasia etc are special issues in the present day. They are the problems of human beings in every moments of our life. Thus, in applied ethics ethical principles are needed where it can solve practical moral problems.

Thus, the present paper focuses three major points--- Firstly, it discusses about applied ethics and bio-ethics. Secondly, the problems of bio-ethical issues like abortion have been taken in discussion and Right to life and life in the womb.

Thirdly, utilitarianism and Gita's view on abortion is given.

### ***Index Terms***

morality, bio-ethical, applied-ethics, abortion, utilitarianism.

# Netnographic Analysis: Understanding Cyberpsychology in Adolescence through Social Media Posts

**Dr.Pallavi Mishra**, Associate Professor, Amity School of Communication, Amity University.

## ***Abstract:--***

Social Media is a dynamic technology of electronic pages that is ubiquitous, instantaneous, and interactive, but its rise has delivered a host of conundrums as well. Adolescence is an indispensable stage of life characterized by social and psychological changes between childhood and adulthood in both male and female. The advent of social media has proffered an online arena for social behaviors such as self-presentation and social comparison. The cyberpsychology of adolescents can be traced through their posts on social networking sites. Technology has fundamentally changed the way adolescents think and behave. The psychology of social comparison is explicit on social media platforms with the idea of making an inimitable identity in the peer group. Social comparison and self-representation refer to the behavior of an individual on online media driven by the posts of peer circle or social media friends. An exploratory research is conducted to comprehend how social media has an impact on the psychology of adolescents and they compare themselves with the people of their circle. This study will substantiate how adolescents relate to each other and the world around them, as well as how they perceive and construct their sense of communication. It argues that the effect of the posts, LIKES on Facebook is eventually more impactful feature of self-presentation and Social comparison. The contemporary trend is an attempt of the self-representation which has an adverse effect on the psychology of adolescence. This paper studies cyberpsychology behavior on social networks. The study addresses the psychological concerns of technology mediated self-presentation and social comparison. This study uses Netnographic analysis of the content posted on social media platforms to comprehend how adolescents get into the process of self-comparison influenced by the posts across a spectrum of social networking sites. Netnographic Analysis will study a set of data related to posts shared on social platforms led to social comparison and its negative impact on the psychology of adolescents.

## ***Keywords:***

Cyberpsychology, Facebook, Adolescents, Behavioral psychology

# Identification of Carbonate Freshwater in Perak Island, KepulauanSeribu Using Ground Penetrating Radar Method

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## ***Abstract:--***

A research has been carried out to identify freshwater and its distribution in Perak Island, KepulauanSeribu using Ground-penetrating Radar (GPR) method. This research location is known for an isolated carbonate platform located on the equatorial belt. A freshwater well was found in the middle of Perak Island and used for daily needs for residents and tourists. Ground-penetrating radar (GPR) provided a promising approach to investigate the extent of the freshwater lens or aquifer volume, and to gain detailed information about the geological and hydrogeological features of the aquifer. It can give a high determination image of the dielectric properties of the features from a few tens of meters on the surface. This research purpose is to detect the presence of subsurface freshwater accumulation and the reservoir. By performing GPR measurements at a frequency of 100 MHz and stacking number 32 to increase signal to noise ratio, the subsurface results depict the depth of the well as far as 20 m, while the target is located at 2 - 5 m below the surface. Analyzing the results of data processing, it is clear that there is a fluid boundary contrast that indicates the presence of fresh-water. The result indicates the barrier zone for separating saline water and groundwater at depth of 2.5 – 3.75 m. The section result also describes the presence of vertical barriers formed by secondary fracture to prevent seawater intrusion to the reservoir.



## Application of Hermeneutics and Dimensional Analysis to Compare Marketing Reports

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### ***Abstract:--***

The purpose of this research is to compare marketing reports by applying: a) hermeneutics of textual data, b) dimensional analysis based on the application of the Vaschy-Buckingham  $\pi$  theorem, and c) mathematical analysis of the categorical-conceptual resulting structure and their corresponding equations. Brazilian and Chinese marketing reports for the 4th quarter of 2019 were analyzed under this analytical model. Hermeneutics analysis, such as collocation, term frequency, and correlation, along with the trend, ratio, and flow graphs, was used to identify nuclear and axial categories, showing the following relevant categories for Brazil: Investment, Airport, Brazil, Hotel, Infrastructure, Major, Concession, Block, Sector, Believe, Growth, Cities, Events, Likely, Sporting, and Government; it also yielded the following categories for China: Domestic, Hotel, China, International, Market, International, Tourism, Groups, IHG, Extensive, Airport, Major, and Developed. Categories turned into variables; then, a conceptual analysis allowed the proper definition of a structure with fundamental and derived variables that entered the dimensional equations for the Vaschy-Buckingham  $\pi$  theorem. Then, solving the resulting equation systems gave a mathematical representation of variable relationships for each marketing report. Conclusions showed that both Brazilian and Chinese marketing focuses on value creation, with China being also oriented to value communication in the marketing value chain.

## Various Classification and Prediction Techniques for Diabetic Retinopathy

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### ***Abstract:--***

Diabetic retinopathy is one of the leading reasons for preventing blindness in the world. The future of diabetic retinopathy is increasing globally day by day. The features selection and classifications are a vital task to find the seriousness of the diabetic retinopathy. The different researches have introduced different techniques to extract the features and classification of diabetic retinopathy images. The different techniques are used to screening, decision making and future prediction of Diabetic retinopathy. The main comparison parameters of Diabetic retinopathy prediction are accuracy, sensitivity and specificity. This paper presents various techniques related to the features, classifications and predictions using artificial intelligence, machine learning and Deep learning. The entire paper consists of various classification techniques, advantages, limitation and various comparison parameters. Finally, various challenges and future direction of the Diabetic retinopathy is presented.

### ***Keywords:***

Diabetic Retinopathy – various techniques- Artificial Intelligence – Machine Learning and Deep learning.

# Effect of Essential Oil of Santalum Album against Covid-19, Lung Cancer and Streptococcal Pneumonia: An Insilico Approach

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## **Abstract:--**

The respiratory tract diseases are the leading cause of death worldwide. Considering the disease related to the lower respiratory tract infections the mortality rate of lung cancer is 1.6 million every year worldwide. The COVID-19 which is regarded as global pandemic has killed 1.34 million globally. Until 2017 about 2.56 million people had died due to bacterial pneumonia, therefore, targeting these diseases, the present work aims to explore the potential of 35 bioactive compounds and essential oils from *Santalum album* against the SARS CoV-2 spike protein (PDB Id: 7KJ3), asbestos carcinogenesis responsible human c-Met Kinase (PDB Id: 2WD1), *Streptococcus pneumoniae* pneumolysin toxin (PDB Id: 5AOF) as drug targets through *in-silico* molecular docking using AutoDock 4.2. Sixteen compounds were shortlisted for molecular docking after screening through Lipinski's rule of oral drug likeliness. The following compounds  $\alpha$  – Bergamotenol and cis - Lanceol showed the lowest binding energy of -8.170 and -8.164 kcal/mol out of 16 compounds tested against the SARS CoV-2 spike protein, Cis - Lanceol (-9.341 kcal/mol) and cis-  $\alpha$  – Santalol (-9.060 kcal/mol) were effective against the human c-Met Kinase, and dodecane (-7.186 kcal/mol) and epi- $\beta$ -santalene (-6.914 kcal/mol) showed the highest potential against the *S. pneumoniae* pneumolysin toxin. The pharmacokinetic and toxicity properties of these compounds were predicted. Thus, these bioactive compounds can further be investigated under *in-vitro* and *in-vivo* clinical trials to be used as potential drug candidates.

## **Keywords—**

*Santalum album*, AutoDock 4.2, SARS CoV-2, asbestos carcinogenesis, *S. pneumoniae*, pneumolysin

# Analysis and Apply Thai Khon Costume Pattern into High-End Fashion Design

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## ***Abstract:--***

Thai Khon is the Intangible culture heritage of Thailand, is a traditional court drama that has a significant impact on the history of Thai literature and art. Thai Khon is a performance and cultural art that has been passed down from Thailand since the Ayutthaya dynasty. It integrates culture, art, and ritual. Thai Khon is not only drama arts, It also shows traditional Thai customs and historical culture. All aspects of Thai culture are infiltrated in Thai Khon. It is full of Thai cultural contents and character, and it is demonstrating own unique style as well. The existing studies show that the design forms of the color and pattern of Thai Khon costume still uses the original design inspiration, traditional Thai patterns, and primary colors, such as red, green, yellow. If apply these colors and patterns into high-end fashion design makes the costumes very eye-catching. In this research, the researcher collected and analyzed patterns of Thai Khon costume, and did information analysis by qualitative research method. Analyzing the pattern and the culture of Thai Khon costume through taxonomies and classifications. The purposes of this research are: classify Thai Khon costume patterns, explain their cultural connotations and apply into fashion design. This study can help the audiences to understand the Thai Khon costume patterns and Thai.

## ***Index Terms –***

High-end fashion design, Modern Succession, Pattern, Thai Intangible Cultural Heritage, Thai Khon

## Research Topic Detection Using a TV-tree Based System

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### ***Abstract:--***

There is a tremendous growth in scientific research, thereby resulting in a huge number of research articles being published. Most of these articles are available online and are accessed using various search engines and online repositories. Selecting the appropriate search keywords facilitates an efficient search from this pool of articles. Naive researchers find it difficult to choose such keywords and are unable to identify articles relevant to their topics of interest. This paper proposes a tree-based approach to detect research topics from a set of research articles. This enables naive researchers to choose appropriate keywords and to identify articles relevant to their topics of interest and in turn pick the trendiest topic for their research. The topic detection system proposed herein is experimented with articles in computational geometry, a branch of computer science that deals with study of algorithms. Experimental results reveal that the top influential research topics in the area of computational geometry are detected efficiently by means of the proposed topic detection system.

### ***Keywords-***

Topic detection; Trend analysis; Data Mining; Information retrieval; knowledge discovery; TV-tree; Computational Geometry

# Contamination Level on Insulators of Cambodia High Voltage Transmission line

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**Zhijun Qin**, School of Electrical Engineering, Guangxi University, China

## ***Abstract:--***

Insulator is an important component in the operation of power system because it might cause flashovers and so excessive outages under awful weather condition. Under the environment along with weather condition produces flashover on contaminated insulators as a result to interrupt in a power system. Accordingly, determining pollution severity is an important facet of the procedure behind improved insulator selection, installation, and maintenance. The contamination level has been carried out by an equivalent salt deposition density (ESDD) experiment. The collected data from the site measurements were used to investigate the contamination level. This study has used multiple regression to build ESDD with different weather condition variables such like rainfall, temperature, pressure, humidity as well as wind speed for predicting contamination levels on high voltage insulator surfaces. The multiple regression predicted values have been compared with the measurement values. The results are effective to reveal the contamination level that occurred on the insulator surface high voltage insulator in Cambodia.

## ***Index Terms***

ESDD, insulators, high voltage, contamination, multiple regression.

# A Survey on Microwave Planar Filter Design using Metamaterial Properties – Research Design & Development

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**Dr A. K. Sarvaiya**, Government Engineering College, Bhavnagar

## ***Abstract:--***

In this review Paper discussed different designing method for microwave planer filter using Metamaterial properties. Microwave Filters are one of the fundamental microwave passive components used to pass the required frequency and reject the unwanted frequency as per required Band. Metamaterial is an artificial material, that have controllability of their electric characteristics and possibility to get multi band response with compact size. There are many types of metamaterial filters but in this paper review only design regarding Microstrip transmission line loaded with different planar subwavelength resonator. In this paper compare and discuss the different shapes of resonator for microwave transmission line loaded with SRR (Split ring resonator), CSRR (complementary split ring resonator), HSRR (Hexagonal split ring resonator), HMC (Hexagonal Meta cell). A Metamaterial transmission line using left/right hand properties are mostly used for design compact microwave filter with improved electrical parameters performance, compact size. The main aim of this paper is to reviewed the work and find the analysis of different last few years paper for single, double or multi frequency response Metamaterial based microwave filter and list its advantages and proposed future development in this field.

## ***Keywords:***

Metamaterial, Microwave filter, SRR, CSRR, HSRR.

# Impact of COVID-19 Pandemic and India-China Aggression on Indian Renewable Energy Grid: A Pragmatic Analysis

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**Dr. H. Ravishankar Kamath**, Manipal University Jaipur

## ***Abstract:--***

In early December 2019, an outbreak of coronavirus disease caused by a (SARS-CoV-2) occurred in Wuhan City of Hubei Province in China. On 30 January 2020, the World Health Organization declared the outbreak as a Public Health Emergency of International Concern. India charts as the second-largest population in the world. The country has a rural-based growing towards-urbanization developing economy is also struggling severely from this COVID-19 direct and indirect effects. Amidst, the Indian Government response in dealing with the Pandemic on 15/16 June news reports of a standoff between Indian and Chinese Forces at Galwan Valley near the Indo-China Border started emerging. This run-in claimed the lives of 20 Indian soldiers and 43 Chinese soldiers. The skirmish resulted in India taking numerous steps that reinforced new rules and trade-sanctions. On 27 June, The Prime Minister of India, Shri Narendra Modi emphasized citizens of India to become a self-reliant nation with the slogan 'Vocal to Local'. This paper sketches how the onset of the Covid-19 Pandemic and the conflict between India-China impacted the 'Indian Renewable Energy Sector'.



## The Important Skills to Make Reading Purpose Oriented

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### ***Abstract:--***

Reading is not only one of the most important skills in language teaching, but also one of the main objectives of learning English in general. Many factors such as students' background knowledge, motivation, interest, organization of the texts and study skills may affect reading skill. The purpose of this study was to investigate whether teaching study skills would increase students' reading comprehension ability or not. To achieve this goal an experiment was carried out at Anna University College of Engineering, Ramanathapuram, Tamilnadu, India during the second semester of 2016-2017. The results of the study supported the argument that skills in reading depend on the precise coordination of a number of special reading skills and there is a significant relationship between the knowledge of study skills and reading comprehension.

### ***Keywords***

Reading, Knowledge, Motivation, Study Skills, Precise, Coordination, Special reading skills.

## Pre-Service Teachers' Competency, Attitude towards the Teaching Profession and ICT-Based Instruction

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### ***Abstract:--***

This study answered the inquiry if the pre-service teachers of the State Universities and Colleges of Region XII, Philippines are ready in facing the ASEAN 2015 and globalization challenges and opportunities brought about by their chosen profession, based on the Teaching Competency Standards of Southeast Asia and their attitudes on teaching profession and ICT-based instruction.

The study revealed that Pre-service Teachers have high positive attitude towards teaching profession and ICT-Based instruction and their Competency level is Outstanding. The positive attitude towards the teaching profession will help beat up the challenges for the educational reforms. Given the chance, the Pre-service teachers will use ICT-based instruction in the classroom. They can compete in terms of Teaching Competency Standards in Southeast Asia. They can cope up with the demands of the educational system and they can perform their duties and responsibilities with confidence and successfully. The study also revealed that Pre-service teachers' attitude towards teaching profession is significantly related to the teaching competency. This significant relationship implies that when the attitude of pre-service teachers towards teaching profession become high, their skills will likewise become high. The more they will like teaching and love their profession, the more they will be competent. However, the Pre-service teachers' attitude towards ICT-based instruction is not significantly related to the teaching competency.

It is recommended that TEIs and DepEd should have annual Values Reorientation for Pre-service and In-service teachers to keep their passion in teaching growing; have regular seminar-workshop on ICT-based instruction, pedagogical skills, learners' assessment skills, classroom management and professional development skills of the teachers.

# The Effect of the Wall Assembly Positions of Different Density Levels of Polystyrene Insulation on Its Dynamic Thermal Conductivity

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## ***Abstract:--***

The current study is illustrating the effect of different positions of the thermal conductivity of the expanded polystyrene (EPS) with different density integrated in a typical wall building section applying variable thermal conductivity ( $\lambda$ -value) of the insulation. The numerical heat transfer model is experimentally validated in extremely hot conditions of Al Ain (UAE). The evolution of temperatures during the day through the wall section was observed at the inner wall surface when the EPS is located at different positions of the wall. The results revealed that, the temperature on the inner wall surface decreases as the position of the insulation material is toward the inner wall surface due to the change of  $\lambda$ -value. The optimum position of the insulation material was assessed by calculating the temperature drop on the inner wall surface. The result concludes that the SHD of EPS located in the middle the wall assembly is the optimal configuration.

## ***Key Words–***

Polystyrene, Dynamic Thermal Conductivity, Different Wall Position, Density Level.

## Developmental reporting on rural infrastructure: Study of Birbhum District in West Bengal

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**Prof.(Dr.) BiplabLohoChoudhury**, Center For Journalism & Mass Communication, Visva - Bharati, Santiniketan, West Bengal, India& Country Director (India), Asian Congress for Media & Communication (ACMC)

### ***Abstract:--***

Creating societal awareness about development issues, functioning as a monitoring mechanism about the way development projects are being implemented, understanding precise requirements of local population and acting as an information channel for government and local administration are some of the positive contributions of development journalism, immensely valuable to national life and process of policy making. Within this context, this study undertook to examine the level and effectiveness of rural development reporting in the district of Birbhum. Development oriented reports, related to infrastructure of four leading Bengali dailies were selected for this study. Development value of generated reports was found low across all four publications. Rural development reports, published in prominent Bengali dailies, will be reviewed and compared to evaluate the qualitative level of representation of reality in its true elements. This will enable determination of whether rural development reporting at the district level is contributing to progress or not. The study is to assess infrastructural developmental issues and initiatives which exist in the study area and also to comprehend the quality of media reports in terms of their news value and developmental value. This information set will aid the researcher in understanding local issues that people are battling daily, which subsequently will aid in assessing as to how such issues are being projected in media report.

## Is the Indian Stock Market Efficient: A case of Weak-Form of Efficiency

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### ***Abstract:--***

The purpose of this paper is to test the weak-form market efficiency in the Indian Capital market, National Stock Exchange, which is expected to follow a random walk according to experts. Daily closing prices in NSE between January 2010 till October 2020 are collected. Dickey-Fuller test, Pearson correlation test and run test are used to test for the non-stationarity of the daily prices for all the listed companies in the market. These tests confirmed the weak-form market efficiency in the Indian capital market. This study will be beneficial for the investors, scholars, experts to see the clear picture of the market and gives justification to those who advocates the existence of weak-form of market efficiency. Further this test can become the basis for testing the market efficiency in the case of semi-strong and strong-form. Thus, this paper add value to the literature of capital market efficiency.

## Nonstandard Solutions for Ordinary Differential Equations near Singularity

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### ***Abstract:--***

Throughout this paper, by using some nonstandard concepts, we try to find the nonstandard analytic solution for the first order differential equation near to singularity where the differential coefficients are infinitesimals, unlimited or having irreducible differential form. Sometimes, in the monad of singular point, as the most important features where the singularities are not too wide. Focusing on the properties of infinitesimal parameters related to such singular points in its monad lead us to know more features and in to some cases according to the type of the coefficients. The obtained results, with nonstandard quantities, are more precise and more closer to its possible real behavior.

### ***Index Terms:-***

Nonstandard Analysis, Singularity, Ordinary Differential Equation, S-Continuity.

# Dynamic Load Analysis of Side Underrun Protection Device (SUPD) For Heavy Commercial Vehicles with Weight Optimization Using FEA

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**Dr. Neeraj Kumar**, Associate prof., Suresh GyanVihar University, Jaipur, Rajasthan

## ***Abstract:--***

SUPD is the essential safety device for the safety of smaller passenger vehicle in cases of rear collision. The purpose of SUPD is to avoid the under-run cases from side impact and to absorb maximum of the impact energy resulting lower fatality. This study is focused in Development of Methodology to Assess the Safety Features of Commercial Vehicles during Side Impact of Passenger Vehicle using Finite Element Analysis with Weight Optimization. In India, IS-14682-2004 decides the acceptable criteria for the SUPD of heavy commercial vehicle. In this paper, the optimised design of SUPD is proposed using the FEA analysis of the device according to the government test setup. Then using the LS DYNA software the proposed design was used to reconstruct the accident scenario with a bicycle impacting the SUPD at a velocity of 11kmph. Several design iterations in the SUPD design were made to prevent the severe occupant injury in case of side collision of a bicycle with the SUPD and to find the optimised design in terms of weight and strength. The output results were displacement by SUPD. The results were examined against the regulations of IS14682-2004 in a process to maximising the safety of rider. So a methodology was developed to the assess the safety features of the commercial vehicle at the time of side collision using the FEA method and saving money and time by avoiding the prototyping for every design iteration test.

## ***Keywords: -***

FEA, Heavy Commercial vehicles, optimization, SUPD, underrun etc.

## Review Paper on Gore, tumult, and potentialities of peace: A description of the political history of conflict- ridden relations between the dominions of India and Pakistan

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**Dr. JhaninMushahary**, Assistant Professor, Department of Political Science, Bodoland University

### ***Abstract:--***

India and Pakistan have shared a journey that has experienced many traumatic moments over the years. From being a single country to separation in two different countries on the basis of religion, the citizens of both countries have suffered a lot. The present study aims at understanding the potentialities of peace if any, exist between the two nations. To accomplish this aim the study runs through the timeline and understands the events that have triggered rage in the minds of the people. The study concludes that the only way for peace among the two nations is building a sense of trust and cooperation. The impact of the previous events is too difficult for peace to occur.

### ***Keywords:***

Indo-Pak relationship, Indo- Pak War, Kargil war, Kashmir, Violence, Bloodshed.



# Numerical Method for Analysis of Interaction between Railway Track and Structure under a Moving Load

**Mohammed TOUATI**, Mohammed 5 University Rabat  
**Nouzha LAMDOUAR**, Mohammed 5 University Rabat

## ***Abstract:--***

The aim of this paper is to assess the phenomenon of track-structure interaction in railway domain by presenting the numerical methods used in that purpose. In fact, the influence of temperature variations between Continuously Welded Rail (CWR) and bridge spans, the rail displacements (extension and contraction) at the edges of a span subjected to vertical loads, and the impact of train acceleration/braking action are mainly introduced and discussed. Therefore, vehicle's running safety on structures is evaluated when it comes to satisfy rail stress criteria according to railway standards.

## ***Keywords:***

Track-bridge interaction, Railway track dynamics, Track dilatation device, Continuously welded rail, Railway bridge.

# A Comparative Study of Government and Private Secondary Schools in Imphal East District, Manipur

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## ***Abstract:--***

The current analysis directed to measure the influence of infrastructural accommodations on the academic achievement. This study uses the observation method. It has focuses toward the infrastructure facilities and relating student outcome. The infrastructure facilities are fully relation with student of higher qualities and change of the motivation. The public secondary schools sometime poor in infrastructural facilities and lower rate of outcome on another hand the private secondary schools are properly maintainer and good infrastructure facilities, proper arrangement. In Manipur context the public school facilities student motivation has decrease. While private secondary schools infrastructures are surficial for student than any competitive exam are higher achievements and job priorities for further life. The quality of student are depend of their building, classroom design, medical facilities, library, teaching aids, computer facilities, transportation facilities, class-size, density of student in class, colour of inside & outside, classroom temperature, number of windows in one class and fitting design, length and breadth of class, sport facilities, and student rest room. All facilities are compulsory for high qualities of student outcome.

## ***Keywords:***

structural facilities, public, private, and outcome.

## GAN based deep learning techniques in biomedical analysis: A Review

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**Resham Raj Shivwanshi**, National Institute of Technology, Raipur

**Dr. Saurabh Gupta**, National Institute of Technology, Raipur

**Dr. Neelamshobha Nirala**, National Institute of Technology, Raipur

### ***Abstract:--***

Computer-assisted medical image analysis has procured the elevated attention of researchers and academicians to set about challenges associated with profuse human diseases. Medical images are available nowadays in the form of a huge amount of data banks, which opens the opportunity to apply deep learning modality to obtain salient details in the form of reliable healthcare information. Deep learning technique, associated with the GAN (Generative adversarial network) provides additional amelioration to generate definitive outcomes. In biomedical application like bioinformatic, bioimaging specifically, for the biomedical imaging, which is full of high amount of noise and causes generation of erroneous outcomes during their inspection and a small amount of error may create the critical situation of life or death. To overcome this situation, Advanced neural network architecture and GAN are now providing assurance, which in turn provides better provision of healthcare. GAN based system comes under unsupervised learning-based technique that utilizes a discriminator and generator model to produce relevant outcomes for the analysis of training data, which is extremely useful in healthcare applications. This paper presents various applications of biomedical from GAN based models so that it is possible to come across new theories and further helps to design distinctive approaches.

## Inclusive Methods and Techniques for Teaching English to Dyslexic Learners

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**Dr. R. Rajesh**, Department of English Language Studies, Madurai Kamraj University, Tamil Nadu

### ***Abstract:--***

Learners identified with SLD (Specific Learning Disorder) or Learning Disability face problems in learning in a traditional classroom due to their specific learning needs and accommodation requirements. Lack of resources and awareness could also lead to negligence and academic failure of learners with special educational needs (SEN) resulting in higher dropout rates in schools and colleges.

The paper focusses on three main objectives- firstly, to theorize a suitable inclusive educational environment for all learners; secondly, to propose innovative approaches, methods and techniques to help SEN learner in overcoming academic challenges in learning English; and thirdly, to explore methods for creating a supportive environment that could help in reducing the drop-out rate/tendency of the SEN learner.

The authors propose management techniques to bring down the dropout rates of SEN students along with educational techniques which can be utilized to support and enrich the learning experience and environment of SEN learners. This can be achieved by bringing the best practices forward in inclusive education theories, language teaching and learning and building disability resilience groups for support and timely intervention whenever needed. Attitudinal change, learner centric approach, academic progressiveness and barrier free environment can be designed to serve as strong enablers for supporting both SEN and other learners.

### ***Key words:***

English teaching, Inclusive Learning, Dyslexia

## Strengthening Hope in context of Bhagavad Gita during COVID 19 crisis

**Prerna Tiwari**, Independent Researcher

***Abstract:--***

A positive psychological approach in the scenario of pandemic like COVID 19 is a strong call of the present time. Elevating positivity and motivation among individuals is the need of the hour. In this regard, positive psychology gives lot of emphasis upon focusing on the brighter side of human behaviour and also finding ways to enhance it. Hope is a well-known construct in this context, which is linked with improved physical health and better psychological well-being. In the ongoing challenge of coronavirus infection, hope can be strengthened by using the teachings of bhagavadgita.

Bhagavad Gita is a popular Hindu scripture which is a source of spiritual knowledge that covers variety of domains including yoga, karmic wisdom, nature of the soul etc. Knowledge and understanding of bhagwadgita on a regular basis can be used to elevate hope and curb anxiety, stress and hopelessness among individuals of any society.

The present paper theoretically highlights the importance of strengthening hope with regard to bhagavadgita, specifically in the current situation of COVID 19. It also give a basis for increasing intrinsically motivated experience among individuals that can enhance psychological and physical health.

***Key words:***

Hope, Bhagavad Gita, COVID 19, Coronavirus infection.

## Vermicompost Production using Rabbit (*Oryctologuscuniculus*) Manure

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**Honeylet J. Nicolas**, Associate Professor V, College of Agriculture, BASC, San Ildefonso, Bulacan

### ***Abstract:--***

This study aimed to use rabbit manure as a raw material in vermicomposting and to determine its nutrient content. It converted the manure collected from the BASC rabbit project into vermicompost and was able to produce 12 sacks of vermicast within two semesters. Based on the results of the nutrient analysis, vermicast from rabbit manure had 1.64% total nitrogen, 1.90% total phosphorus, 2.45% total potassium, 18.65% organic carbon, 32.07% organic matter, and 11:1 carbon-nitrogen ratio. Comparison with vermicompost from other animal manure (goat, carabao and cattle) using the same substrates in the College showed that rabbit manure had comparably higher nitrogen, phosphorus, potassium than goat, carabao, and cattle manure; and higher organic carbon and organic matter than carabao, and cattle manure; and lower carbon-nitrogen ratio compared with the three other animal manure.

## IoT security: Challenges and forthcoming trending foundation of Internet of Things

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**Dr.S.Mangayarkarasi**, Assistant Professor, Department of computer science VISTAS, Chennai

### ***Abstract:--***

The Internet of things (IoT) has as of late become a significant exploration point since it incorporates different sensors and objects to discuss straightforwardly with each other without human mediation. The necessities for the enormous scope arrangement of the IoT are quickly expanding with a significant security concern. This examination centers around the best in class IoT security dangers and weaknesses by leading a broad review of existing work in the region of IoT security. The point of this article is to give a wide diagram of the security hazards in the IoT area and to talk about some potential balances. To this end, after an overall prologue to security in the IoT area, we examine the particular security components embraced by the most well known IoT correspondence conventions. At that point, we report and dissect a portion of the assaults against genuine IoT gadgets revealed in the writing, to bring up the current security shortcomings of business IoT arrangements and comment the significance of thinking about security as an essential part in the plan of IoT frameworks. This investigation plans to fill in as a valuable manual of existing security dangers and weaknesses of the IoT heterogeneous climate and proposes potential answers for improving the IoT security. We finish up this article with a contemplated examination of the considered IoT innovations regarding a bunch of qualifying security credits, in particular respectability, namelessness, secrecy, protection, access control, validation, approval, versatility, self association and furthermore we achieving a view forthcoming moving foundation of IoT.

### ***Keywords:***

IoT, IoT Security Vulnerability, Trends of IoT,

# Length-Steepness Factor of RUSLE on the Soil Loss Rate Estimation: A Sensitivity Evaluation

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## ***Abstract:--***

The Revised Universal Soil Loss Equation (RUSLE) is commonly applied in research studies and industries, especially in erosion and sediment control measures. In RUSLE, six primary factors contribute to the estimation of soil loss rate. This study focuses on the sensitivity evaluation of Slope Length Factor (L-Factor) and Slope Steepness Factor (S-Factor) of RUSLE. A study site in Sarawak (1° 43' 4.27" N, 110° 19' 53.09" E) was identified for this study, whereby the actual site conditions were used as input values into RUSLE. For sensitivity evaluation, the L-Factor ranges from 100 m to 500 m with 20 m slope length increment and S-Factor from 1.0% to 40% with 1.0% slope steepness increment. Sensitivity evaluation was carried out for both L-Factor and S-Factor for determination of the degree of sensitivity with respect to soil loss. It was found that the sensitiveness of L-Factor ranges from -33.33% to 49.07% with soil loss rates ranging from 1,352 ton/ha/yr to 3,024 ton/ha/yr. It was also determined that the L-Factor has a positive linear relationship with other factors in RUSLE, i.e., erosion loss increases linearly with L-Factor. For S-Factor, significant incremental values were noticed on soil loss (8,421 ton/ha/yr) and the degree of sensitivity (315.14%) beyond slope steepness of 12% (6.84°). Detailed studies on the coefficient of L-Factor value (m) of S-Factor would require a more refined classification and annotation for different slope steepness.

## ***Keywords:***

Revised Universal Soil Loss Equation (RUSLE), Slope Length Factor (L-Factor), Slope Steepness Factor (S-Factor), Sensitivity Evaluation.



# The Effect of the Temperature Change on the Dynamic Heat Transfer through the Insulation Material at Different Wall Positions

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**MaatoukKhoukhi**, College of Engineering, United Arab Emirates University, 15551 Al Ain UAE

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## ***Abstract:--***

This paper studies the impact of the dynamic thermal conductivity ( $\lambda$ ) change of EPS insulation on the change of the temperature through a typical wall assembly at different positions of the insulation within the wall. The conjugate heat transfer model developed for this analysis has been validated with experimental measurement in extremely hot conditions of Al Ain (UAE). The evolution of temperatures during the day through the wall section was observed on the inner wall surface when EPS is located at different positions of wall section. The thermal performance across the wall section incorporating insulation layers at different positions applying variable  $\lambda$ -value was compared to a non-variable thermal conductivity case by quantifying the net heat reduction due to the  $\lambda$ -relationship with time. The results revealed that, the temperature profile through the wall assembly during daytime in case of applying variable  $\lambda$ -value of the insulation material is higher compared to that obtained when a constant  $\lambda$ -value for the polystyrene (EPS) insulation is adopted under the same conditions. The temperature change on the inner wall surface in case of applying the constant and variable  $\lambda$ -values is decreasing as the position of the insulation material located toward the inner wall surface. The optimum position of the insulation material was evaluated by calculating the net dynamic heat reduction on the inner wall surface. Three main aspects were used in the evaluation: the longer the time lag, the minimum the temperature change between variable and constant  $\lambda$ -value of the insulation material, and the higher the total temperature drop. The findings suggest that locating the insulation material in the middle of the wall assembly will provide the best dynamic thermal performance considering the change of the thermal conductivity of the insulation

## ***Keywords:***

Dynamic Thermal Change, Variable Thermal Conductivity, Insulation Material, Different Wall Positions.

## Social Development Elements for Special Needs Community: Taxonomy Conceptualisation from RisalahNur Perspectives

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### ***Abstract:--***

RisalahNur is a compilation series of thematic Quranic exegesis and it offered tone of positive elements for the benefit of society including social developments elements. This collection is important since it covered important topics that benefit the religious revival and societal wellbeing comprising the elements of social development that relates to the Special Needs community. Nevertheless, to the best of researcher's knowledge, there is no knowledge taxonomy ever built for the specific elements existed in RisalahNur whilst the taxonomy is essential to ease on the information access especially for the use of researchers and everyone at the authority level concomitantly as the platform for the Special Needs community support. This paper reports on the process of taxonomy conceptualisation of the social development elements for special needs community from the perspectives of RisalahNur. In developing a robust ontology, building a taxonomy hierarchy is always a time-consuming process. Its construction is based on the extraction of the main concepts and sub concepts from the RisalahNur with a close reference to the Malaysian National Policies. At this stage of the research, 43 segments of RisalahNur texts have been recognized as potential concepts to build the knowledge taxonomy hierarchy.

## Supercritical Fluid Extraction Research Laboratories- Hazard Identification and Assessment

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### ***Abstract:--***

Supercritical fluid extraction of planting herbs is extensively conducted in research laboratories by researchers including students. Materials, equipment and the people handling the experiments keep changing and new potential hazards are seen. In order to ensure a safe working environment, hazard identification and assessment need to be developed as part of the research activities. Therefore, a safety analysis on the most hazardous and potential equipment in supercritical fluid extraction of *Gynuraprocombens* as a case study was conducted. Qualitative and quantitative tools and analyses were applied for the determination of potential risk and the level of danger for the hazard identified. The most potentially hazardous equipment identified were carbon dioxide pump, carbon dioxide storage tank, co-solvent pump and extraction vessel. Fire & Explosion Index analysis on carbon dioxide storage tank and extraction vessel concluded that the level of danger is light and intermediate, respectively.

## Development as tool of India's Foreign Policy in South Asia: Critical Study of India-Bangladesh

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### ***Abstract:--***

This paper argues that India has used development as tool of Foreign Policy in South Asian region to have better relations with its neighbour for its economic interests, national security and interests, instead of focusing & bringing to the forefront the security issues it has with its immediate neighbourhood. This paper will focus and critically review the India-Bangladesh relations through considering development as a tool of foreign policy through Inkberry's proposition of Liberal hegemony. In this study we will examine and analyse the prevailing institutional mechanism between Indo-Bangladesh, which India used settle bilateral conflicts and it will observe the changing pattern of India's development assistant to Bangladesh. It will further see that how Bangladesh has reciprocated the development assistant through opening the lines of communications with India to resolve major foreign policy security and economic issues. This study will conclude by observing that whether development assistant as foreign policy tool has improved India's influence and reach in Bangladesh.

Ever since Bangladesh took shape politically after the short liberation war with Pakistan with the help of Indian forces and support, the bilateral relations between India and Bangladesh has remained as sinusoidal wave. After the demise of Rehman in 1975 the regime changed was visible in Bangladesh. The government in Bangladesh were Pro-Pakistani and their sentiments were against India's rise in the region. Though India never claimed to be hegemon in the region with its neighbours. The security issues of islands, border demarcation, migration, river water sharing remained as the priority issues on Bangladesh foreign policy. Indian government especially after 1995 instead of securitising the border, water sharing, and migration issues focussed more on development and investment as tools of foreign policy to have better bilateral ties with Bangladesh. This paper will analyse that how development assistance and investment as foreign policy tools has shaped the trajectory of India-Bangladesh relations and to have better perception with Bangladesh to resolve the pending issues with Bangladesh.

### ***Keywords:--***

South Asia, Foreign Policy, Development, National Interests.

## Review of Risk Analysis and Management Method in Power System Risk Assessment

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### ***Abstract:--***

From one generation to one generation of electric power getting to be increasingly complex and cleverly these days, the instability of components failure was expanded increasingly and challenged to the risk analysis and management method of the power system. The risk analysis and management method has played as an important key to power system risk assessment for nearly half a century. The paper concerns the review of risk analysis and management Method in Power System Risk Assessment. Based on statistical data from more than one thousand failures in the power system that affected the Electricity of Siem Reap utility's in the last five years. The analysis was carried out regarding the number of people affected by the power outage, failure causes, interruption duration. The paper also describes the risk impact numerical measure, risk analysis method used in the individual stage of risk analysis. This paper aims to uncover the risk analysis and management methods to researchers and engineers used.

### ***Keywords:***

Monte Carlo Simulation (MCS), Logical Models Bayesian networks (LMBN), Absolute Probability Judgment (APJ), Delphi Method (DM).

## Study of Change in buying behavior of FMCG products Post Covid-19 pandemic in India

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### ***Abstract:--***

No one in the world is left out of the category of Consumer. Knowing who your potential customer is great but knowing how they behave is even better. A consumer buys a variety of goods and services to satisfy his or her needs and wants and they remain influential in their purchasing activities with certain perceptions that lead them to choose a particular product or store for sale than others. Therefore, buying consumers is even more complicated. Consumer purchases may be influenced by physical, psychological, and social factors. The COVID-19 epidemic has changed the world fundamentally as we know it. People live differently, shop differently and in many ways, think differently. It has taken great importance when it comes to talking about India, because Indian consumers have different characteristics such as different religions, customers, and speaking different languages. Studying consumer behavior is very important in the current context of the epidemic as about 70 percent of the population continues to struggle with “fear and anxiety” and consumer perception in particular is “harmless and cautious”. The virus is reshaping the consumer goods industry in real time, rapidly accelerating long-term trends in a matter of weeks. Our research shows that the new trends that have been developed now will be more tolerant of this problem, permanently changing what we value, how we buy and where we are, and how we live and work. While this critical situation continues to emerge, by examining the changes that are taking place now, we can look at what consumer goods businesses should do today to prepare for the next one. And it has also been noted that there is a lot to learn from buying but unfortunately very little has been done in the area of post-consumer behavior research focused on consumer goods that are fast moving (FMCG) as none of us were prepared for this sudden change in the market.

### ***Keywords:***

Buying Behavior, COVID-19, Pandemic, FMCG, India, Indian Consumer

# Prediction of Atmospheric Ozone Pollutant using Fuzzy Logic Method to Monitor of Air Quality in Surabaya City During the Covid-19

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## ***Abstract:--***

One of the causes of air pollution is transportation, industry processes and other activities that use fossil fuels. Air pollution occurs in almost all major cities in the world, and also in Surabaya city. The existence of Covid-19 that has hit almost all countries in the world, has an impact on reducing land transportation activities, and improving air quality. In this study, a pollutant predictor design was carried out using fuzzy logic, during the Covid-19 period. The fuzzy logic system used of Takagi-Sugeno type with clustering means. The input of predictor is three variables of pollutant i.e: O<sub>3</sub>, SO<sub>2</sub> and NO<sub>2</sub> and five weather variables: wind speed, wind direction, humidity, solar radiation and air temperature. The output of predictor is ozone concentration. The best model of the predictor with RMSE = 0.1809, MAE value = 0.115 and the average prediction result of O<sub>3average</sub> = 56.95 (µg/m<sup>3</sup>). The model is also used to predict pollutant levels in the pre-Covid-19 period, which shows the amount of O<sub>3average</sub> = 63.59 (µg/m<sup>3</sup>). The prediction accuracy of fuzzy logic system is 80.43%. This accuracy value is higher than the results of previous studies using the Mamdani fuzzy logic method, with an accuracy of 74.33%.

## Incorporation of Environmental Criteria in the Tendering Process of Bhutan.

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### ***Abstract:--***

Green Public Procurement (GPP) is considered as an important tool to improve environmental performance, reduce the consumption of natural resources, and motivate markets towards green product with innovation. The study aims to develop environmental criteria of office supplies in the tendering process of the Royal Government of Bhutan (RGoB). The main objectives of the current study are to assess the existing GPP in Bhutan and determine environmental criteria. The descriptive research analysis was adopted to assess the extent environmental criteria applied in tendering process, where the primary respondents were the procurement officials working for the RGoB. The comprehensive literature review was conducted to identify the best-practiced environmental criteria. The Analytic Hierarchy Process (AHP) was adopted to prioritize the environmental criteria. The outcome will aid in understanding the current practices the extent of implementation of GPP in tendering process; the standard environmental criteria will be recommended for implementation. This study will immensely assist in understanding the existing practice, further will be able to improve GPP implementation in the tendering process. It is expected to ensure maximum environmental and financial benefits to the government as the RGoB spent approximately 60-70% of its annual budget on procurement of goods, services and works alone.



## Theory of 3-Folds and 4-Dimensional Universe

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***Abstract:--***

Three Postulates are defined here, based upon current experimental limit on size of Fundamental particle i.e. upto  $10^{-19}$  m and an Empirical formula is derived ( $h=k*c*Q \Rightarrow m*v*\lambda$ ) giving maximum mass of particle within experimental range of TeV. 3<sup>rd</sup> Postulate i.e. Equivalency between “Mass” and “Straight Imaginary Line” gives co-relation between Massless (Curved Imaginary Line) and spin = 1 properties of Boson as proved in QED theory. Fundamental particles of Standard Model are arranged in 3 Folds way in 4<sup>th</sup> Imaginary Dimension in order of Bottom Fold, Middle Upper and Lower Folds and Top Fold with decreased in energy from TeV to approx. 0 eV respectively. With this representation of the Universe at atomic and sub-atomic level, it solves lot of current problems of SM of Particle physics like Matter-Antimatter Asymmetry, origin of 3 Generations or families of Fermions, Nature of gravitating Dark Matter and repulsive Dark Energy particles, cosmological coincidence, origin of mass of hadrons like protons, origin of mass for neutrinos, wave-particle duality of particles etc. giving true insight about nature of fundamental particles. **This theory also demands existence of 4<sup>th</sup> Pair of Neutrino-Antineutrino.**

***Keywords:***

Particle Physics, Standard Model, Dark Matter, Dark Energy.

# Analysis of User Behavior to Identify Attack in Cloud Environment using BHF Algorithm

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## ***Abstract:--***

Cloud platform has been identified as popular in providing SaaS (Software as a Service) in recent days. As like any other environment the cloud platform face variety of security threats and the intrusion attacks are most dominant among them. To mitigate the intrusion attacks and secure the platform in providing seamless service, different methods are recommended in literature. Still, the methods suffer to provide higher security for the services of cloud platform, to improve the performance in detecting intrusion attacks, an efficient Service Specific Payload Inference Analysis Model (SSPIAM) is presented. The model monitors different activities happening in the environment by accessing the services provided. Different users of the environment have been allowed to access the services and each activities and behaviors are monitored by the system. Such activities and behaviors are tracked and logged in the service access logs. According to the logs, the model measures the values of Behavioral Trust Factor (BTF), Hit Rate Trust Factor (HRTF) and Payload Level Trust Factor (PLTF) measures. Using all these factors, the method computes the Trusted Service Access Factor (TSAF) to perform intrusion detection. Based on the value of TSAF, the method performs intrusion detection and improves the performance of intrusion detection and reduces false classification ratio.

## ***Keywords:***

Cloud Systems, SaaS, QoS, Cloud Security, SSPIAM, BTF, HRTF, PLTF, TSAF, Behavior Analysis, Hit Rate.

## The Rising Relevance of Multidisciplinary Perspectives in Research

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### ***Abstract:--***

Multidisciplinary research has been getting more traction with many new innovations happening in the field of Science & Technology at boundaries of different domain across the globe. India has improved its ranking in the 2020 Global Innovation Index by four places to 48th from 52nd position in 2019. However, a lot still needs to be done especially in terms of multidisciplinary research and greater industry participation. In theory, such analogous research offers an opportunity for the international development research community to become more broadly consistent with the key principles in development policy. Linking development policies to multidisciplinary research also presents an opportunity to minimize the risk of “confirmation bias”. The SWOT analysis; an output of multifaceted approach (Strengths, Weaknesses, Opportunities and Threats) is a strategic planning measure developed from Marketing Science, and applied to assess the strategic potential of a development-related research. New technologies have revolutionized nearly every aspect of human existence, including the ways that firms market products and services to consumers. Along with now familiar innovations like the Internet, greater computing capacity, mobile devices and applications, and social media, more radical innovations are emerging. Technological advances made in the field like Artificial intelligence (AI), the Internet of things (IoT) and robotics has given a new facelift to the integrative approach. India’s New Education Policy that focus on making education multidisciplinary is a significant step that will benefit the students and have far-reaching effects. The intent of this paper is to rationalize how the recent swings made in multidisciplinary approach has changed the research methodology. Moreover, multidisciplinary research is seen as indispensable nowadays to tackle complex problems beyond disciplines.

### ***Keywords:***

Multidisciplinary, SWOT, Research, swings.

## “Parents’ Level of Information In Relation To School Readiness of Kindergarten Pupils”

**JEMUEL S. VIDAL**, Philippine Christian University

### ***Abstract:--***

This research is designed to show a comprehensive description and discussion on the Kindergarten Pupils school readiness as assessed by the teachers and its correlation to parent’s level of information on school readiness of Kindergarten. This study intended to determine the school readiness of Kindergarten pupils in relation to parents’ level of information from Teachers and Parents of Kindergarten pupils who will be entering first grade. This study utilized descriptive-correlation method, each variable has been critically and carefully examined and discussed as required in this study. The research adopted a Purposive sampling technique in which the researcher relied on his own judgment in choosing members of population to participate in this study. Two instruments were used for this study, First, is “A Comparison of parents and Teachers’ Evaluations About School Readiness Among First Grade Pupils of Primary Schools in Tehran”, Second, is the “Philippine Early Childhood Development Checklist 2009”.

Based on findings, the obtained chi-square ( $X^2$ ) value of 7.48 is more than the critical value of 5.991 at 0.05 level of confidence, using 2 degrees of freedom, thus the null hypothesis of no significant relationship between two variables is rejected. Kindergarten pupils’ school readiness has a significant relationship with their parents’ level of information. Pupils who belong to far above standards tend to have parents with very high level of information, while those who belong to above and standard levels tend to have parents with high level of information on their child’s school readiness.

In the light of statistical analysis and the findings of the study, the following conclusions were drawn. Generally, the kindergarten pupils school readiness in terms of social and emotional and cognitive domains are far above standards, above standards in regards to self-help and language domains. In terms of Parents Level of Information, the parents have high level of information on school readiness of their children in the areas of psychosocial, activities for daily living, communication and intellectual domains. There is a significant relationship between kindergarten pupil’s readiness and their parents’ level of information. The overall findings influenced this study to develop a Summer School Readiness Program for Kindergarten pupils to better prepare them in entering First Grade.

## Air Quality Monitoring in Heavy Water Plant, Thoothukudi

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**P. Muthumari**, PG student of Chemistry, A.P.C.Mahalaxmi College for Women, Thoothukudi

### ***Abstract:--***

The air pollution is of predominantly local origin. Air Quality monitoring will normally provide the information to support and facilitate the assessments of the air quality in a selected area. The present study deals with the analysis of Irrespirable suspended particulate (IRSP) or PM<sub>2.5</sub>, Respirable suspended particulate matter (RSPM) or PM<sub>10</sub>, gaseous pollutants and heavy metals. The results indicated that the levels of IRSP (<2.5 µg/m<sup>3</sup>), RSPM (<10 µg/m<sup>3</sup>), gaseous pollutants such as SO<sub>x</sub> (16 µg/m<sup>3</sup> - 3.6 µg/m<sup>3</sup>), NO<sub>x</sub> (<10 µg/m<sup>3</sup>), NH<sub>3</sub> (145 µg/m<sup>3</sup> - <10 µg/m<sup>3</sup>) & O<sub>3</sub> (<10 µg/m<sup>3</sup>) are within the levels as suggested by National Ambient Air Quality Standards (NAAQS). Report on the analysis of heavy metals such Cu, Cd, Pb, Ar, Zn, Hg confirm that the risk of heavy metals contamination in the air is low. It is concluded that the quality of air is good in the surroundings of Heavy Water Plant, Thoothukudi

### ***Key words:***

Air quality, Heavy water plant, IRSP, RSPM, Heavy metals

## Work Life Balance of Employees and Its Effect on Work in Thoothukudi Nationalized Banks

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***Abstract:--***

Work-life balance is now playing a significant role in deciding the job related performance of employees in any industry. Recent economic downturns and increased competition has put pressure on organizations to perform, and on employees to increase their productivity. Organizations deal with these tough economic times by cutting expenditure, decreasing staff levels and increasing workload for the remaining employees. The hectic life of retention and excelling in bank job has put tremendous pressure on bank employees' life and leads to work life imbalance which is a problem that poses a big risk to workers well being, their performance as well as the organizational performance. This paper intends to examine the degree of work life balance among public sector bank employees and explore how it is influencing the work related activities of the bank employees.

***Key words:***

Work Life Balance, stress, performance, work load and employees.

## Biosynthesis of silver nanoparticles Using *phallusia arabica* and evaluation of total antioxidant activity

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**Dr. R. Jothibai Margret**, Associate Professor, Department of Chemistry, Pope's College, Sawyerpuram

**Dr. V.K. Meenakshi**, Associate Professor (Retired), Department of Zoology, A.P.C. Mahalaxmi College for women, Thoothukudi

### **Abstract:--**

Biosynthesis of nanoparticles is a current field of nanotechnology which has eco-friendly and economic benefits compared to chemical synthesis. The ascidians, commonly called “sea squirts” (Subphylum: Urochordata, Class: Ascidiacea) are leading organisms in many marine communities, having a broad geographic distribution. Among the marine animals, ascidians are ranked third in overall activity next to sponges and bryozoans. Ascidians show striking biological activity and more than 130 natural products have been isolated from them. It has been found that the natural products received from ascidians have immense potential in pharmaceutical and biomedical field. In this study, the ascidian *Phallusia arabica* ethanol extract was acted as a reducing agent for the preparation of silver nanoparticles (Ag-NPs). Ag-NPs was confirmed by the colour change using UV-Visible Spectroscopy and the size and shape of the NPs were determined by the SEM and the functional groups was identified by using Fourier transform infrared spectroscopy. Synthesized Ag-NPs were characterized by X-ray diffraction studies, EDAX and Cyclic voltammetric studies. Atomic force microscope measurements confirmed the size and morphology of the synthesized Ag-NPs. Cyclic voltammetric studies also confirmed the presence of nanosilver. Silver nanoparticles exhibited a significant total antioxidant activity that increased with increasing concentration.

### **Key words:**

Silver nanoparticles, *Phallusia arabica*, XRD, EDAX, FTIR, SEM, AFM, Antioxidant activity

## A Study of Commutativity in R-Near Rings

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**Muthu Maheswari.K**, Research Scholar, PG and Research Department of Mathematics, A.P.C.Mahalaxmi College for Women, Thoothukudi, Tamilnadu, India

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### ***Abstract:--***

In this paper, we discussed the structures of a R-near ring with respect to the commutative property. Any commutative near ring is a R-near ring if it is regular. Every pseudo stable, weak commutative near ring and a pseudo commutative near ring with right identity is a R-near ring whenever it is Boolean. In a commutative R-near ring,  $N$ , the set of all idempotents is contained in the centre of  $N$ . Any commutative R-near ring is a strong  $S_1$ -near ring and vice-versa; also with the property that every ideal is a completely semi prime ideal and reduced. Every left identity is also a right identity if  $N$  is Boolean and every quotient near ring  $R/I$  is an R-near ring whenever  $I$  is an ideal in  $N$ . Also, it is proved that, any zero symmetric R-near ring has  $(*, IFP)$ ; strong IFP and property  $P_4$ .

### ***Key words:***

R-near ring, commutative near ring, regular, pseudo stable near ring, weak commutative near ring, pseudo commutative near ring, strong  $S_1$  near ring, Zero Symmetric



## Green synthesis and characterisation of copper oxide nanoparticles using colonial ascidian *Ecteinascidia venui*

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### ***Abstract:--***

Development of an eco-friendly process for the synthesis of copper nanoparticles (CuNPs) is an important aspect in the field of nanotechnology. In this report, copper nanoparticles were synthesized by colonial ascidian *Ecteinascidia venui* and morphology of the CuNPs were analyzed. The biomolecules induce the reduction of  $\text{Cu}^{2+}$  ions to CuNPs and also act as a capping and stabilizing agent. The formation of CuNPs was monitored by absorbance spectra of UV-visible spectrophotometer at different stages during the synthesis process. The biosynthesized CuNPs were characterized by different instrumental techniques and results described the particles are crystalline, cubical shape with the average size and highly stable. The present study could prove to have an enormous impact in the immediate future to synthesize metallic nanoparticles on an industrial scale.

### ***Key words:***

Colonial ascidian, *Ecteinascidia venui*, Copper oxide, synthesis



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