



# SOUVENIR

INTERNATIONAL CONFERENCE

On

RESEARCH AND DEVELOPMENT IN  
SCIENCE, TECHNOLOGY AND  
MANAGEMENT IN THE CURRENT ERA

Date: 21<sup>st</sup> February 2021

Organised By

Indian Academicians and Researchers Association (IARA)



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**On**

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Technology and Management in the Current Era**

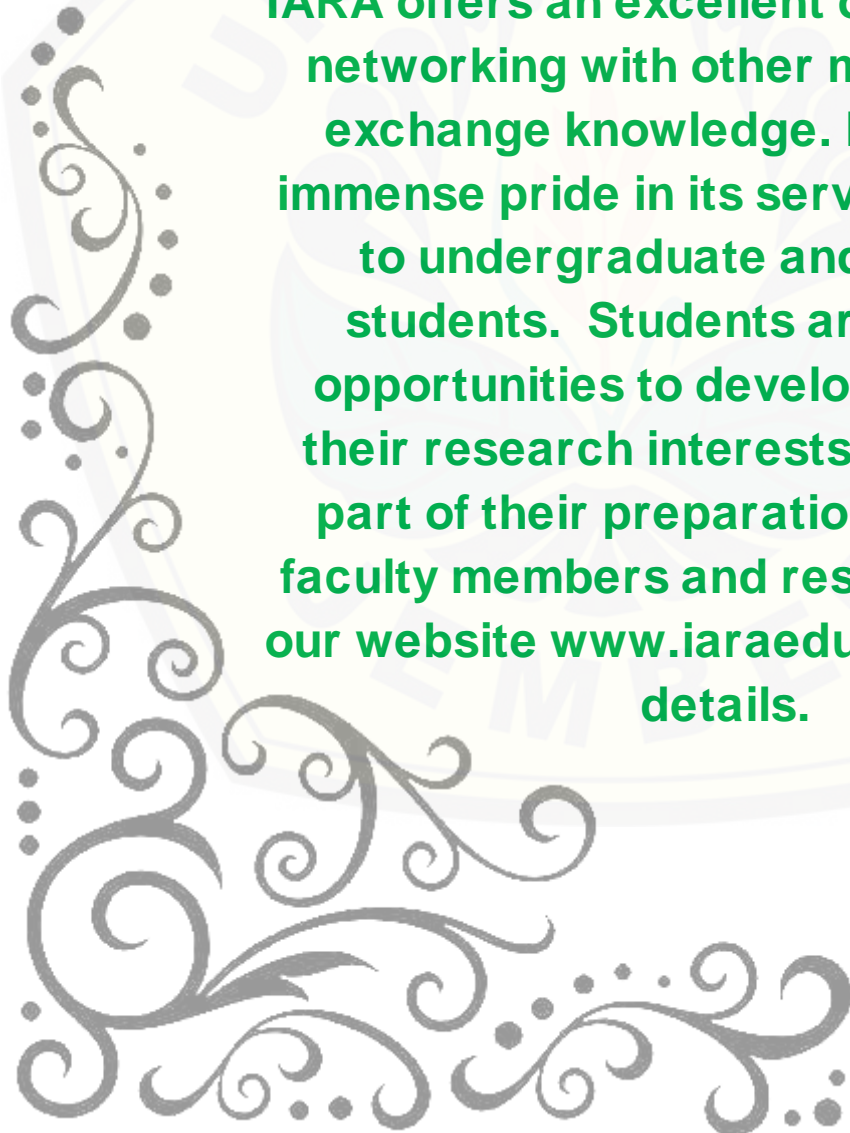
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**Indian Academicians and Researchers Association (IARA) is an educational and scientific research organization of Academicians, Research Scholars and practitioners responsible for sharing information about research activities, projects, conferences to its members. IARA offers an excellent opportunity for networking with other members and exchange knowledge. It also takes immense pride in its services offerings to undergraduate and graduate students. Students are provided opportunities to develop and clarify their research interests and skills as part of their preparation to become faculty members and researcher. Visit our website [www.iaraedu.com](http://www.iaraedu.com) for more details.**



## ABOUT THE CONFERENCE

**The theme of this conference revolves around bringing researches done in the field of Science, Technology and Management in the current era on a single platform. This conference has drawn researchers from diverse fields, to share their research findings and latest ideas. The main intention of this conference is to integrate interdisciplinary inquiry to deliver the best applications.**



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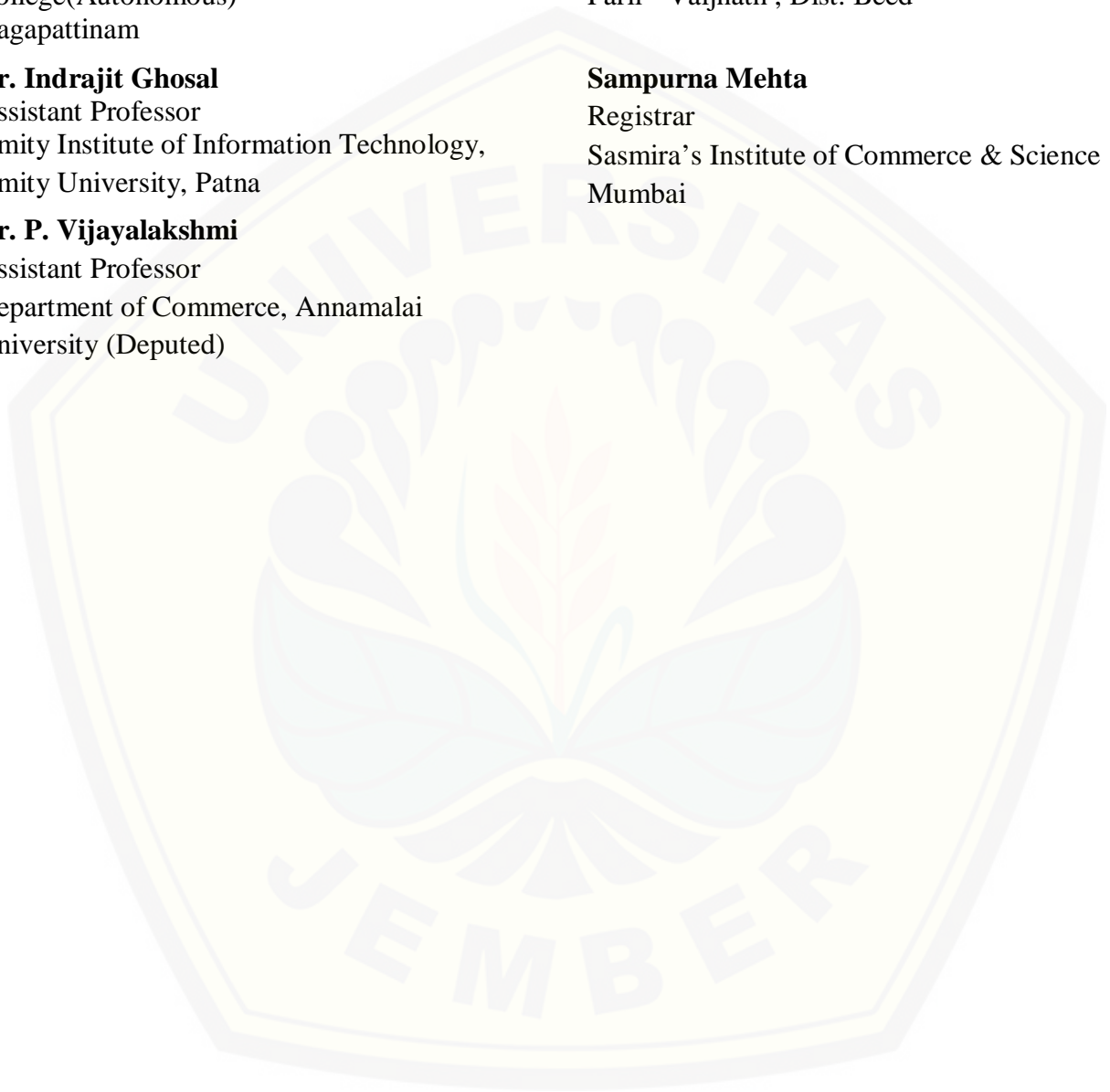
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### THE EFFECT OF SMART BLOCKCHAIN CONTRACTS ON THE FINANCIAL SERVICES INDUSTRY IN THE BANKING SECTOR IN JORDAN

**Mohammad Salameh Zaid Almahirah**

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#### **ABSTRACT**

*The study aimed to identify the effect of smart blockchain contracts on the financial services industry in the banking sector in Jordan, through an empirical study on the Jordanian banking sector. The study population was represented by the banks in the Jordanian environment, (15) banks were selected with their various branches. As for the study sample, it consisted of (81) including (managers, deputy directors, heads of departments, major clients), representing approximately 67.5% of the total sent questionnaires. A questionnaire was used as an instrument of the study in order to collect data from the study population. The descriptive and analytical approach was used. The study concluded that there is a statistically significant relationship regarding the impact of smart blockchain contracts on the financial services industry in the banking sector in Jordan. It was found also that the smart blockchain contracts help to reduce the cost of Banking services and enhancing operational efficiency in Jordanian banks. Moreover, they enhance and develop banking services and upgrade them in Jordanian banks. In light of the results of the field study, the researcher recommended that Jordanian banks should rely on smart Blockchain contracts in the field of banking sector that will contribute to reducing costs related to remittances and raising the operational efficiency of these banks.*

*Keywords: Blockchain Smart Contracts - Financial Services Industry - Banking Sector in Jordan*



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****ECONOMIC DISPATCH OF REAL POWER GENERATION USING LAGRANGE MULTIPLIER  
ALGORITHM****Ismail Marouani<sup>1</sup> and Hsan Hadj Abdallah<sup>2</sup>**Assistant Professor<sup>2</sup> and Professor<sup>2</sup>, Control & Energies Management, (CEM-Lab) National Engineering,  
School of Sfax, ENIS Sfax, Tunisia**ABSTRACT**

*The economic dispatch of generators is a key element in the optimal operation of power generation systems. Many power system optimization problems including economic dispatch (ED) have nonconvex characteristics with heavy equality and inequality constraints. Although, in this paper, the dynamic economic dispatch (DED) problem with active power flow limits and transmission line loss is solved using Lagrange multiplier algorithm (LMA). The objective of the DED problem is to find the optimal power output of each unit at each time so as to minimize the total generation cost. In addition, this optimal solution must meet the demand power in a given time interval. The performance and effectiveness of the proposed algorithm are verified via numerical studies on the 26-bus test system network. The results of simulation are obtained using matlab Simulink.*

*Keywords: Economic Dispatch problem, Lagrange multiplier optimization, costs of generation, demand power, power losses.*



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### TESTING READING FOR SPECIFIC PURPOSES IN AN ART EDUCATION COURSE FOR GRADUATE STUDENTS IN SAUDI ARABIA

**Prof. Reima Al-Jarf**

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#### **ABSTRACT**

*Since most Saudi graduate students are not proficient in English, they are required to take an ESP course to enable them to read and comprehend reference material in English and translate the required information for their assignments and theses. Based on a needs assessment questionnaire and an English Proficiency Test results, an ESP course was especially designed to meet art education students' academic and professional needs. At the end of the semester, the students were posttested. The posttest required the students to locate main ideas and supporting details and to figure out meanings of key art terms from context. It also required them to identify the part of speech of art terms and detach suffixes. They also gave the overall meaning of short paragraphs and single sentences in Arabic. A detailed description of the content sampled, skills tested, sample items, and statistical analyses of the ESP reading test scores are reported.*

*Keywords: art education, ESP, graduate students, reading for specific purposes, reading in art education, reading instruction, reading skills, reading tests.*



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**CORONAVIRUS TRANSMISSION THROUGH OCULAR SECRETION: A REVIEW OF  
CORONAVIRUS AND OCULAR MANIFESTATIONS**

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**ABSTRACT**

*COVID-19 (Corona Virus Diseases-2019) is the newest global pandemic caused by SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus-2). This article aims to study the relationship between COVID-19 and the conjunctival swab test systemically. This article is based on several scientific reports related to conjunctival swab performed in COVID-19 patients from the PUBMED database, Google Scholar, Springer Link, Elsevier, medRxiv, bioRxiv, and Wiley Online Library. Keywords used are conjunctivitis, ocular, ophthalmic, COVID-19, SARS-CoV-2, 2019-nCoV, Coronavirus, Coronavirus-19, Coronavirus19, pathophysiology, mechanisms, tear, conjunctival swab, RT-PCR, and conjunctiva. Eight reports were reviewed in this article. Respiratory symptoms and ocular manifestation such as conjunctivitis with hyperemic eyes, conjunctival chemosis, epiphora, and other rare ocular manifestations were observed in COVID-19 patients. Ocular manifestation may present as a sole symptom, prodromal symptom, simultaneously appear with the systemic symptom, or as residual floaters. Various therapy was given according to the complaints. RT-PCR results from the conjunctival swab test may be positive and negative in COVID-19 patients with conjunctivitis. From this article, we hope to highlight the importance to take optimal prevention measures for medical staff despite the presence or absence of ocular clinical manifestation.*

*Keywords: COVID-19, ocular manifestation, conjunctival swab*

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**REVIEW OF NATIONAL POLICY IN THE RUSSIAN EMPIRE**

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**ABSTRACTS**

*The article is devoted to the phenomenon of nationality policy in the Russian Empire and presents views on the formation and development of a nation in the Russian and Western scientific traditions. The first defines a nation as the highest level of development of an ethnos, and the second considers an ethnos and a nation to be one concept denoting one phenomenon that either unites people or divides them. The article considers the national policy in the Russian Empire as a process based on the phenomenon of the nation. The conceptual field of work is formed by the following concepts: idea, principle, phenomenon, element, feature, characteristic, instrument, state, ideology, ethnos, nation, national policy. The article analyzes two principles of nation formation: the nation's right to self-determination and the state's right to the inviolability of the territory, as well as national policy as a tool for resolving the contradictions arising from the application of these principles. The consequences of acting on one of the two principles are considered in terms of war and peace. Special attention is paid to the historical substantiation of the national policy in the Russian Empire and the consideration of its elements: Russification as part of integration or as part of segregation, as well as the analysis of the content of the basic concepts of national policy in the Russian Empire: the border territory and its class analogue, the national outskirts. The features of the national policy of the Russian Empire are highlighted - complexity, differentiation, flexibility and relevance. The drawbacks are noted - the lack of vision of the future multi-ethnic state and its border territories from the point of view of the general ideology. National policy is presented in the aspect of state and public goals, as well as methods of implementing national policy on the territory of the state (development of national (colonial) outskirts), corresponding ideology, formal and informal characteristics inherent in the concept of national policy. In the above tables, you can see: comparison of ethnos and nation by the criterion of participation in politics, the administrative organization of territories (khanate, emirate, general government, kingdom, Great Kingdom, etc.), the status of a representative of the central government and the title of a position in the system of administrative power, as well as the peculiarities of the Russification policy in the border areas of the Russian Empire. Based on the above analysis, it is established that the nation in the Russian Empire was not formed, since the political sign of the nation at this stage did not become a factor in changes in public life and a peaceful solution to the problem of the development of the nation became impossible. The national policy in the Russian Empire had its own characteristics that distinguished it from other empires - the state (autocracy) recognized the need for a national policy, the process of uniting people (subjects) was carried out on the basis of a common ideology, which was not imposed on the annexed territories and peoples, but pursued the goals of unification based on common language and culture, but did not take into account the inevitable political development of peoples.*

*Keywords: border areas, national policy, state*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****GLOBAL FOOD SECURITY: ASSESSMENT AND TRENDS****Maryna Nehrey<sup>1</sup> and Iryna Voronenko<sup>2</sup>**

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**ABSTRACT**

*Food security policy is constantly one of the most important problems of mankind. It is also approved for sustainable development as the number two goal. The COVID-19 pandemic also confirmed the urgency of the issue and highlighted weaknesses in food security in various countries. The paper summarizes the main theoretical data on the methodology of calculation of the Global Food Security Index, presents the results of comparative analysis according to its data for 2012 to 2019 for the country for Asia and Pacific and Europe. The generalization of indicators included in the calculation of the Global Food Security Index allowed to identify the main "weaknesses" of the food security system by the country for Asia and Pacific and Europe. Also using Data Envelopment Analysis (DEA), an assessment of the use of countries' resources to ensure food security was conducted. Expenditure on food security is more efficient, mainly in low-income countries. Food security policy in highly developed and developing countries is based on different approaches, which confirms the results of the assessment of resource efficiency.*

*Keywords: Food Security, Global Food Security Index, Agriculture, Efficiency, Data Envelopment Analysis.*



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****IMPROVING THE MARKETING OF NATURAL MINERAL WATER ON THE EXAMPLE OF  
PJSC "MYRHOROD MINERAL WATER PLANT"****Dobryanska V. V.<sup>1</sup> and Chichulina K. V.<sup>2</sup>**<sup>1</sup>PhD in Technical Sciences, Associate Professor, National University "Yuri Kondratyuk Poltava Polytechnic", Poltava, Ukraine<sup>2</sup>PhD in Technical Sciences, Associate Professor, National University "Yuri Kondratyuk Poltava Polytechnic", Poltava, Ukraine**ABSTRACT**

*PJSC "Myrhorod Mineral Water Plant" was chosen as the object of research of the scientific article. PJSC "Myrhorod Mineral Water Plant" and its trademark "Myrhorodska" are widely known and popular among consumers. To analyze the attitude of consumers to the products of PJSC "Myrhorod Mineral Water Plant", a marketing study was conducted through a questionnaire Internet survey using google forms, the results of which revealed weaknesses in the marketing system of the enterprise. Such shortcomings are include the product portfolio has not been updated for a long time (consumers want to update it); unsatisfactory design of the products and means of advertising. An analysis was also made of the competitiveness of the products of PJSC "Myrhorod Mineral Water Plant", which consumers like the least by the method of integrated assessment of marketing objects. An expert focus group was set up to determine the list of evaluation criteria. To increase the objectivity of the assessment of the opinion of experts was used the method of the survey "Designer the L.S.Shkolnik". The main way to improve the marketing activities of the researched enterprise is the introduction of an innovative product. We have offered new products in the form of sweetened low-carbonated water with the addition of plant extracts. The logo, the layout of the environmentally friendly "Plant Bottle" and the innovative "Myrhorod Fresh & Health Collection" trademark were also presented. The price of "Plant Bottle" is lower than the packaging currently used by PJSC "Myrhorod Mineral Water Plant". Concluding this study, we can conclude that PJSC "Myrhorod Mineral Water Plant" has a strong position in the mineral water market. But at the same time the company has weak links that require innovation to help maintain and improve the business.*

*Key words: integrated assessment, marketing, marketing research*

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### MULTI-OBJECTIVE OPTIMIZATION BASED ON NSGAI<sup>II</sup> APPLIED FOR ACTIVE AND REACTIVE DISPATCH PROBLEM

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#### ABSTRACT

*This paper presents the application of an elitist multi-objective evolutionary algorithm based on the Genetic Non-Dominated Sorting Algorithm II (NSGAI<sup>II</sup>) applied to solve the active and reactive dispatch problem ARDP. This problem consists to optimizing simultaneously three objective functions, such as the real power loss in the transmission lines, the voltage deviation at the load buses and the cost of the active power production, while satisfying several equality and inequality constraints. To validate this optimization technique, a 14-bus test system is used. The results of simulation are obtained using matlab Simulink.*

*Keywords: Economic Dispatch problem, Lagrange multiplier optimization, costs of generation, demand power, power losses.*





**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****IMPACT OF LABOR ON THE ECONOMIC GROWTH OF VIETNAM: HISTORY, SITUATION  
AND PREDICTION****Phuong Huu Tung and Nguyen Van Tri**  
Hanoi University of Home Affairs, Vietnam**ABSTRACT**

*This paper analyzes the effects of the fluctuation in labor force and labor productivity on Vietnam's economic growth. Using the neoclassical growth model with data from the General Statistics Office, the study shows that when the number of laborers increases by 1%, the economic growth rate will raise by 2.78%. Combined with predicted figures on changes in Vietnam's labor force in the period of 2009-2049, the results of the study reveal in order to maintain the current economic growth rate, labor productivity needs to increase to 106.2% in the period of 2029-2039 and 111.6% in the period of 2039-2049. Vietnam is losing the advantage of labor force so its long-term economic growth will depend mainly on labor productivity. Improving the quality of labor is the driving force for the economic growth. This depends on the combination of specific national policies and strategies, in which education and training policies are highlighted.*

*Keywords: Labor; Labor productivity; Economic growth.*



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**A COMPARATIVE ANALYSIS OF PUBLIC EDUCATION SYSTEM OF INDONESIA AND  
UZBEKISTAN**

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**ABSTRACT**

*The Government of Uzbekistan, experiencing modern reforms in an educational sector as a strategic part of a development program after the last presidential elections, spends an enormous portion of its resources on public education – significantly more than other countries in Central Asia, elsewhere with a similar income level, however, satisfactory results yet to be achieved and remains one of the crucial issues of the republic. Meanwhile, far in South-East Asia, Indonesia has made dramatic progress on expanding access to education, directing a huge stream of money towards formal education over the past few decades, but still, the learning outcomes remain low. In addition to key reforms in mandatory schooling in terms of increased quality of investment, utilization of information, communications hold considerable promise in improving educational outcomes. This comparative study on the compulsory education of both countries investigates the reasons for the low results in schooling in Indonesia and Uzbekistan. Throughout the survey, we have interviewed school teachers, principals, and authorities, analyzing available sources to find out the problem causing factors. Drawing on our findings indicating the need for reforming the teaching-learning process, and proper investments in public education to reach promising milestones.*

*Keywords: public education; primary schools; financing education; educational issues; Indonesia; Uzbekistan; Southeast Asia; Central Asia;*

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**COMPREHENSIVE EFFECTS OF A NOVEL INFORMATION SYSTEM TO MITIGATE  
MACULAR DEGENERATION**

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**ABSTRACT**

*This study measures the comprehensive effectiveness of a novel information system to mitigate macular degeneration. The data were surveyed through questionnaires and interviews from October 7 to December 2, 2019. The subjects of the study were 106 people who visited the general hospital ophthalmology located in Chungcheongnam-do. The general information of study participants was analyzed by X2-test. The macular degeneration status before and after the information system is analyzed as t-test. The results of this study are as follows. Firstly, 64.2% of the experimental group showed significantly insufficient sleep conditions than 52.8% of the control group ( $X^2=5.71, p<.05$ ). Secondly, chiropractic pressure around the eye increased significantly after application than before information was applied ( $t=-7.58, p<.01$ ). Thirdly, the symptoms of macular degeneration continued to decrease after two days of system application than before information system application. In conclusion, we confirm that the application of a novel information system is effective in mitigating macular degeneration. Therefore, the results of the research are expected to contribute to the treatment of other eye diseases.*

*Keywords: Macular degeneration, Information system, Sleep conditions, Chiropractic pressure, Treatment*



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**IVF EFFICIENCY AFTER METROPLASTY IN PATIENTS WITH UTERINE SCAR**

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**ABSTRACT**

*Background*

*Infertile marriage, the frequency of which does not tend to decrease, is an urgent issue of modern healthcare. According to world statistics, the frequency of infertility is 10-15% and its causes are numerous. The prevalence of this problem is increasing every year. Today, assisted reproductive technologies can help overcome all known causes of infertility. Pregnancy achieved with the use of assisted reproductive technologies ended in live births based on embryo transfer in IVF cycles 28.0% and with ICSI 25.7%.*

*Aim: increasing the efficiency of assisted reproductive technologies in the treatment of uterine scar.*

*Results*

*In our study, the age of the patients, gynecological status, duration of infertility, clinical manifestations, IVF performance, results of ultrasound diagnostics for the viability of the uterine scar, as well as signs of inconsistency of the uterine scar were noted.*

*Conclusion*

*In our study, after confirming the inconsistency of the uterine scar, 30 patients underwent metroplasty. According to the protocol, after the surgery, the patients were prescribed contraception in order to avoid unwanted pregnancy until the full recovery of the uterine scar within 6 months. Conducting pregravid metroplasty in patients with inconsistent uterine scar will significantly increase the rate of IVF success. The results obtained contributed to the introduction of metroplasty surgery to correct the inconsistency of the uterine scar in patients when planning ART.*

*Key words: Infertile marriage, IVF, metroplasty, scar*

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**UVEITIS IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)**

**Nugraha Wahyu Cahyana**

Department of Ophthalmology, Faculty Medicine, Jember University, Jember

**ABSTRACT**

*SLE or Systemic Lupus Erythematosus is known as an autoimmune disease, usually affect multiple systems include the eyes organ. We report a 26-year-old female, complained about painless blurred vision in the right eye since 6 months ago. The examination result shown no history of low-grade fever, fatigue, photosensitivity, arthralgia, and hair loss, erythema over the cheeks, neck, hands, chest, and back. The visual acuity examination of the right eye was 1/300, keratic precipitates and band keratopathy were not found while posterior synechiae were found. Visual acuity of left eyes was 6/40 and was found normal from anterior to the posterior's segment. Ultrasonography (USG) test showed severe OD. Severe Vitreous Opacity (suspect chronic inflammatory), but retina in its place. A serological test revealed positive PCNA with 25 intensity, negative RF, and negative ANA IFA results. The patient was consulted to the internal medicine department and was diagnosed with systemic SLE with ocular involvement. For eight weeks Oral corticosteroid was given. Six weeks after treatment, the opacity of the vitreous had decreased and the visual acuity of the right eye has improved. A case of uveitis in SLE disease can be treated with corticosteroid therapy. Management needs to be holistic, both systemic and ocular. SLE systemic management generally improves ophthalmological outcome.*

*Keywords: Corticosteroid, Systemic Lupus Erythematosus, Uveitis, PCNA.*



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### COMPARATIVE ANALYSIS OF COFFEE EXPORT IN FIVE LEADING PRODUCER AND EXPORTER COUNTRIES

Mr Petros Abebe Melerasha<sup>1</sup> and Dr. Ratinder Kaur<sup>2</sup>

<sup>1</sup>PhD. Scholar, Mizan- Tepi University

<sup>2</sup>Assistant Professor School of Management studies Punjabi University, Patiala

#### ABSTRACT

*The aim of this paper is to share experiences among five leading coffee producer and exporter countries coffee export trends. A Judgmental/ purposive sampling method was used to select countries. To examine a difference in export Kruskal Wallis test was applied to examine five years coffee exports (2015/16- 2019/20). All test results confirm that there is difference in type of coffee exports among countries. The main reason for the difference is due to government policies, capacity and capability to use technology. In order to enhance coffee export and benefit gained from coffee sharing experience from Vietnam, focus on value-adding activities and applying secondary processing is essential.*

*Keywords: - Comparative analysis, Coffee Export Five Leading Countries.*



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****A MESH NETWORKING BASED SOLUTION ON POWER MANAGEMENT****Mr. S. Aravindh**

Associate Professor CSE, Jagannath Institute of Technology

**Dr. S. Venkatesan and Dr. V. Manonmani**

Principal / Professor ECE, Jagannath Institute of Technology

**ABSTRACT**

*The development of automatic metering system and power management is presented in this paper. The system consists of Zigbee Digital Power meters installed at every consumer's unit and an automatic e-Billing system at the energy provider's side. The Zigbee Digital Power meter (ZPM) is a single phase digital kWh power meter with embedded Zigbee modem which utilizes the Wireless sensor network to send its power usage reading and the electricity bill back and forth wirelessly. At the power provider side an e-billing system is used to manage the received zigbee meter reading, compute the billing cost, and to publish billing notification to its respective consumer through wireless modem. Also the circuit is designed to manage power, when the generation of power is less available at the electricity board. The controller prioritizes the electrical appliances in each node (i.e. houses) similar to that of a mesh network. Then it gives the highest priority to the most necessary appliance needed by the user then in the same way it gives priority to all other appliances connected to the node. When the power value reaches below a threshold, the PC at the power provider section gives a command to the controller, to supply the power only to the higher priority appliances and stop providing power to the lower ones. Likewise depending on the availability, power is equally distributed to all the nodes connected to the energy provider so that each node can at least make use of the most used appliance without total power shutdown.*

*Keywords — AMI, GSM, MDMS, Zigbee.*

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**RECENT TRENDS IN WILD LIFE SMUGGLING IN INDIA**

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**ABSTRACT**

*Dealing is a type of carrying that has a long history all through the world. Much the same as any exchange, the types of dealing contrast with regards to what is required on the lookout*

*As untamed life dealing or the unlawful natural life exchange has assumed a more unmistakable position on the worldwide plan, conversations are occurring with regards to how natural life dealing occurs. An expanded agreement has uncovered that debasement is a vital facilitator of this beneficial and unavoidable worldwide underground market, however restricted examination has investigated precisely what that defilement resembles and how debasement empowers untamed life to be dealt. Moreover, research shows that Asia, especially China and Southeast Asia, are central focuses for the gracefully and request of specific types of natural life. Through a writing based examination, this paper unloads the job explicit demonstrations of debasement play in the dealing of ivory, reptile skins and live reptiles from, through or to Asia. It is suggested that in addition to the fact that individual corrupt acts empower untamed life dealing to occur, yet additionally that ruined structures (the criminal equity framework, and monetary and political establishments) in certain social orders empower dealing to occur and furthermore increment the strength of dealing to decrease measures. In gathering nitty gritty information about the types of defilement encouraging natural life dealing gotten apparent the gaps in knowledge, and therefore the important areas for further research, become evident.*





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**FACILITATING THE SIGNIFICANT ROLE OF EDUCATORS IN PROMOTING INCLUSIVE  
EDUCATION IN THE 21ST CENTURY**

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Disability Management and Special Education, Vidyalaya Campus, SRKV Post, Coimbatore

**ABSTRACT**

*This study reflected on facilitating the significant role of educators in promoting inclusive education (IE) in the 21st century. IE is a framework that certifies the occurrence, involvement, and accomplishment of all students in learning. IE emphasize occasions for equal involvement, but with choices for special aid and services as required, and for diversity within a common education environment. It distinguished IE from mainstreaming and incorporation and went more a comprehensive significance to the term IE. Educators are estimated to provide accommodations progressively diverse learner inhabitants. IE can be ready potential and flourishing one with the dynamic involvement and positive attitude of the educators. IE needs teachers to take on the challenge of erecting schools where all children can learn and know like they are in the right place. The accomplishment of this full procedure of inclusion be contingent mostly on the common environment they launch contained by the classroom to mark children with disability sense recognized, impression and accomplish their educational and social potentials. An effort has been completed to realize how educators can be encouraged in this endeavor to confirm prosperous of IE. Due to the pivotal role they play in promoting, engaging, and further decreasing achievement, particularly with children who may appear to have learning difficulties, educators are critical in these missions. It's time for educators to grasp their new role in the inclusive classroom as a counselor to children. The present study pursues to travel how inclusive principals can enable the progress of an IE philosophy in which the needs of students undergoing societal, expressive and accommodating strength of personality are best expressed and maintained by educators in the 21st century. The author decided in this study to discover and facilitating the significant role of educators in supportive of IE in the 21st century.*

*Keywords: Inclusive Education, Educators, Facilitation, Promotion, and 21st Century.*

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### A STUDY OF DATA MINING TECHNIQUES

**Harnamo Ram**

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#### **ABSTRACT**

*Data Mining and Warehousing are one of the most talked about topics in recent times in the world of database, business intelligence and software development. Data Mining is a process which extracts knowledge and finds useful patterns from enormous amount of data. Data mining is also referred as Knowledge Discovery. The paper covers a brief introduction to the Data Mining and its Techniques.*

*Keywords— Data Mining Techniques; Data Mining Algorithms; Knowledge Discovery.*



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### FUZZY CLUSTERING IN SOCIAL NETWORK ANALYSIS USING INFLUENCE PROPAGATION ON CAREER GUIDANCE LINKS

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Research Scholar, Department of Computer Science and Engineering, Hindustan Institute of Technology and Science, Chennai

#### **ABSTRACT**

*Social Network Analysis technique has potential for influencing the nodes to meet educational learning and guidance needs. we proposed the influence driven approaches to bridge the guidance of who are seeking the guidance of higher education, the proposed framework has been utilizing the social network analytics and clustering algorithms and three phases of persuasive technology. This analysis has discovered the behavioral traits and predicts the individual node then we develop the community by the fuzzy clustering algorithm, it maximizes the influence diffusion across the synthetic networks. The performance values are obtained and validated from driven approaches of persuasive behavioral traits.*

*Keywords— Influence Diffusion, Machine Learning, Community Detection, Clustering, Influence Propagation, Fuzzy Clustering, Preferential attachment, Social network analysis.*



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**A STUDY ON EFFECTIVENESS OF VESTIBULAR REHABILITATION EXERCISES TO  
IMPROVE BALANCE IN CHILDRENS WITH CEREBRAL PALSY**

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Thiruchirappalli

**Prof. C. Nageswari**

MPT, Principal, Shri IndraGanesan Institute of Medical science college of Physiotherapy, Thiruchirappalli

**S. Ramkumar**

Assistant Professor, Shri IndraGanesan Institute of Medical science college of Physiotherapy,  
Thiruchirappalli

**ABSTRACT**

*Back ground: Cerebral palsy described group of disorders of the development of movement and posture causing activity limitation that are attributed non-progressive disturbances that occurred in the developing fetal or infant brain. Vestibular stimulation can be effective for reducing or eliminating and improving visual-motor control, improving balance and coordination and promoting normal development in children with delayed motor development of children's with cerebral palsy.*

*Objective: To find out the effectiveness vestibular Rehabilitation Exercises to balance in cerebral palsy.*

*Research design: Experimental design*

*Study setting: Trichirappalli Multipurpose social service society, Physiotherapy Unit.*

*Procedure: A convenience sampling of 20 children with cerebral palsy were selected from this study. Their demographic profile and detailed medical history was collected through interviewing their parents and special educator and from the physiotherapy treatment records. Samples were divided into two groups as one is Experimental group and other is Control group. Group A was received only Basic Balance Exercises and Group B was received Vestibular Stimulation Exercises with Basic Balance Exercises for 3 weeks, 6 days a week. Subjects were reassessed after 3 weeks to measure the Balance for the difference between pre and post test values*

*Outcome measures: Pediatric Balance Scale (PBS)*

*Results: The data obtained was tabulated and statistically analyzed. Pre and post intervention, parametric statistical tests, dependent t sample test and un paired t test were used. The two-tailed P value is less than 0.0001 by conventional criteria; this difference is considered to be extremely statistically significant of Experimental group.*

*Conclusion: The vestibular Rehabilitation therapy was facilitate compensation, adaptation and habituation and involves stimulating the sensory systems, the central nervous system to reinterpret abnormal vestibular inputs as normal and regenerate or initiate new activity in the brain stem nuclei. Thus the study proves that effectiveness of vestibular rehabilitation therapy to improve the balance in children's with cerebral palsy.*

*Key words: Cerebral palsy, Balance, Vestibular Rehabilitation therapy.*

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**A STUDY OF CLOUD DATA SECURITY CHALLENGES AND COMPARATIVE ANALYSIS OF  
ITS DIFFERENT DATA SECURITY ALGORITHMS**

**Dr Gaurav Aggarwal**

Professr & Head, Faculty of Engineering & Technology, Jagannath University, NCR, Haryana

**Rashmi**

Research Scholar, Faculty of Engineering & Technology, Jagannath University, NCR, Haryana

**ABSTRACT**

*Network and Internet applications are growing very fast, since the need to secure these applications are very fast. For this purpose cryptography algorithms (symmetric & Asymmetric) are proposed. The use of relevant algorithm deals with the level of data safety in cloud because data security in cloud computing is a serious issue as the data centers are located worldwide. Authentication is the most essential procedure to ensure the cloud data in a secured manner. However, strong user authentication is the main requirement for cloud computing that reduces the unauthorized user access of data on cloud. Data security is a more important issue of cloud computing. Thus, the need to ensure the safety of information that being exchanged between the users and the cloud became more significant. Many security and authentication techniques have been proposed to secure the exchanged data. These techniques aim to keep the authentication, privacy and reliability levels of data. Here in this survey paper, I have presented security algorithms in cloud computing.*

*Keywords: Cloud computing, Cryptography, Encryption, Decryption, Cipher Text, DES, TDES, AES, RSA, Homomorphism, IDEA, Blowfish*



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### DEVELOPMENT OF A SEPIC CONVERTER POWERED HETEROGENEOUS POWER BRIDGE FOR SOLAR PHOTOVOLTAIC APPLICATION

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<sup>1</sup>UG Student and <sup>2</sup>Professor, Department of EEE, Jain deemed to be university, Bengaluru

#### ABSTRACT

Normally converters are designed by using either MOSFET or IGBT as switching device. In this work a Heterogeneous Bridge which is the combination of both MOSFET and IGBT is proposed. The power input to the Heterogeneous H-Bridge is from a solar PV arrangement regulated by a SEPIC converter. It is a DC-DC one-side Ended Primary Inductor Converter which is operated to maximize the output power. An advanced Microcontroller based control is used to achieve the controlling of firing the switches to produce an AC output to feed a low power AC load. The performance of the combined SEPIC and Heterogeneous converter delivered a power at increased efficiency and decreased distortion and these are evidenced through simulation and hardware circuits.

*Keywords:* IGBT converter, MOSFET converter, photovoltaic panel, SEPIC converter, simulation model.



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****IMPORTANCE OF RESEARCH AND DEVELOPMENT IN THE CURRENT ERA****Shifa Ahmed Shaikh.and Nida Taukir Khan**Chetana's Hazarimal Somani College of Commerce & Economics and Smt. Kusumtai Chaudhari & Self  
Financing Courses**ABSTRACT**

*Research and Development is the study of new knowledge. It is an activity which companies undertake to launch new products, processes and services. R & D is very important in many business processes. Launching new processes or improving business activities helps the company reputation. It helps you to improve your technological and computer skills and motivates you to do critical things in which you can study more about other subjects. Research and Development is crucial in business as the level of competition, processes & production are rapidly increasing. In the field of marketing where companies keep a bull eye on challengers and buyers in order to keep pace with new and modern trends and scrutinizes the need of demand and desires of their customers. If a company has a department of Research and Development, the result for it is very good but also the company has to spend a lot to signify more creativity, profit, etc. Engineers also use research and development in creating new innovations in software technology. The technology and pharmaceuticals sectors has the highest percentage of spending on research and development. Research and Development plays very important in any organization whether it is big or small. Many organizations in industries like pharmaceuticals has a full fledge to control in the quality of product and inventions of new technologies and products. Research and Development has become more important in day to day life in business activities and has evident more in the factors that resulted in a good way in the economic performance of 21st century. Well-known companies use research and development has commercial functions and has enhanced the company's main objective by creating innovative and better products. It also improves operational processes and provides expert advices to the customers of the company. It enhances the company's growth. The paper consists of research and development in the current era.*

*Keywords: Economic Growth, Education, Innovations, Organizations, Research and development.*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****HUMAN RESOURCE MANAGEMENT- CONFLICT MANAGEMENT****Ms. Anushka Santosh Walawalkar and Mr. Mihir Jitendra Dhanu**

Student, Chetana's Hazarimal Somani College of Commerce &amp; Economics - Self Financing Section

**ABSTRACT**

*A conflict may be a clash of interest. Human resources personnel settle work disputes through decoding company policies and employment and labour laws. The fundamentals of conflict could vary however it's forever a district of society. Management includes the activities of setting the strategy of a company and coordinate the efforts of its workers to accomplish its objectives through the appliance of accessible resources, like money, technological and human resource. Every organization encounters conflicts on a routine. The conflicts can't be avoided, however it's potential to manage them in an exceedingly method that we tend to acknowledge them on time. It's necessary to unendingly track the structure signals that purpose to their existence. The human resources department, HR, often acts as a negotiator between staff and managers, quickly responding to conflict and making certain employers don't violate the rights of staff.*

*Conflict resolution involves the reduction, elimination, or termination of all forms and kinds of conflict. 5 styles for conflict management, as known by Kenneth Thomas and Ralph Kilmann, are: competitor, compromising, collaborating, avoiding, and accommodating. Businesses will take pleasure in applicable varieties and levels of conflict that's the aim of conflict management. Conflict management minimizes the negative outcomes of conflict and promotes the positive outcomes of conflict with the goal of up learning in a company. Properly managed conflict will increase structure learning by increasing the quantity of queries asked and encourages individuals to challenge the established order.*

*Key Words: Conflict Management, Conflict Resolution Skills, Human Resource Personnel, Positive outcomes, Organization, Styles for Conflict Management.*



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**PROPTech FOR PROACTIVE PRICING OF HOUSES IN CLASSIFIED ADVERTISEMENTS IN  
THE INDIAN REAL ESTATE MARKET**

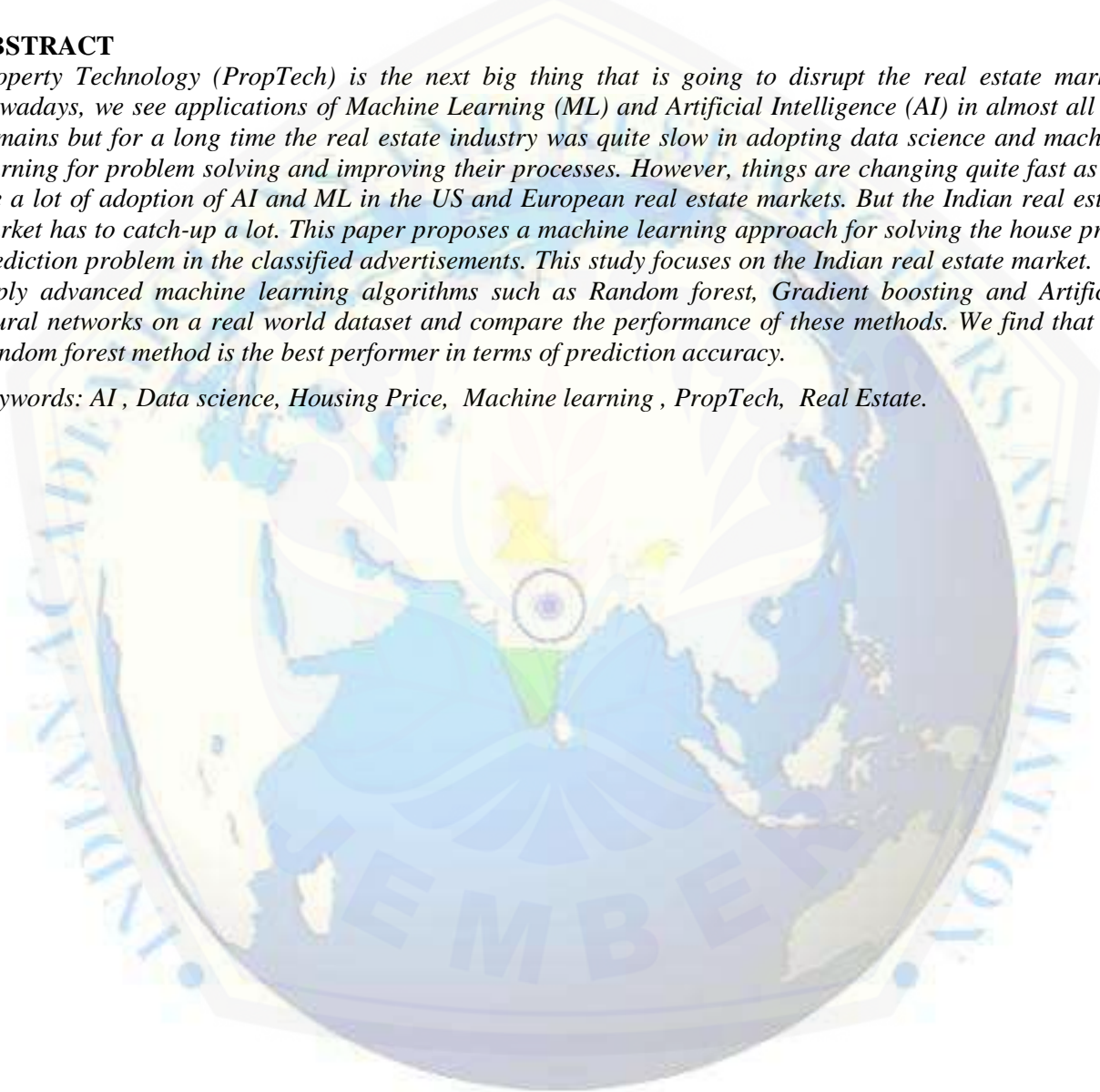
**Rajeshwaran R**

M.Sc. Data Science Computer Science & Information Technology Department, Kalasalingam Academy of  
Research and Education Krishnankoil, TamilNadu, India

**ABSTRACT**

*Property Technology (PropTech) is the next big thing that is going to disrupt the real estate market. Nowadays, we see applications of Machine Learning (ML) and Artificial Intelligence (AI) in almost all the domains but for a long time the real estate industry was quite slow in adopting data science and machine learning for problem solving and improving their processes. However, things are changing quite fast as we see a lot of adoption of AI and ML in the US and European real estate markets. But the Indian real estate market has to catch-up a lot. This paper proposes a machine learning approach for solving the house price prediction problem in the classified advertisements. This study focuses on the Indian real estate market. We apply advanced machine learning algorithms such as Random forest, Gradient boosting and Artificial neural networks on a real world dataset and compare the performance of these methods. We find that the Random forest method is the best performer in terms of prediction accuracy.*

*Keywords: AI , Data science, Housing Price, Machine learning , PropTech, Real Estate.*



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**MOLECULAR CHARACTERIZATION AND ANTIBIOTIC RESISTANCE PATTERNS OF  
VIBRIO CHOLERAЕ ISOLATED FROM ORNAMENTAL GOLD FISH (CARASSIUS AURATUS)**

**Muralidharan Velappan**

Research scholar, Department of Marine Microbiology, AMET University, Chennai

**Deecaraman Munusamy**

Dean/Senior Professor, Department of Biotechnology, Dr. M. G. R Educational & Research Institute,  
Chennai

**Saritha Valsalam**

Research scholar, Department of Plant Biology & Biotechnology, Loyola College, Chennai

**ABSTRACT**

*The main objective of this study was to determine the presence and density as well as the antibiotic profile of Vibrio cholerae bacterium isolated from ornamental gold fish (Carassius auratus). A total of 175 ornamental gold fish (Carassius auratus) were analyzed for the presence of V.cholera. Infected and moribund gold fishes were collected during the period between January 2020 and October 2020 at a local breeding farm in Chennai, Tamilnadu. The obtained samples were confirmed by polymerase chain reaction-plating on TCBS agar methods, V.cholerae was detected in 55 samples and V. cholerae O139 was detected in 14 samples, with a density ranging between < 3.5 to 85.0 MPN/g and < 3.5 to 11.3 MPN/g respectively. The isolated V.cholerae was further subjected to antibiotic susceptibility test in Mueller-Hinton agar using disc diffusion method of 10 different antibiotics and the results interpreted as per the Clinical and Laboratory Standards Institute guidelines. All the V. cholerae isolates evinces highly resistant to Penicillin, Amoxycylav, Kanamycin and Cefotaxime when compared with other antibiotics used in this study, The MAR index values of 0.2 to 1.0 indicates that the isolates were exposed to high risk sources in the environment. This study recommends aquarium fish may disseminate the bacteria in the aquatic environment and may transfer it to water birds that consume them. Therefore, aquarium fishes are the reservoirs of V. cholerae and may play a role in its global dissemination.*

*Keywords: Vibrio cholerae, ornamental gold fish, molecular characterization, antibiotic resistance, public health.*

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### SUMS FORMULAS OF GENERALIZED FIBONACCI POLYNOMIAL SEQUENCE

**Vipin Verma and Priyanka**

Department of Mathematics, School of Chemical Engineering and Physical Sciences, Lovely Professional University, Phagwara, Punjab (India)

#### **ABSTRACT**

*Here, we work on some finite series of generalized Fibonacci polynomials and its first order derivatives. In the next section, extreme values have been calculated for the Fibonacci polynomials. In the last section, we represent the Fibonacci polynomials in two variables by graphs using MATLAB.*

*Keyword: generalized Fibonacci polynomials, extreme values, MATLAB.*



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**GLOBAL PUBLICATIONS RESEARCH TRENDS IN HISTOPATHOLOGY: A  
SCIENTOMETRIC ANALYSIS**

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**Natarajan Radhakrishnan**

Professor, Department of Library and Information Science Periyar University, Salem

**ABSTRACT**

*The output of the research using through scientometric methods will enable the academics and decision makers for the fruitful enrichment of funds on emerging thrust areas. Academics from different domains have witnessed the growth of scientometric studies through various media. A huge amount of funds is being invested to measure the research trends and growth in science. Data were downloaded from the web of science database. A keyword “Histopathology” has been chosen for the present study with a span of five years i.e 2014 to 2018. A total of 21340 records was analyzed bibexcel software and tabulated in excel sheet to find out the result. The average exponential growth rate was 3.67 % for the total productivity of 21340. USA, one of the G7 countries holds the first rank rather than other countries. SAARC and BRIC countries India got the first rank during the period 2014–2018. Mayo Clinic topped the list with 159 records and its total citations are 2318 of the total publications, h-Index of 24 highest in histopathology research. The highest number of citation 39770 (12.99) was average citation per article in the year 2014 followed in 2015 with 34517 (10.69) average citation. The fifteen top publishing authors with taken for the study and highest number of records was contributed by Kumar R with 30 (1.86%) total numbers of citation i.e.268 and h-index was 10.The scientometric study is concern as the most dominant method for conducting quantitative aspects of the research. The present study concluded that the consistently trend towards the developed research organization and funding agencies increased productivity in the field of histopathology.*

*Keywords: Scientometric, Citation, H-index, Histopathology, Organization, Web of Science*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****BOOK RECOMMENDATION****R. A. P. Muralitharan**

M.Sc. Data Science Computer Science & Information Technology Department, Kalasalingam Academy of Research and Education Krishnankoil, Tamilnadu, India

**ABSTRACT**

*Recommendation systems are widely used to recommend products to the end users that are most appropriate. Recommendation systems were evolved as intelligent algorithms, which can generate results in the form of recommendations to users. They reduce the overhead associated with making best choices among the plenty.*

*Now, Recommender systems can be implemented in any domain from Ecommerce to network security in the form of personalized services. They provide benefit to both the consumer and the manufacturer, by suggesting items to consumers, which motivates and increases the demand for the recommended items. Every recommender system comprises of two entities, one is user and other is item. A user can be any customer or consumer of any product or items, who get the suggestions. Input to recommendation algorithm can be a database of user and items and output obviously will be the recommendations. As in our case, inputs consist of database of customers and database of books and output denotes the book recommendations.*

*This book recommendation helps to buy the books online or offline as a stronger tool which recommend books that are of buyer's interest. This system uses features of collaborative filtering to produce efficient and effective recommendations. Collaborative recommendation is probably the most familiar, most widely implemented and most mature of the technologies. Collaborative recommender systems aggregate ratings of objects recognize commonalities between users based on their ratings and generate new recommendations.*

*Keywords—Collaborative filtering, Content based filtering, Recommendation system*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****PERFORMANCE EVALUATION OF NINE AND EIGHT SWITCH BASED UNIFIED POWER  
QUALITY CONDITIONER FOR ENHANCING THE QUALITY OF POWER USING  
INTELLIGENT CONTROLLER****S. Ilankannan<sup>1</sup> and Dr. R. Francis<sup>2</sup>**<sup>1</sup>Research Scholar and <sup>2</sup>Assistant Professor, Department of Electrical and Electronics Engineering,  
Annamalai University, Tamil Nadu, India**ABSTRACT**

*Research is focusing on the improving power quality in distribution system based on unified power quality conditioner device. Each converter has six switches and these switches are controlled in order to mitigate power quality issues. A nine switch UPQC topology is proposed to reduce the harmonics and some precincts such as more switching stress, high value of DC link voltage etc. Hence in this work, intelligent control methods are fuzzy, ANN, PSO based ANN implemented in this nine switch UPQC to overcome the aforementioned issues. The outcome of UPQC mainly be identified by analysing the speed and the way the compensation signals are rated accurately. The predominantly focus on improve the power quality in distribution system using flexible ac transmission system connected with grid. In order to reducing the total cost of the system, minimization of number of switches is essential. But it is a challenging task for every researcher. The topology of UPQC can be modified into nine switch topology and the results are validated for nonlinear loads, sag and swell conditions. From the results, it is concluded that PSO-ANN algorithm gives encouraging results compared to FLC and ANN controller.*

*Keywords: - Intelligent Control, UPQC, Non Linear, Load, Nine Switch*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****QUATERNARY TECTONIC REJUVENATION INDICATED BY MORPHOMETRIC STUDIES  
ALONG THE SIANG RIVER, EASTERN HIMALAYAS, INDIA****Dnyanada Salvi**

Assistant Professor, Department of Geology, K J Somaiya College of Science and Commerce, Mumbai

**Preksha Mehta**

Student, Department of Geology, K J Somaiya College of Science and Commerce, Mumbai

**ABSTRACT**

*The Siang River flows through the tectonically active Eastern Himalayan Syntaxis. This region is known for high rate of uplift and erosion that may have induced the formation of tectonic aneurysm beneath the syntaxial one. Recent studies have indicated rapid uplift of ~1 km/Ma since the 4 Ma. The uplift is centred within the Siang river valley that is bounded by ~3500 m high valley sides. Regions to the north and south of this rapidly uplifting zone do not show the same rates of tectonic movement. This has led to questions about the extent, nature and cause of the uplift. Keeping in view the relatively short response time of streams to tectonic unrest, and their ability to restructure their path to suit the dynamic landscape, streams are the best proxy to remodel the quaternary tectonics in a region. Using morphometric parameters from the Siang trunk stream and its tributaries, the following study aims to place spatial constraints on the regions undergoing dramatic changes. Results from longitudinal profiles of the Siang River and its tributaries along with their hypsometric profiles demarcate the region to the northwest of the Siang River that is witnessing an extreme change in its equilibrium at least since the Quaternary. Datasets for specific stream power, concavity index and steepness index also corroborate with this result while also indicating recent change in steady-state conditions along the trace of the Main Boundary Fault further to the south. The study presents evidence to argue for tectonic rejuvenation in the Late Quaternary along these regions brought about by the ongoing compressive plate tectonics.*

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### TOURISM MANAGEMENT

**Johns Vincent**

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**Aayushi Desai**

Student, Marketing, Chetana Hazarimal Somani college of commerce & Eco., SMT. Kusumati Chaudhari  
College of Arts, Self Financing Courses , Bandra (E), Mumbai

### ABSTRACT

*This paper reviews the significance of tourism management in tourism sector to emphasize the fact that effective management is inevitable for acquiring productive and outstanding results in any business. To understand it fully it is necessary to analyse not only the the main elements involved in the management of tourism such as planning, marketing and operating but also, the influence of tourism management over the ethnic, societal and financial dimensions of a country. A close study about the various types of tourism and different options available for management of tourism along with deep knowledge in the new upgrading trends of this sector can make it more easy to understand the functioning of tourism management. Eventhough, the sudden occurrence of COVID-19 pandemic have badly affected the tourism sector, it is expected that things will get back to its normal pace in coming years, because of the efforts made by both government and public. The paper concludes after a close evaluation on tourism management and it's impact on a nation along with a noting of how tourism management will make use of latest technologies in future.*

*Keywords: COVID-19, Technology, Tourism, Management, Marketing.*



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**TRANSANETHOLE PROTECTS AGAINST GLOBAL CEREBRAL ISCHAEMIA THROUGH ITS  
ANTI-INFLAMMATORY AND ANTI APOPTOTIC ACTIVITY**

**Hima Saila. M<sup>1</sup> and Santh Rani Thakur<sup>2</sup>**

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**ABSTRACT**

*Aim and objectives*

*In this research study, transanethole at a dose of 250 and 500 mg/kg p.o was investigated for its potency against Bilateral Common Carotid Artery occlusion (BCCAO) for 1 hr accompanied by 22 hrs reperfusion. Motor coordination, behavioral assessment, infarct area, brain water content, excitatory mediators, inflammatory and apoptotic markers were determined after 22 hrs of reperfusion.*

*Results*

*Trans anethole improved the motor coordination, lowered the brain water content, infarction volume and attenuated the levels of excitatory mediators. Western blotting analysis was performed to identify the proinflammatory mediators (TNF  $\alpha$ , P38 MAPK), anti-inflammatory cytokine IL 10 and apoptotic marker proteins (Caspase 3, Bcl-2 and Bax) in brain tissue. Prophylactic treatment with trans anethole significantly down regulated the expressions of TNF- $\alpha$ , caspase 3, Bax, dephosphorylated p38 MAPK and upregulated Bcl-2, IL 10 in a dose dependent manner in comparison with disease control group.*

*Conclusion*

*An anti-inflammatory and anti-apoptotic activity of transanethole protected from cerebral ischemia reperfusion injury.*

*Keywords: anti apoptotic activity, anti-inflammatory activity, cerebral infarction Ischaemic reperfusion, trans anethole, western blotting.*

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### SALES PREDICTION USING EFFECTIVE MINING TECHNIQUES

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#### **ABSTRACT**

*Data mining is extraction of hidden and predictive information from huge database; it is a strong new technology with great potential to help companies to focus on the most important information in their data warehouses. It captures the browsing behavior of users at a Company. So, proposed system is used to find most frequent combinations of item present in company. This will help in marketing and sales. This system can be used to discover interesting cross-sells and related products. The proposed system uses apriori algorithm with modification which will make algorithm more efficient. The analyst can perform data mining and extraction and finally conclude the result and make appropriate decision for company.*

*Keywords— Association rules, Apriori algorithm, Distributed data mining*



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**CHARACTERIZING THE PUBLICATIONS OF EMINENT SCIENTISTS: THE CASE OF NOBEL  
LAUREATES IN MEDICINE**

**Raashida Amin<sup>1</sup> and Dr. Zahid Ashraf Wani<sup>2</sup>**

Research Scholar<sup>1</sup> and Sr. Assistant Professor<sup>2</sup>, DLIS University of Kashmir, Hazratbal, Srinagar, Jammu  
and Kashmir

**ABSTRACT**

*Publications form the main out-put of all research works. Scientific publications serve a link between knowledge production and use (Kumaragurupari, Sieving & Lalitha, 2010). Publications from the reputed authors lay great impact on their respective fields. Thus, in this milieu current study makes an attempt to analyze the publication trends and patterns of Nobel Laureates (in the field of Medicine), to capture the overall traits and characteristics of their publications. Therefore, the study endeavours to analyze the publication productivity, citation impact and collaboration pattern of publications of Nobel Laureates.*

*The data for the study, which include various details pertaining to the article publications of Nobel Laureates of the time period 2005-2008 in the field of Medicine, were collected from the Web of Science (WoS) database, using the corresponding names of the individual Nobel Laureates which were prior traced from the Nobel Prize official website. The findings demonstrate that the prolificacy of publications is not the chief characteristic of Nobel Laureates in Medicine but for citation scores Nobel Laureates show a remarkable performance. Besides, Nobel Laureates in Medicine are mostly found to prefer collaborations in their research works.*

*Keywords: Scientometrics, Publication Productivity, Citations, Collaboration, Nobel Laureates.*

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**PHYTOTOXIC EFFECT OF LEAD NITRATE ON GREEN GRAM (VIGNA RADIATA L.)**

**T. Thiagarajan , K. Prakash, P.Munnaji , S. Karuthamma and T. Ravimycin**

Department of Botany, Annamalai University Annamalai Nagar, Chidamparam, Tamil Nadu

**ABSTRACT**

*A pot culture experiment was conducted to determine the phytotoxic effect of Pb (NO<sub>3</sub>)<sub>2</sub> on seed germination and seedling growth of Vigna radiata (L.). The seeds were treated under 2.5, 2, 7.5, 10 and 12.5 mg of lead nitrate Pb (NO<sub>3</sub>)<sub>2</sub> concentration solutions individually. Each treatment was replicated thrice in a randomized block design. Observations were complete on root and shoot length, number of leaves, total leaf area, fresh and dry weights of seedling. Phytotoxicity, tolerance index and vigour index of green gram at 15, 30, 45, 60, 75th days of seedlings. Among the results gradual increase in Pb (NO<sub>3</sub>)<sub>2</sub> concentrations under different treatments significantly leads to inhibition of seed germination and other growth parameters. Percentage of phytotoxicity showed an increasing trend with gradual increase in Pb (NO<sub>3</sub>)<sub>2</sub> concentration for the green gram seedlings. Maximum inhibition in all growth parameters and morphological parameters were recorded.*

*Keywords: Lead nitrate, Green gram, Phytotoxicity, Morphological parameters.*



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### E-COMMERCE

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#### **ABSTRACT**

*E-commerce and internet have become the daily routine of our life. It has been used by all kinds of people from rich to poor even from businessmen to even school going children. E-commerce boomed through in growth via the internet. The primary function such as buying, selling, distribution, marketing, advertisement, servicing of the product or services have been really easy with the help of the internet and other computer network.*

*Especially companies like amazon and E-bay have led their way in E-commerce. Because of these websites there was a substantial increase in the business in Western Europe and United States in 1998-2005. Also , by the growth of technology such as the smartphone and the 3G, 4G service, a person sitting in anywhere of world can accesses all the facilities to buy and sell the product. But along with these security of E-commerce is a crucial issue and there is still a lot of advancement yet to be made in these fields to ensure consumer safety.*

*Keywords: E-commerce, Trends, Effects.*



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### CSR AND ITS PERFORMANCE IN SECL: A RELATIVE STUDY

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Kota, Bilaspur (CG), India

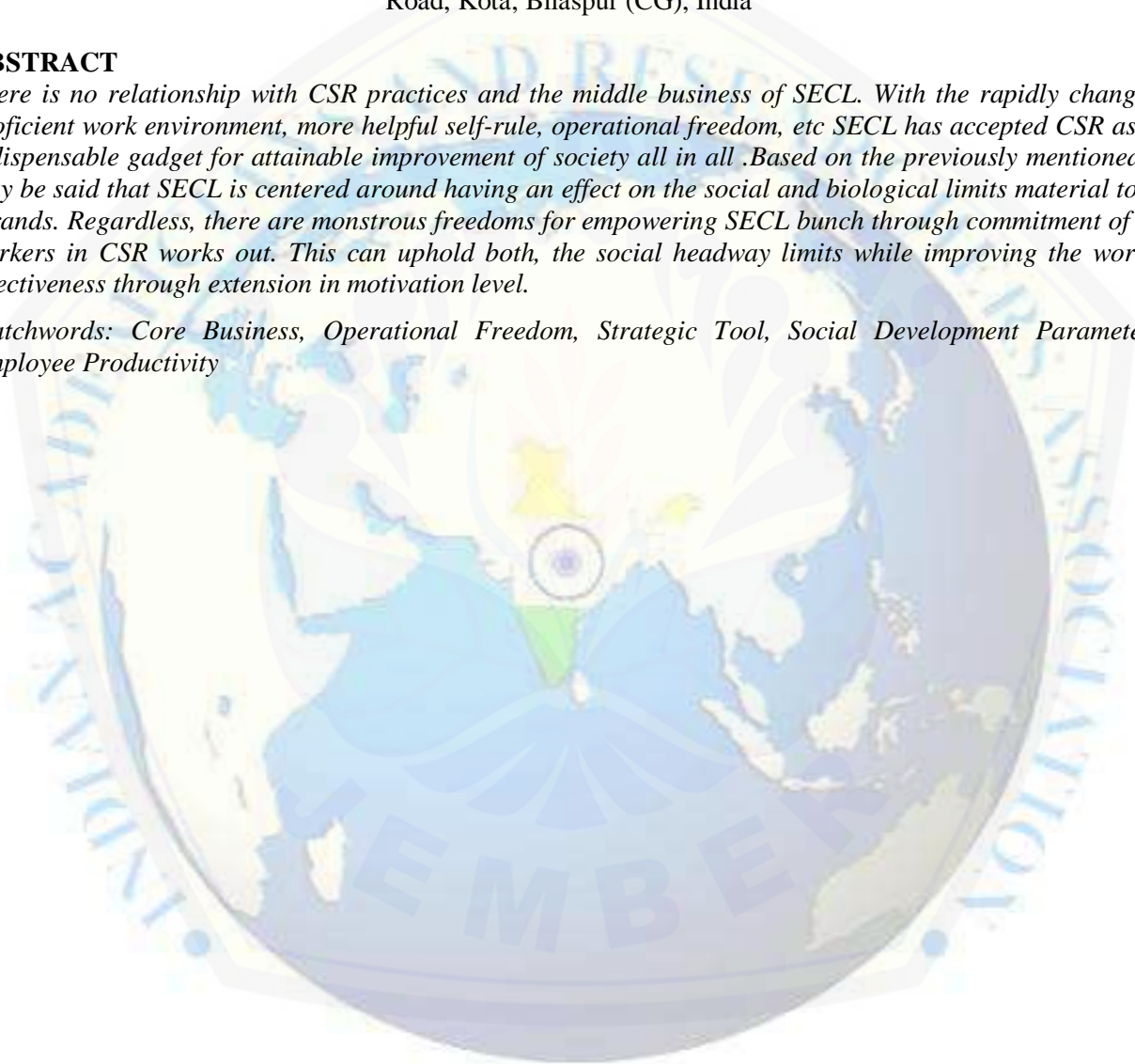
**Dr. Rajiv Harris Peters**

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Road, Kota, Bilaspur (CG), India

#### **ABSTRACT**

*There is no relationship with CSR practices and the middle business of SECL. With the rapidly changing proficient work environment, more helpful self-rule, operational freedom, etc SECL has accepted CSR as an indispensable gadget for attainable improvement of society all in all .Based on the previously mentioned, it may be said that SECL is centered around having an effect on the social and biological limits material to its errands. Regardless, there are monstrous freedoms for empowering SECL bunch through commitment of the workers in CSR works out. This can uphold both, the social headway limits while improving the worker effectiveness through extension in motivation level.*

*Watchwords: Core Business, Operational Freedom, Strategic Tool, Social Development Parameters, Employee Productivity*



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**EXISTENCE OF FIXED-POINT THEOREM IN SPACES**

**Rukhmani Kurre and S K Tiwari**

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**ABSTARCT**

*Fixed point hypothesis is a very powerful apparatus in Mathematical investigation. Its assumes a fundamental part in use of numerous parts of Mathematics. Finding a fixed purpose of contractive mappings turns into the focal point of solid examination action. There are numerous scientists who have worked in fixed point hypothesis of contractive mappings (see for example,1,2). In2 Police Mathematician Banach demonstrated a vital outcome with respect to a constriction planning, known as the Banach withdrawal rule.*



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**NETWORK FORENSIC TOOL: NMAP A PORT SCANNING TOOL****Vikas Punia**

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**Dr. Gaurav Aggarwal**

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**ABSTRACT**

Cybersecurity domain or hacking is not possible without port scanning. Anyone who wants to learn cybersecurity or hacking the all started with the port scanning. Scanning is a procedure for identifying active hosts on a Network. System administrator and an IT Security person know that Port is an endpoint of the communication where data enters into and go out from the computer. It is serious or the first point that attackers, system administrators, and security administrators looking for. Port scanning is one of the popular techniques. Attackers used to discover services they can break into. A port scan consists of sending a message to each port, one at a time. Scanning procedures port scanning return information about which IP addresses map to live host that are active on the Internet and what services it offers. Scanning is one of three components of intelligence gathering for an attacker. In the scanning phase, the attacker finds information about the specific IP addresses that can be accessed over the internet. NMAP is a security scanner used to discover open ports and services running on that port in a computer network.

Keywords: Nmap , Port Scanning, Network Scanning , Operating System fingerprinting



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**TREATMENT OF PREGNANCY INDUCED HYPERTENSION AND ITS EFFECT ON  
OXIDATIVE STRESS**

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Professor, Head of Department of Pharmacology, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi (M), Wardha

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Clinical Instructor, Child Health Nursing Department, Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi (Meghe) Wardha

**Ms. Usha Waghmare**

Associate Professor, Datta Meghe College of Nursing, Nagpur

**ABSTRACT**

*Introduction: Hypertension is the most common medical problem encountered during pregnancy, complicating 5-10% of Pregnancies. It is associated with oxidative stress, confirmed by measurement of biomarkers and relevant antioxidant enzymes in the placenta and maternal circulation. In a healthy body, Reactive Oxygen Species and antioxidants remain in balance. When the balance is disrupted toward an overabundance of Reactive Oxygen Species, oxidative stress occurs. Reactive Oxygen Species affect multiple physiological processes from oocyte maturation to fertilization, embryo development and pregnancy. Pre-eclampsia is a leading cause of maternal and paternal morbidity. It is pregnancy specific disease characterized by denovo development of concurrent hypertension and proteinuria. Objectives: 1. To assess the level of physiological parameters in blood of antenatal mothers with Pregnancy induced hypertension. 2. To monitor the treatment of antenatal mothers of Pregnancy induced hypertension. 3. To correlate the treatment of Pregnancy induced hypertension and its effects on oxidative stress with MDA and SOD estimation in antenatal mothers. Methodology: Pregnant women from AVBRH hospital, Wardha were selected for the study. The study was carried out in the department of OBGY which included total 50 patients of Pregnancy Induced Hypertension (PIH) age group of 20-40 years. Selection cases of PIH were done after assessing for BP > 140/90 mm Hg, proteinurea, edema and within 28-42 weeks of gestation. Result: MDA in pregnancy induced hypertension was 109.09±24, in preeclampsia was 130.65±43.02 and eclampsia was 141.04±50.95. SOD in pregnancy induced hypertension was 3.24±1, in preeclampsia was 2.69±1.34 and eclampsia was 2.59±1.33. Discussion: The present study was planned to detect lipid peroxidation products i.e. MDA and SOD in PIH, pre eclampsia and eclampsia. The lipid peroxidation product like malondialdehyde (MDA) levels has been measured in plasma of hypertensive pregnant women. It was found that higher O<sub>2</sub> free radical production, evidenced by increase levels of MDA in hypertensive pregnant women. The present study shows that, there is significant difference between PIH, pre eclampsia and eclampsia regarding serum MDA. Rise in MDA could be due to increased generation of ROS due to the excessive oxidative damage generated in the hypertensive patients. These O<sub>2</sub> species in turn can oxidize many other important biomolecules including membrane lipids. The lipid peroxides & free radicals may be important in pathogenesis of PIH. In similar previous study was done on pregnant women with pregnancy induced hypertension, it was found at there was a significant increase in erythrocytes MDA levels, activates of SOD, & GP level. Conclusion: The present study has shown a significant increase in serum MDA levels, the indicator of lipid peroxidation, in the 3 groups suggest that lipid peroxidation plays a role in the pathogenesis of hypertensive disorders of pregnancy. Increased lipid peroxidation causes increased consumption of antioxidant free radical scavenging system. In PIH, preeclampsia and eclampsia there is an imbalance between lipid peroxides and the antioxidant system.*

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**EVALUATION OF RESEARCH PAPERS ON PHYSIOTHERAPY DURING THE PERIOD 2016-2020: A SCIENTOMETRIC STUDY**

**Victoria. P<sup>1</sup> and Dr. P. Gomathi<sup>2</sup>**

Ph.D Research Scholar<sup>1</sup> and Assistant Professor<sup>2</sup>, Department of Library & Information Science, Periyar University, Salem, Tamil Nadu

**ABSTRACT**

*This study has examined the research output of the “Evaluation of research papers on Physiotherapy during the period 2016-2020: A Scientometric study”. The data interpreted by using software such as ‘Bibexcel tool’, VOS viewer, and tabulated using MS Excel. The results indicated that 7098 papers were published during 2016-2020 and the highest number of publications 1779(25.06%) was produced in 2020. The study also applied statistical tools such as Authorship pattern, Relative Growth Rates, Collaborative Index, Degree of Collaboration, Zips law. The trends in multi-authored papers have tremendously increased (95.73%) compared to (4.27%) single-authored papers. The relative growth rate 0.86 and degree of collaboration 0.95 is noted significantly and the highest number of 1210 records was contributed by the collaboration of four authors. It also noted that the value of the highest degree of collaboration was 0.96 in 2019 and 2020. The Maher CG author (34 records) contributed more number of papers in the domain of Physiotherapy. The Australia (1174) being the country producing more research papers followed by UK (1155). Followed by USA, Canada, and Germany, More than 400 papers had been published in Physiotherapy. The majority of authorship patterns are multi-author collaborations which is the highest contribution during the five years. Physiotherapy (837) is the most usable keyword.*

*Keywords: Authorship patterns, Bibexcel Physiotherapy, Scientometric, and Web of science.*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****AN EPQ DESIGN WITH IMPERFECT MANUFACTURING SYSTEM AND TWO BACKORDERS  
COST****M. Rameswari<sup>1</sup> and R. Uthayakumar<sup>2</sup>**<sup>1</sup>Associate Professor, Department of Mathematics, SSM Institute of Engineering and Technology, Dindigul,  
TamilNadu, India<sup>2</sup>Professor, Department of Mathematics, Gandhigram Rural Institute-Deemed University, Gandhigram,  
TamilNadu, India**ABSTRACT**

*This paper develops an economic production quantity (EPQ) design with two backorders cost and imperfect production processes, in which the setup cost and manufacturing quality are functions of capital expenditure. The mathematical model is derived to investigate the effects of an imperfect production process on the optimal production cycle time when capital investment strategies in setup reduction and manufacturing quality improvement are adopted. An efficient procedure is developed to find the optimal production run length, setup cost, manufacturing quality and backorders level considering both linear and fixed backorder costs. Additionally, this paper presents a review of the different optimization methods utilized in inventory theory. Finally, numerical example is provided to illustrate the theoretical results.*

*Keywords: Production and inventory control; Economic production quantity; Backorders; Production cycle; Imperfect production process; Investment strategy.*



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****IMPROVE THE GUEST HAPPINESS IN HOTEL'S BY CONSUMING IOT DEVICES****Mr. R. Bala Krishnan**

M.Sc., Assistant Professor, Department of Catering Science & Hotel Management, Hindusthan College of Arts and Science, Coimbatore, Tamilnadu

**Mrs. K. Pavithra**

M.Sc. (Ph.D.), Research Scholar, Department of Computer Science, Dr.G.R.D.College of Science, Coimbatore, Tamilnadu

**ABSTRACT**

*The Indian Hotel Industry in the recent past has shown growth at a fast pace, which could be accorded to increase in disposable income, growth in tourism not only from foreign countries but also within the country, permission for FDI in hotel industry, change in spending habits of people, various government initiatives to boost tourism, etc. The aim of this research was to look at the emergence of wearable technology and the internet of things (IoT) and their current and potential use in the hotel industry. There is a wide and ever-expanding range of wearable's, devices, apps, data aggregators, and platforms allowing the measurement, tracking and aggregation of a multitude of lifestyle measures, information and behaviours. The use and application of such technology and the corresponding richness of data that it can provide brings the health and care insurance market both potential opportunities and challenges. It is clear though that technology is only part of the solution, on its own it won't engage or change behaviours and insurers will need to consider this in terms of implementation and goals. But it must be remembered that with change in life style and standard of living, it is indeed a tough task for the hotels to live up to the demands and expectations of their customers belonging to diverse cultures. In order to be successful in the market it is not sufficient to attract new customers but hotels must concentrate on retaining existing customers through effective services and gaining their loyalty. In hotel industry customer satisfaction chiefly depends on quality of service. Hence, exploring the importance for customers of hotel attributes in hotel selection are indispensable and more important is to find out the areas where they can enable their customers to experience wow elements. This paper traces the factors which allow the customers to experience wow element which could be achieved by filling the gap between customers' expectations and hotel's service attributes. The findings of the research are intended to assist hoteliers to concentrate on customer satisfaction through effective strategies for providing tangible and intangible services as well as thriving for good customer relationships management. This business case model and product development journey, over which they can build up their understanding and interpretation of the data that this technology can provide.*

*Keywords: Wearables; Internet of Things; Customer satisfaction and needs, Technology*

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### PLACEMENT DRIVE APPLICATION USING PEGA

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Department of Electronics and Communication Engineering, Rajalakshmi Engineering College

#### ABSTRACT

*Training and Placement Cell is an important part of any educational institute, in which most of the work till now is being done manually. Hydra, an application that provides on demand placement services is using a special initiative called as Placement Application. This application will provide placement services for colleges, to conduct tests and also the partners meet. The entire process would be automated and it was developed using PEGA version 8.3.*



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****IMPROVING HEALTHCARE RECORDS IN SENSITIVE PATIENT e-DATA ACCESSIBILITY  
USING BLOCKCHAIN BASED HEALTHCARE SYSTEM****Smt. S. Kanagasankari<sup>1</sup> and Dr (Smt). V. Vallinayagi<sup>2</sup>**<sup>1</sup>Research Scholar, Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli, Tamil Nadu<sup>2</sup>Associate Professor, Department of Computer Science, Sri Sarada College for Women (Autonomous),  
Tirunelveli**ABSTRACT**

*Blockchain technology is the one of the greatest key inventions in the field of information technology. Healthcare data is the patient's most sensitive and confidential data information system. Strong authentication procedures are required to manage this healthcare data accessibility. The use of blockchain technology in the healthcare industry enables monitoring of patient's medical records, device tracking, referral databases and the operating system of the healthcare database. Analysis of blockchain research is conducted in this systematic review. Its purpose is to identify applications, challenges and possible directions of the healthcare sector in blockchain research. In this context it is imperative to select the most effective blockchain framework for secure and trustworthy EHR in the healthcare sector. Healthcare sector requires an accurate algorithm to estimate the impact of the various blockchain consensus models available for it future. In this paper we review current developments in the healthcare sector by implementing the blockchain as a model.*

*Keywords: Consensus Algorithms, Challenges, Electronic Health Record, Framework, Opportunities*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****MAGNETORHEOLOGICAL FLUID-A REVIEW****Manpreet Singh<sup>1</sup>, Amrinder Singh Uppal<sup>2</sup>, Gaurav Kumar<sup>3</sup>**<sup>1,3</sup>Asistant Professor, Baba Farid College of Engineering and Technology, Bathinda, Punjab<sup>2</sup>Mechanical Engineer, Holland Grove Ct, Cypress Texas, USA-77433**ABSTRACT**

*Magnetorheological fluids are a smart fluid, this fluid is combination of the suspension of fine, non-colloidal, low-coercivity ferromagnetic particles in a base or carrier fluid. These fluids are controllable fluid which control by the viscosity of the fluid, which have control by application of magnetic field. Application of magnetic field converts the liquid phase of the fluid into the semi solid, which generates the yield stress of the fluid. MR fluid fulfil the important performance criteria such as low initial viscosity, high shear upon the application of the magnetic field, low hysteresis, low power consumption, temperature stability, and fast response. The unique nature of MR fluids has made them suitable for semi-active energy-dissipating applications in particular. In this paper highlight the general principles of MR fluids, their rheology, and critical parameters are discussed and also the mechanisms governing the MR effect are characterized. For a more in-depth review of modelling efforts, compositions and the influence of critical parameters are also discussed in this work.*

*Keywords: - MR fluid, Materials, Rheological properties, Structure*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****DEVELOPMENT OF NON-TOXIC LEAD-FREE SOLDER FOR ELECTRONIC INDUSTRY****Arshdeep Singh Kalsi, Gaurav Garg and Manpreet Singh**

Asistant Professor, Baba Farid College of Engineering and Technology, Bathinda, Punjab, India

**ABSTRACT**

Global concern over the environmental impact and health effects of lead (Pb) based solder in consumable electronic has led to development of Pb-free solders alternatives. The development of new Pb-free solder and composites especially with Tin (Sn) base is of recent interest for the researchers around the world. In the present work a nontoxic binary Pb-free Sn-9Zn solder alloy was developed successfully by melting and casting. The cast ingot was drawn into solder wire. Microstructural characterization of solder was carried out using optical microscope. The elemental analysis was carried out using X-ray flourocense technique. XRD analysis was performed to determine the phases present in the solder. Differential scanning calorimeter (DSC) was used to determine the melting temperature [3]. The performance of this solder was compared with the commercially available Sn-9Zn solder of similar composition as well as Pb bearing solder. Sn-Zn solder alloy has drawn more and more people's attention for its relatively low melting temperature and superior mechanical properties in the room temperature. But some properties like wettability, oxidation and corrosion resistance can be improved by alloying another element such as Pr, Ce, Cu, Al, Ag, Bi etc.

*Keywords: - Lead free, tin-zinc, oxidation resistance, wetting properties, tensile properties*



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**A NOVEL FRAME WORK FOR TASK SCHEDULING ALGORITHMS IN MOBILE EDGE  
COMPUTING**

**S.M. Muthukumari<sup>1</sup> and Dr. E. George Dharma Prakash Raj<sup>2</sup>**

<sup>1</sup>Research Scholar and <sup>2</sup>Associate Professor, Computer Science Department, Bharathidasan University,  
Trichy

**ABSTRACT**

*Mobile Edge computing (MEC) is a principle of network architecture that allows the capabilities of cloud computing. MEC's important concepts push the associated activities closer to the mobile user. The basic technology in MEC is all incoming tasks to be send to the nearest base station. And there are several challenges in Mobile Edge Computing they are Task Distribution, Content Offloading, Resource Allocation, Execution Time etc., these challenges can be carried out through the Enhanced Task Scheduling Algorithms. In this paper, we give a novel, efficient and distributed framework for Task Scheduling in Mobile Edge Computing and Resource utilization of the task. And this framework has efficient performance of the given task.*

*Keywords: Cloud Computing, Mobile Edge Computing, Task Scheduling Algorithms.*



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**STUDIES OF FORMATION CONSTANTS OF THE COMPLEXES OF SUBSTITUTED  
THIAZOLYL SCHIFF'S BASES PH-METRICALLY WITH SOME LANTHANIDE METAL IONS  
IN 70% ETHANOL – WATER MIXTURE**

**Dr. R. S. Talegaonkar**

Assistant Professor, Department of Chemistry, Mahatma Fule Arts, Commerce and Sitaramji Chaudhari,  
Science Mahavidyalaya, Warud, Amravati

**ABSTRACT**

*The Present work is undertaken to make a systematic solution study of the complex formation of La(III), pr(III) and sm (III) with 2-[3-(4-methoxy phenyl)-1-(4-phenyl-thiazol-2-ylimino)-allyl]-phenol. And 2-[3-phenyl-1-(4-phenyl-thiazol-2-ylimino)-allyl]-phenol. have been determined by the pH-metric method in media of 70% ethanol -water mixture at 0.1 M ionic strength and at (30 ± 0.1)°C temperature.*

*Keywords: thiazolyl substituted Schiff's bases, pH-metric study, La(III), Pr(III), Sm(III), Metal-ligand stability constants.*



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****FUZZY PARAMETRIC INVENTORY MODEL FOR ECONOMIC PRODUCTION CYCLE WITH  
IMPERFECT PRODUCTION PROCESS****R. Vithyadevi<sup>1</sup> and K. Annadurai<sup>2</sup>**<sup>1</sup>Research Scholar, Mother Teresa Women's University, Kodaikanal & Assistant Professor, Department of Mathematics, SSM Institute of Engineering and Technology, Dindigul<sup>2</sup>Assistant Professor, Department of Mathematics, M.V. Muthiah Government Arts College for Women, Dindigul**ABSTRACT**

*This paper focuses on an economic production cycle model with imperfect production process costs in fuzzy environment. In many factual situations, the goal and constraint function of the decision-makers are approximately in nature. Therefore the coefficients, indices, goal function and constraint are assessed in fuzzy environment. In this paper the crisp model transformed to parametric fuzzy model is established by geometric programming technique. In parametric fuzzy model, the nearest interval approximation method transfers triangular fuzzy number to an interval number, and then the interval number transfers to a parametric interval-valued functional form. Geometric programming technique is used to find the solution of the parametric fuzzy model. The proposed model can help decision-makers to get the optimal outcomes according to their expectation. Finally, a numerical example and graphical representations are provided to demonstrate the theoretical outcomes.*

*Keywords: geometric programming, minimum total annual cost, optimal production cycle, parametric fuzzy model, triangular fuzzy number.*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****COMPARISON OF KNOWLEDGE REGARDING LEUCORRHOEA AMONG WOMEN IN  
SELECTED URBAN AND RURAL AREA****Ms. Archana S. Teltumbde**

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Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi Meghe, Wardha,  
Maharashtra, India

**Ms. Prachi Choudhari<sup>2</sup>, Airin David<sup>3</sup>, Bhagyashri Dhenge<sup>4</sup>, Sonal Dhobe<sup>5</sup> and Shubham Dhole<sup>6</sup>**

<sup>2-6</sup>Basic B.Sc. Nursing Students, Smt. Radhikabai Meghe Memorial College of Nursing Datta Meghe  
Institute of Medical Sciences (Deemed to be University), Sawangi Meghe, Wardha, Maharashtra, India

**ABSTRACT**

*Introduction: Leucorrhoea, vaginal discharge is a universal problem of all women, it is a condition of persistent and excessive vaginal discharge. Vaginal discharge is a common complaint, among women in Asia. Female genitals are very much prone to infections since they are moist, more sweaty and covered. Women may complaint of a clear white or mucoid discharge other prior to menses or at mild cycles. This is catarrhal discharge from the mucus membrane of the female genital tract. It is commonly known as white discharge*

*Aim: To comparison the knowledge regarding leucorrhoea among women in selected urban and rural area. Materials and Methods: OBJECTIVES OF THE STUDY 1. To assess the existing knowledge of leucorrhoea among general women in urban area. 2. To assess the existing knowledge of leucorrhoea among general women in rural area. 3. To compare knowledge regarding leucorrhoea among urban and rural area. ASSUMPTIONS 1. Urban and rural women may have some knowledge regarding leucorrhoea. 2. Urban and rural women may have some interest to know leucorrhea. VARIABLES - Demographic variables - Age, Religion, Education, Marital status, dietary pattern, family type and parity- Research variable - Knowledge among women regarding leucorrhoea SAMPLE SIZE: Sample size consist of 100 women between 18-40 years of age residing in selected urban and rural area. SAMPLING TECHNIQUE Convenient sampling technique was used to select the sample for the present study. Inclusion Criteria for the sampling 1. Women of 18-40 years who are willing to participate. 2. Women available during data collection. 3. Women who are able to read and write in Marathi. Exclusion criteria for sampling 1. Women who are critically ill. 2. Health personnel. 3. Women who attended similar workshop. METHOD OF DATA COLLECTION The structured questionnaire was used to collect the data required for the study.*

*Result: The study was conducted among women residing in selected urban and rural area in order to compare knowledge regarding leucorrhea. After the completion of study it has been revealed that women residing in urban area has more knowledge as compare to women residing in rural area. In this study, in comparison of urban women the mean score was 10.96 and in comparison of rural women the mean score was 8.6 respectively. Also mean percentage of knowledge score of urban and rural women was 21.96% and 17.25% respectively. The calculated 't' value was 1.978. The calculated 't' value was much higher than the tabulated value at 5% level of significance which is statistically acceptable level of significance. In addition the calculated 'p' value for knowledge score regarding leucorrhea was 0.05 ( $\geq 0.05$ ).*

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**TO ASSESS THE EFFECT OF BREAST FEEDING SELF EFFICACY INTERVENTION ON  
PRIMIPAROUS MOTHERS**

**Ms. Kavita J. Gomase<sup>1</sup>, Ms. Pooja Kasturkar<sup>2</sup>, Ms. Bali Thool<sup>3</sup> and Ms. Archana Teltumbde<sup>4</sup>**

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<sup>3</sup>Assistant Professor, Department of Obstetrics and Gynaecology Nursing, Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi Meghe , Wardha ,Maharashtra, India

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**ABSTRACT**

*Background: Breastfeeding is long recognized as a popular form of feeding during the first year of life (American Academy of Pediatrics, 1997). Despite the obvious benefits of breastfeeding to mother and child, breastfeeding rates in many parts of the world and in India tend to stay below the recommended levels. There have been many research studies in which trust in breast feeding has been shown to be an important factor in early initiation, productive establishment and continued breastfeeding. A longitudinal retrospective analysis of 64 low-income mothers in the United States reveals that trust in breastfeeding is correlated with early termination of breastfeeding rather than perceived problems. Methods and Material: This study was based on the application of Pre experimental-One Group Pre post test design. This study includes 60 samples. Used for purpose sampling technique. A tool is a data collection tool or equipment used by Breast Feeding Self – Efficacy Scale. There have been two sections that are primigravida woman's demographic information and breast feeding self – Efficacy Scale.*

*Results There is a significant difference between pretest scores and posttest knowledge scores that interpret effective breast feeding self-efficacy breastfeeding intervention. The mean pretest value is 95.83 and the posttest value is 129.80, and the standard pretest deviation value is 30.03 and the posttest value is 20.419. Conclusion: T-value is calculated at 8.502 and p-value is 0.000. Therefore it is interpreted statistically that breast feeding self-efficacy intervention on breastfeeding has been successful..*

*Keywords: Impact, breastfeeding self-efficacy breastfeeding intervention, mothers primiparous.*

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**MAGNETORHEOLOGICAL FLUID AND ITS APPLICATIONS**

**Manpreet Singh<sup>1</sup>, Arshdeep Singh Kalsi<sup>2</sup>, Gaurav Garg<sup>3</sup>, Tejinderpal Singh Sarao<sup>4</sup>, Gurjant Singh<sup>5</sup>  
and Kovid Sharma<sup>6</sup>**

<sup>1,3,4,5,6</sup> Asistant Professor and <sup>4</sup>Professor, Baba Farid College of Engineering and Technology, Bathinda,  
Punjab, India

**ABSTRACT**

*Magnetorheological suspensions are smart and complex fluids which show their behavior from liquid to solid is dependent the on off state of the current to the MR fluid. The basic mechanism of transformation is the attractive dipolar forces between the particles which have been created by magnetic field. The formation of particles chains throughout the fluid is the occurrence of the strength of the magnetorheological fluid. This paper represents the overview of the MR fluid and also examines the forces (hydrostatic, hydrodynamic, dipolar, magnetization) which play important role in the solid form of the fluid. These forces help to understand the rheology of the MR fluid. This article explains the working modes of the MR fluid and latest applications of the magnetorheological fluid.*

*Keywords—Smart fluid, Rheology, Carbonyl iron particles, Abrasive particles.*



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**MOLECULAR DOCKING OF PHYTOCOMPOUNDS AGAINST DENGUE NS2B/NS3  
PROTEASE: A STUDY FROM VIRTUAL PERSPECTIVE**

**Maheswaran Baskaran<sup>1</sup> and Joseph Sebastinraj<sup>2</sup>**

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<sup>2</sup>Assistant Professor, Research Department of Biotechnology, Jamal Mohamed College (Autonomous), Tiruchirappalli, Tamil Nadu, India

**ABSTRACT**

*Dengue virus is a growing problem in tropical countries. Dengue virus (DENV) infection is an important arthropod - borne viral infection infecting about 2.5 billion people worldwide. To overcome these problems, the present study was undertaken to investigate the antiviral activity of compounds present in the ethyl acetate leaf extract of Aegle marmelos against non-structural protein of dengue virus (DENV) using molecular docking study. The active plant extracts were also purified and characterized by GC-MS. An In silico approach was undertaken to report the antiviral (dengue) activity of mined 12 phytochemical compounds from the leaf extract of Aegle marmelos against potential dengue target NS2B-NS3 Protease in comparison to the docking studies with existing five anti viral (dengue) drugs. The energy minimized 3D structures of selected twelve compounds were docked with NS2B/NS3 protease using i-GEMDOCK 2.1 docking software. Out of screened 12 phytochemical compounds Marmeline, O-halfordinol-1 and Aegelenine were inferred as the best compounds based on their binding affinity, drug likeliness, ADMET property and toxicity. Hence, based upon our results we would like to suggest for further analysis of these phytochemical compounds to confirm their efficacy and to evaluate their anti viral drug potency.*

*Keywords: Aegle marmelos , anti viral drug , Dengue virus, i-GEMDOCK 2.1 , NS2B/NS3 protease*

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### PASSENGER'S PERCEPTION ON ONLINE SERVICES OFFERED BY SOUTHERN RAILWAYS WITH SPECIAL TO REFERENCE OF VIRUDHUNAGAR DISTRICT

**Mrs. D. Mahalakshmi**

Part time Ph.D. Scholar, The Standard Fireworks Rajaratnam College for Women, Sivakasi

#### **ABSTRACT**

*Among the various public transportation services, Railways is one of the important modes of transport. The Indian Railways provides services both in onboard and at stations. Indian Railways also provides online services to its passengers. Now a day's online services play vital role in every field. Online service is nothing but, it is an organization that provides an information service over the Internet. The rapid growth of the travel industry requires sophisticated information technologies (ITs) for managing the increasing volume and quality of travel traffic. The emergence of new travel services and products, coupled with a rapid increase in travel demand, has driven the wide-scale adoption of ITs in general, and in particular, the Internet as an electronic intermediary. In other words, the Internet serves as a new communication and distribution channel for e-travelers and suppliers of travel services and products. The researcher has emphasized the passenger perception of online services offered by southern railways.*





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**SOME PROPERTIES OF BI-VARIATE BI-PERIODIC LUCAS POLYNOMIALS**

**Ankur Bala**

Department of Mathematics, Lovely Professional University, Phagwara, Punjab

**Vipin Verma**

Associate Professor, Department of Mathematics, Lovely Professional University, Phagwara, Punjab

**ABSTRACT**

The generalisation of Fibonacci sequence introduced by Edson in 2009. After the generalisation of Fibonacci sequence, Bilgici introduced generalized Lucas sequences. In 2016, Yilmaz and Coskun introduced generalisation of Fibonacci and Lucas polynomials which is known as bi-periodic Fibonacci polynomial and bi-periodic Lucas polynomials. In 2020, Verma and Bala defined bi-variate bi-periodic Fibonacci polynomials. Now, We have defined Bi-variate Bi- periodic Lucas polynomials for  $n \geq 2$  with initial conditions  $l_0(x,y)=2, l_1(x,y)=a_2 x$  by the recurrence relation  $l_n(x,y)=a_1 [xl]_{(n-1)}(x,y)+yl_{(n-2)}(x,y)$  if  $n$  is even and  $l_n(x,y)=[a_2 xl]_{(n-1)}(x,y)+yl_{(n-2)}(x,y)$  if  $n$  is odd. We have obtained generating function for defined polynomial and found  $n$ th term of the  $l_n(x,y)$ . Investigated relationship between Bi-variate Bi-periodic Fibonacci and Bi-variate Bi- periodic Lucas polynomials. We derived some most popular identities like Cassini's identity, Catalan's identity, d'Ocagne's identity and binomial sum. Convergence of two successive terms of Bi-variate Bi-periodic Lucas polynomial  $l_n(x,y)$  is also discussed.

**Keywords:** Bi-variate Bi-periodic polynomials, Binet's formula, Cassini's identity, Catalan's identity, Generating function



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****A SUPERVISED LEARNING NEURAL NETWORK BASED APPROACH FOR IMAGE  
SPLICING****\*Kavita Rathi and Parvinder Singh**

Faculty, CSED, Deenbandhu Chhotu Ram University of Sci. &amp; Tech., Murthal, Sonipat, Haryana

**ABSTRACT**

*An efficient supervised learning approach for splicing forgery detection with low classification error rates is proposed in this work. Existing Literature is analysed to produce the research gap and PCA is used for feature extraction to make the detection process fast and intelligent. As PCA is the process of dimension reduction without eliminating the significant information from the image. Canny edge detection is used to detect strong edges in the image. . Back propagation neural networks Model for classification is trained by feeding dataset images. A benchmark dataset CASIA V2 is used for evaluating performance of proposed algorithm. The images are then tested for authenticity, whether the image is forged or authentic. Then the performance is evaluated by using parameters like precision, Recall and Mean Square Error. Proposed approach is able to increase the accuracy with low classification error rate while the existing work takes the optimal value to get their required result. Simulation results for the proposed algorithm are presented.*

*Keywords: Neural network, image forgery detection, dataset, edge detection, feature extraction, authenticity*



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**INSIGHTS INTO ENHANCING MEANINGFUL LEARNING EXPERIENCES IN HIGHER  
EDUCATIONAL INSTITUTIONS**

**Prof. A. Suryanarayana**

Former Dean, Faculty of Management, Osmania University Hyderabad, Telangana State

**Dr. B. Mohan Kumar**

Principal, Badruka College of Commerce & Arts

**ABSTRACT**

*In Higher Educational Institutions (HEIs), educators are perpetually confronted with the challenge of making a meaningful and lasting learning experience for the student-learners. In this context, it becomes an imperative to create connections between the learning odyssey and their respective lives. To make education truly purposeful, two critical conditions to be fulfilled are (i) acknowledgement of the fact that meaningful knowledge must be valued and (ii) an acceptance of the linkage between education and its impact on human lives to make a positive difference. Demonstrating the influence of invaluable knowledge in human life is critical in making education meaningful. Fostering curiosity, critical thinking, and imagination make learning satisfying as well. Connecting the content with its meaning and to make learning 'stick', self-testing should replace forthwith rote memorization and rut learning. Immersive teaching-learning process and pedagogical techniques should facilitate memory and effective application of learning received by the students.*

*Examining the theoretical paradigms becomes a necessary preliminary for stimulating critical thinking in the minds of the learners that would be of immense use later in their careers. In a knowledge ecosystem model, we need to accept and appreciate the distinction between 'education' and 'learning'. Helping the learners function better in future should ideally remain the overarching goal of learning. Learning experiences are required to be designed by involved students to ensure that the learning outcomes are dovetailed with lesson objectives and are grasped by the students through an immersion process. They assist students in understanding where they want to go in life and how they want to make a difference.*

*An attempt is made in this Paper to suggest ways and means to the educators to effectively navigate the classroom so that comprehension and learning are enhanced and meaningful learning experiences are gained by the students using their prior knowledge and personal experience.*

*Key Words: Education vs. Learning, Higher-education Institutions (HEIs), Teaching-Learning Process, Learning experiences.*

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### TRANSFER FUNCTION AND SOLUTION OF DIFFERENT MECHANICAL AND ELECTRICAL SYSTEM IN CONTROL ENGINEERING BY NEW INTEGRAL TRANSFORM

**Mohmed Zafar Saber**

Assistant Professor, Department of Mathematics, Kohinoor Arts, Commerce and Science College Khultabad, Dist- Aurangabad (MS), India

**Sadikali L. Shaikh**

Associate Professor Department of Mathematics, Maulana Azad Arts, Commerce and Science college, Dr Rafiq Zakaria Campus, Aurangabad, 431001 (MS), India

#### ABSTRACT

*In order to find the time response of a Mechanical and electrical system it is necessary to form and solve the differential equations. By using Sadik Transform we convert time domain (or 't') to Sadik domain (or ) then we solve equations in terms of which is very easy to solve, lastly we apply Inverse Sadik Transform to get solution in terms of t.*

*Keywords: The Sadik Transform, inverse Sadik Transform, Control Theory, Mechanical and Electrical System, Linear Differential Equations of different Order.*



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### CLIMATE CHANGE AND ITS EFFECT ON FISH DIVERSITY OCCURRING IN THE MAJOR WATER BODIES OF RAJENDRAGRAM, DISTRICT ANUPPUR, MADHYA PRADESH.

**Sonoo Gupta and Dr. Pratibha Pandey**

Research Scholar & Professor of Zoology Department of Zoology, Dr. C.V. Raman University, Kargi Road,  
Kota, Bilaspur (C.G.)

#### **ABSTRACT**

*Biodiversity is essential for balancing ecosystem and facing varied problems to environment. Globally nature as well as animal diversity is affected due to increase in unwise anthropogenic activities. Aquatic ecosystem is also adversely affected due to release of wastes in it. In the field of Ichthyology there is valuable contribution by many workers. As for as economic importance is concerned, the scope of fish and fisheries in MADHYA PRADESH is of prime interest.*

*The current study intends to provide an overview of fish diversity of four sampling sites at RAJENDRAGRAM region. The fish diversity is correlated with biological and various physic-chemical parameters that regulated the productivity and distribution of different species of fishes. The fish population is abundant and majority of fishes are exploited for human consumption. In current studies, attempts have been made to collect, classify and identify fish of four sampling sites of RAJENDRAGRAM.*

*Keywords: Fish diversity, RAJENDRAGRAM, ANUPPUR DISTRICT*



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**AN IN-SILICO INVESTIGATION OF NATURAL COMPOUNDS DERIVED FROM MIMOSA  
PUDICA AS POTENTIAL THERAPEUTIC CANDIDATE AGAINST MUMPS VIRUS**

**Jitendra Sasumana and Nillohit Mitra Ray**

Department of Biotechnology, School of Bio-engineering and Biosciences, Lovely Professional University,  
Punjab, India

**ABSTRACT**

*Mumps is a viral disease, which causes respiratory illness in humans. The symptoms involve swelling of one or both the parotid salivary glands. Among all the viral surface proteins in Mumps, the hemagglutinin-neuraminidase, MuV-HN, has a vital role in the entry of virus into the host cells and causing infection. Therefore, MuV-HN can be used as an ideal target in designing of novel inhibitors against the virus. In a drug designing approach, the protein-ligand interaction is one of the major aspect which gives potential candidates serving as an inhibitor against the mumps virus Hemagglutinin- neuraminidase protein. By performing docking studies, a detailed analysis of the protein-ligand interaction of the active compounds of plant Mimosa pudica against the MuV-HN protein was reported. The results confirmed that for each ligand there is a consistent binding affinity with specific energy. Among all the active compounds of Mimosa pudica, riboflavin and sitosterol showed efficient docking score which are -9 kcal/mol and -10.7 kcal/mol respectively against the MuV-HN. These results depict that out of the different phytocompounds of Mimosa pudica, riboflavin and sitosterol can be used as efficient candidates in pharmacokinetic and pharmacodynamic studies in developing a novel inhibitor against Mumps virus.*

*Keywords: Mumps, inhibitors, MuV-HN, docking, Mimosa pudica*

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### IS NOSTALGIA MARKETING A GAME-CHANGER FOR TOY INDUSTRY?

Manjusha J<sup>1</sup>, Shreyashi Mitra<sup>2</sup> and Dr. Lakshmi Bhooshetty<sup>3</sup>

<sup>1,2</sup>MCom Student and <sup>3</sup>Assistant Professor School of Commerce, Finance and Accountancy, Christ (Deemed to Be University), Bangalore

#### ABSTRACT

*The current research paper aims to analyse the role of Nostalgic Emotion in not only creating a better Attitude and Attachment towards the product (here toys), but also by enhancing the purchasing intention among customers. The data for this study was collected from respondents aging from 20 years and above. The findings of this research revealed that there are no significant gender differences in the case of Nostalgic Emotion. Furthermore, the results also showed that Attitude and Attachment towards the product (toys) play as a mediating role between Nostalgic Emotion and the Purchasing Intention of the customers. It can be concluded that toy manufacturing companies can use nostalgia marketing as an effective way to attract more customers, thereby increasing its sales and profit. The results of this paper add to the existing literature on nostalgia marketing and also provides an insight into how nostalgia marketing can be considered as a better marketing tool in the Toy industry.*

*Keywords: Consumer Behaviour, Mediation, Nostalgia, Nostalgia Marketing, Purchase intention*



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### INVESTIGATING THE PRICE VOLATILITY OF METALS TRADED ON THE LONDON METAL EXCHANGE (LME)

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Bengaluru, parvathi

**Lishma K A**

MCom Student, School of Commerce, Banking and Insurance, Christ (Deemed to be University), Bengaluru,

**Lakshmi B**

Assistant Professor, School of Commerce, Finance and Accountancy, Christ (Deemed to be University),  
Bengaluru,

#### **ABSTRACT**

*This paper mainly investigates the price volatility of metals traded on the London Metal Exchange (LME). The four metals opted for examining the price volatility were Aluminium, Copper, Zinc and Tin respectively. The time period for this study was set from 2016 to 2020. The required data were collected from reliable sources for all the four metals and main tests used to generate the required results were Descriptive Statistics, Unit Root Test and Threshold Garch model. The four metals when examined came out to be stationary in nature. From the analysis done, it was found the tin metal market shows greater volatility when compared to other markets like that of the Aluminium, Copper and Zinc metal markets. In future, furthermore studies, inclusion of more metals and tests can be dealt with in order to visualize the growth of these four metals i.e., Aluminium, Copper, Zinc and Tin traded on the London Metal Exchange (LME).*

*Key words: Investors, market fluctuation, metal markets, traders, volatility*



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**AWARENESS OF UNIVERSITY LIBRARY SERVICES AND RESOURCES AMONG  
POSTGRADUATE STUDENTS OF SELECTED UNIVERSITIES OF J&K: A COMPARATIVE  
ASSESSMENT**

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**Dr. Shabir Ahmad Ganaie**

Associate Professor and Head, Department of Library and Information Science, University of Kashmir,  
Srinagar

**ABSTRACT**

*University libraries are vital organs for universities to support academics and research related activities. Effective use of resources and services of any academic library particularly university libraries will enhance the research and academic tasks. These libraries fulfil the information needs of users associated with diverse field of studies. These libraries provide the varied sources of information and different services to the users. The efficiency of academic library depends upon the awareness and familiarity of the users with different services and resources of libraries.. Therefore, the current study is an attempt to gauge the awareness of users of selected university libraries, total 4 universities were selected two state universities and two central universities from Jammu and Kashmir. Survey method was adopted to fulfil the objectives of the study and questionnaire was used as a tool for data collection. Sampling method applied was simple random sampling. The sample size was 600, equally selected from 4 universities. Data was tabulated by using widely used statistical tool SPSS. The descriptive as well as inferential statistical tests were followed to test the data, mean, median, standard deviation, comparative analysis was carried out by following one way Anova, and Post Hoc Tukey HSD- TUKEY ALPHA further Normality of data was gauged with the help of One-Sample Kolmogorov-Smirnov Test. The major findings of the study were 48 percent library users had visited library frequently. Based on the overall mean of  $\bar{x}$  1.92 and M 2.00, it can be concluded that the users are well aware about the services of concerned libraries. Further, based on the overall mean of  $\bar{x}$  1.90 and M 2.00, it can be concluded that the users are well aware about the resources of the concerned libraries. While applying comparative statistical techniques on mean scores of services and resources it was found that only current awareness service (CAS) and online public access cataloguing (OPAC) awareness were statistically significant ( $p < 0.05$ ). Furthermore, It is evident from the results that all the resource awareness parameters were statistically significant excluding Reference Books Awareness (RBA having P value greater than 0.05 ( $p = 0.055 > 0.05$ )).*

*Keywords: Library services, Library resources, awareness, university libraries, postgraduate students, J&K.*

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### DOES KNOWLEDGE MANAGEMENT ENHANCE HUMAN RESOURCE PRACTICES IN MARKETING

**Dr. V. R. Palanivelu**

Prof & Head, Department of Management Studies, Periyar University, Salem

**Dr. E. Saranya**

UPDF, Department of Management Studies, Periyar University, Salem

#### **ABSTRACT**

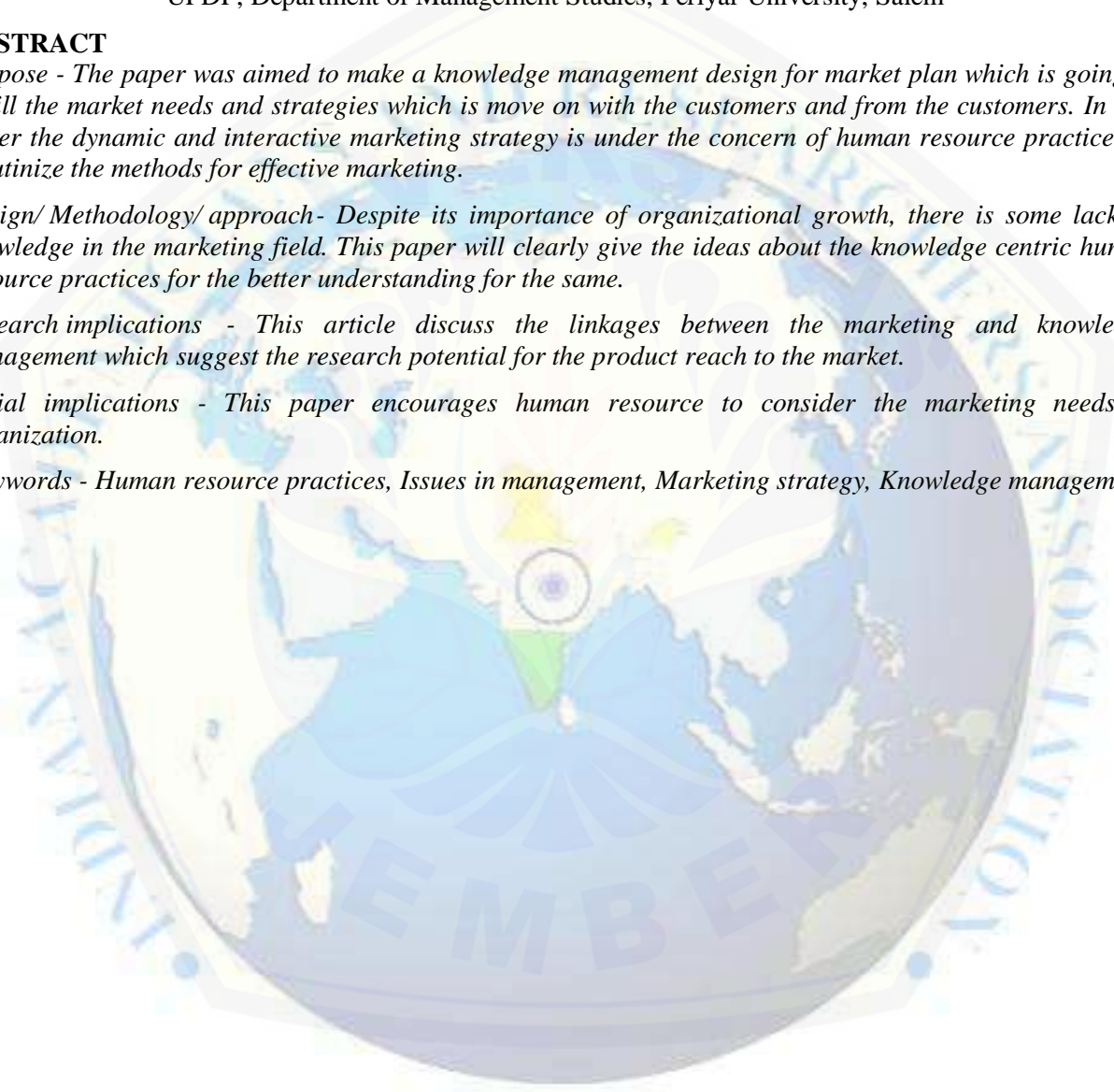
*Purpose - The paper was aimed to make a knowledge management design for market plan which is going to fulfill the market needs and strategies which is move on with the customers and from the customers. In this paper the dynamic and interactive marketing strategy is under the concern of human resource practices to scrutinize the methods for effective marketing.*

*Design/ Methodology/ approach - Despite its importance of organizational growth, there is some lacking knowledge in the marketing field. This paper will clearly give the ideas about the knowledge centric human resource practices for the better understanding for the same.*

*Research implications - This article discuss the linkages between the marketing and knowledge management which suggest the research potential for the product reach to the market.*

*Social implications - This paper encourages human resource to consider the marketing needs of organization.*

*Keywords - Human resource practices, Issues in management, Marketing strategy, Knowledge management*



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### A STUDY OF IMPACT OF RESILIENCE BUILDING COURSE ON B.ED. STUDENTS

**Dr. Priti Sonar (Dr. Priti Nagare)**

Assistant Professor, Ashoka International Centre for Educational Studies and Research, affiliated to S.N.D.T Women's University, Mumbai

#### **ABSTRACT**

*There are many major and minor challenges that every country, every state, every society and every individual has faced over a period of time especially in Covid- 19 pandemic situation. To make students ready to face challenges boldly and to make them capable to bounce back is the need of an hour thus this study was conducted with an objective to build resilience among the students.*

*“Resilience is that ineffable quality that allows some people to be knocked down by life and come back stronger than ever. Rather than letting failure overcome them and drain their resolve, they find a way to rise from the ashes.”*

*A special course for Resilience Building Course was designed under this study which included standardized online pre- test and post- test, interactive sessions, case studies and live online interactions. There were a total of 22 sessions for two months. The sample size was 31 students who are studying at a B.Ed. college. The result of the pre- test and the post- test shows the effectiveness of the Resilience Building Course.*

*If we develop resilience among the students they are ready to face challenges, they are also ready to look at the situation with a positive mindset. They start looking at problems as opportunities. This in long run will help them to live life effectively.*

*Researcher suggests that such courses need to be part of school/ college curriculum that can help students live life effectively.*

*Keywords: Resilience, Covid- 19, Resilience Building Course, Positive Mindset, Curriculum.*

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### “INVESTMENT MANAGEMENT” TO STUDY WOMEN AWARENESS TOWARDS INVESTMENT BANKING

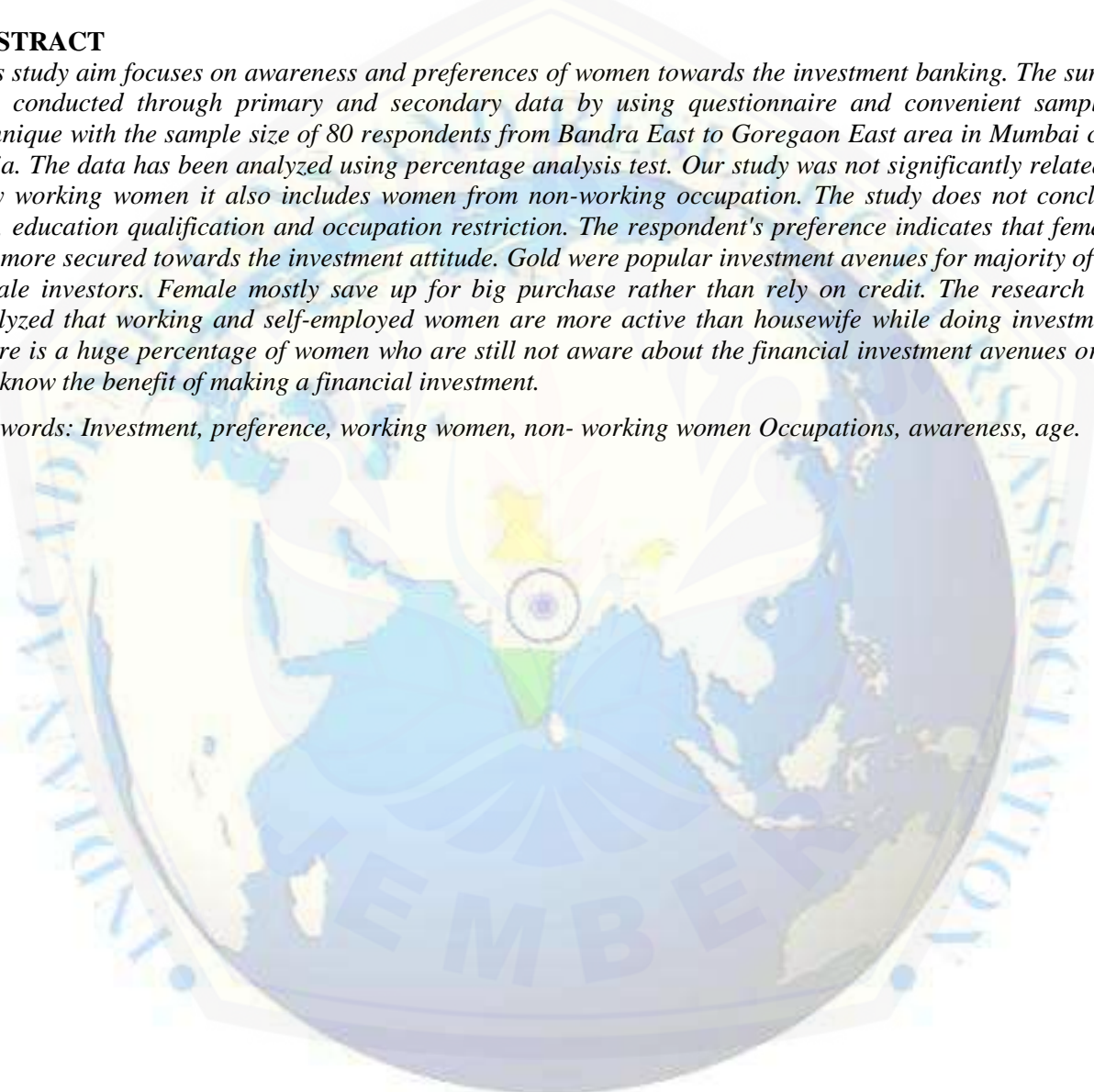
**Yash Poojari and Neha Singh**

Student (Second Year BMS), From Chetana's Hazarimal Somani College of Commerce & Eco.  
SMT. Kusumtai Chaudhari College of Arts Self Financing Course, Bandra (E), Mumbai

#### **ABSTRACT**

*This study aim focuses on awareness and preferences of women towards the investment banking. The survey was conducted through primary and secondary data by using questionnaire and convenient sampling technique with the sample size of 80 respondents from Bandra East to Goregaon East area in Mumbai city, India. The data has been analyzed using percentage analysis test. Our study was not significantly related to only working women it also includes women from non-working occupation. The study does not conclude age, education qualification and occupation restriction. The respondent's preference indicates that females are more secured towards the investment attitude. Gold were popular investment avenues for majority of the female investors. Female mostly save up for big purchase rather than rely on credit. The research has analyzed that working and self-employed women are more active than housewife while doing investment. There is a huge percentage of women who are still not aware about the financial investment avenues or do not know the benefit of making a financial investment.*

*Keywords: Investment, preference, working women, non- working women Occupations, awareness, age.*



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**ENHANCED AMBTC BASED ADAPTIVE IMAGE COMPRESSION TECHNIQUE****S.Ezilarasi and S. Vimala**

Department of Computer Science, Mother Teresa Women's University Kodaikanal, Tamil Nadu

**ABSTRACT**

*The research on the Image Compression technique is mainly focused on reducing the size of the image data, leading to a reduction in cost associated with storage and transmission of images. Block Truncation Coding is one of the lossy image compression techniques. The proposed method is a BTC based technique for enhancing the quality of the image and reduce the size to improve the coding efficiency. The adaptive and interpolative scheme based on Absolute Moment Block Truncation Coding (AMBTC) is an improved form of BTC. In the proposed method, the blocks are considered into Shade, Medium, and Edge Blocks. The bit planes generated are omitted that results in enhanced coding efficiency. The Medium and Edge blocks ordered BTC used to increase the quality of rebuilt images. This technique exhibited with typical benchmark images is Lena, Cameraman, Boat, Girl, Peppers, Zelda, Sailboat, Toys, and Gold Hill. The proposed method provides improved results compared to that of the existing BTC based techniques in terms of bpp and PSNR.*

*Keywords: AMBTC, BTC, bpp, Interpolation, Image Compression, PSNR.*



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### A BIRD'S EYE VIEW OF THE CHANGING SCENARIO OF PROGRAMMES AND POLICIES IN THE INDIAN STOCK MARKET

**Dr. S. S. Nirmala, Ms. T. Porkodi and Dr. N. Kogila**

Assistant Professor, Department of Commerce, B.S. Abdur Rahman Crescent Institute of Science and  
Technology, Chennai.

#### **ABSTRACT**

*Capital market in India has underwent radical changes in recent times. Under the liberalization policies Indian stock market is forced to follow certain improvement policies so as to compete foreign mega based MNC's and venture capital of the units. National security exchange board and Stock exchange boards of India (SEBI) played a dominant role in regulating the activities of the capital market and also safe guarding the interest of the investors of the stock market. Under the threats of global melt down and financial crisis in all over the economies, Indian stock market is in a position to follow and introduce certain modification procedures and updating the functioning system of capital market with the proper policies and programs. In this context the role of NRI investors is appreciable under the control of FERA and FEMA acts. The author focuses in this paper the need for following improvement measures on Indian capital market with some policies and program measures.*

*Keywords: Capital market – Challenges - Improvement – Issues - Policies and programs - Stock market – Trends*



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### PORTRAYAL OF PEOPLE WITH DISABILITY: A CASE STUDY OF “TIMES OF INDIA”

Medha Rajesh Mangurkar<sup>1</sup> and Shivani Kailas Bagul<sup>2</sup>

Assistant Professor<sup>1</sup> and M.Lib.I.Sc. Student<sup>2</sup>, Department of Library and Information Science, HPT Arts  
and RYK Science College, Nashik

#### ABSTRACT

*Mass media are capable to creating various kinds of impact on mankind. Print media play an important role to play as social monitor and stimulator of new idea. According to Census 2011 in India 2.21% persons are 'disabled'. This article examines portrayal of people with disability in Times of India newspaper. A content analysis was conducted on 36 news published in the newspaper from 1st April 2019 to 15th March 2020. The study found that the Times of India newspaper have a less focus on disabled persons. The analysis showed that even on the celebration of the International Day of People with Disability the coverage of disability news is not satisfactory. The majority of the news published are relating to the mental disability. There was a good use of photographs in the disability related news. The authors recommend that the press media need to cover all types of disability related news and with more frequency.*

*Keywords: People with disability, Disability, Newspaper Content analysis, Times of India, Disability and Media*



**I nternational Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By I ndian Academicians And Researchers Association on 21st February 2021****OBSERVATION AND DOCUMENTATION OF MEDICINAL PLANT DIVERSITY OF SEONI DISTRICT, MADHYA PRADESH USED IN TRADITIONAL MEDICINE FOR SKIN DISEASES****Praveen Parate and Dr. Naureen S. Khan**

Department of Botany, Dr. C.V. Raman University Kargi Road, Kota, Bilaspur (C.G.)

**ABSTRACT**

*The paper reports ethnobotanical study based on the traditional medicinal plants used by the local population for the treatment of skin diseases. The main aim of the study was to observe and document medicinal plants of Seoni district, Madhya Pradesh. In the present study exhaustive field exploration and study was conducted to survey medicinal plants originating in eight tehsils of Seoni District from November 2019 to November 2020. The ethnobotanical data was collected using field work and survey method by performing semi-structured interviews and group discussions with the traditional healers and the local population. The ethnomedicinal survey yielded documentation of 97 plant species belonging to 43 families and 90 genera. The most dominant families observed in the study were Fabaceae, Cucurbitaceae, Poaceae, Moraceae, Caesalpinaceae, Rutaceae, Apiaceae, Anacardiaceae, Zingiberaceae, Chenopodiaceae, Rosaceae, Liliaceae, Arecaceae and Malvaceae. The tribals possess tremendous traditional knowledge of medicinal plants that can be used to cure different ailments. However, urbanization and expansion on agricultural practices have become a major threat to the medicinal plants. Hence, it is of utmost importance to preserve the indigenous knowledge of herbal medicines through identification and systematic documentation. The present study also aims to document the use of traditional herbal medicines of Seoni district that are used for curing skin problems. Conservation of the traditionally important plant species with the help of local population will enhance the ethnomedicinal diversity of the place.*

*Keywords: Seoni, Madhya Pradesh, medicinal plants, documentation, Herbal medicines, conservation.*



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****PERFECT MATCHING OF AN UNDIRECTED COMPLETE GRAPH BASED ON ALGEBRAIC  
MULTIPLICITY****Jini J**Assistant Professor, Department of Mathematics, Kings Engineering College, Sriperumbudur, Chennai,  
Tamil Nadu & Research Scholar, S.D.N.B. Vaishnav College, Affiliated to University of Madras**Hemalatha S**Assistant Professor, Department of Mathematics, S.D.N.B. Vaishnav College, Chrompet, Chennai, Tamil  
Nadu & Research Scholar, S.D.N.B. Vaishnav College, Affiliated to University of Madras**ABSTRACT**

*One of the important concepts of Graph Theory is Matching Theory. Several Concepts on Matching Theory has been dealt in [1, 2, 3]. The technique of maximum matching on directed graphs have been studied in [1]. In this paper, a new approach for finding maximum matching of an undirected complete graph based on largest Algebraic multiplicity of Eigen values using exact controllability network is studied. This concept has been used for a complete graph with vertices  $[N=4,6,8,\dots,2V]_n$  for  $V_n \geq 2$  and it is proved that the maximum matching obtained is a perfect matching. It will be interest to further study on their properties.*

*Keywords: Algebraic Multiplicity, Complete graph, Graph Theory, Matching, Maximum Matching.*

*AMS Classification Key: 05C, 05C70, 911368, 15A18*

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**A NON- INVASIVE MEDICAL TOOL FOR ANEMIA DISEASE DIAGNOSIS**

**Saurabh Mitra**

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**Dr. Shanti Rathore**

Associate Professor, Department of Electronics and Communication Engineering Dr. C. V. Raman University, Kargi Road, Kota, Bilaspur (C.G.)

**Dr. Sanjeev Kumar Gupta**

Dean Academic, Rabindranath Tagore University Bhopal (M.P.)

**ABSTRACT**

*In this present era Anemia is global health problem, Anemia is a very big issue for present era. The World Health Organization (WHO) estimates that some two billion people are anemic. As per the medical science there is lots of way to detect the Anemia, but most of the approaches are based on Invasive approach. The problem with Invasive approach is require the physical contact with the device so, In this paper we discuss about the previous existing Invasive and non- invasive approaches which are based on nails eyes and hemoglobin based. Here we also did the comparative analysis and based on the analysis we find the previous . existing issues and based on those issues we try to find the future scope on this area. Here we also did the implementation of those previous existing approaches. Here we use the python as a language for the implementation of existing approaches. In terms of result analysis, we use two parameters which are time complexity and accuracy.*

*Keywords: Invasive, Non- Invasive, Digital image processing, Computer vision, Device, Blood, Nails, Eyes*

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### IMPROVED PROCESS FOR ANTI-COAGULANT DRUG SUBSTANCE RIVAROXABAN

**T. Suresh and K. Rambabu**

Department of Chemistry, RVR & JC College of Engineering, Chowdavaram Guntur, A.P, India

#### **ABSTRACT**

*An anti-coagulant drug substance rivaroxaban is developed with improved process by introducing a new oxazolidine ring formation with commercially available carbamide in presence of strong base like potassium hydroxide in toluene as solvent and the developed process is scalable, economic than innovator process, which is mentioned in scheme 1.*

*Keywords: Improved Synthesis, Alternative reagents, Rivaroxaban*



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**ROOT CUBE MEAN CORDIAL LABELING OF SOME STANDARD GRAPHS**

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Tamil Nadu

**A. Vijayan**

Research Department of Mathematics, Nesamony Memorial Christian College, Marthandam, Kanyakumari

**ABSTRACT**

Let  $G=(V,E)$  be a graph and  $f$  be a mapping from  $V(G) \rightarrow \{0,1,2\}$ . For each edge  $uv$  of  $G$  assign the label  $f$  is called a root cube mean cordial labeling if  $|vf(i) - vf(j)| \leq 1$  and  $|ef(i) - ef(j)| \leq 1$ , where  $vf(x)$  and  $ef(x)$  denote the number of vertices and edges labeled with  $x$ ,  $x \in \{0,1,2\}$  respectively. A graph with a root cube mean cordial labeling is called root cube mean cordial graph. In this paper, root cube mean cordiality of some standard graphs such as cycle, path, star are discussed.

*Keywords: Cycle, path, root cube mean cordial labeling, root cube mean cordial graphs.*



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**INVERSE DOMINATION TO THE TRANSFORMATION OF SOME GRAPH**

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**ABSTRACT**

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A set  $D$  of vertices in a graph  $(G, E)$  is a dominating set of  $G$ , if every vertex  $v \in V - D$  is adjacent to at least one vertex in  $D$ . If  $G - D$  contains a dominating set  $D'$  of  $G - D$  then  $D$  is called an inverse dominating set with respect to  $G$ . In this paper we have established some theorems and properties of the inverse domination parameters to the transformation of path (by removing any one vertex) and cubic symmetric graph.

Keywords: Graph, Domination, Inverse Domination, cubic symmetric graph, Transformation.



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### SOURCES OF INFORMATION AND EVALUATION IN MANGO CULTIVATION OF MALDA DISTRICT IN WEST BENGAL

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Kolkata, West Bengal

#### **ABSTRACT**

*At present mango cultivators are facing multi-faceted difficulties in their mango cultivation due to inaccurate information in time. In the rapid information explosion era information is not only limited in printed form of information sources, it is available in virtual platforms also but mango cultivators are basically belonging from rural areas and they are suffering in digital divide. The study is trying to manifests different information sources are accessing by the mango cultivators and also facing difficulties to access that sources. To achieve the objectives of the study a survey had been conducted among 400 mango cultivators from four blocks and 100 respondents from each block of Malda district. Different level of mango cultivators group is framed to get fruitful result of the research study. Basically cultivators are willing to access necessary information in verbally and few cultivators prefer non-printed sources; mostly they are surfing YouTube and watching television and mostly cultivators are not much interesting in printed sources of information. It has been observed that respondents not aware of different information centres which may serves necessary information in their mango cultivation due to having no idea of information centres. Few of the respondents have visited that centres and basically oral or verbal information have provided to them.*

*Keywords: Information centres, Non-printed form, Oral/ Verbal, Printed form, Social media*

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**A PRELIMINARY SURVEY OF EMOTIONAL BEHAVIOR AND HEALTH AWARENESS  
AMONG ADOLESCENT GIRLS OF CHANDIGARH AND ADJOINING STATES OF INDIA**

**Ravneet Kaur**

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**Anita Kaushal**

Principal, PG Govt. College for Girls, Sector-11, Chandigarh

**ABSTRACT**

*Adolescence is the most important period of transition in life. It requires proper knowledge of health, diet, and hygiene. Lack of timely information and guidance on these matters may cause complications for individuals in adulthood. Today's youth is exposed to many pressures. Health issues need to be discussed and their concerns addressed in nonjudgmental manner. Good relationship with parents, other family members, teachers and easy access to adolescent friendly health facilities will help adolescent enjoy a positive health leading to healthy adulthood. A survey was conducted on general health and behavior of 1000 adolescent girls of Chandigarh and adjoining states of India studying in PG Govt. College for Girls, Sector-11, Chandigarh. The survey was based on the awareness of adolescent towards allergies, acne, medication, visit to doctors, headache, backache, dizziness, depression, emotional stress etc. It was observed that the adolescent period is most vulnerable period that affects the overall growth and development of youth and expose them to many health risks. Careful and unobtrusive attention to each aspect of health at this stage will help adolescents grow into healthy and responsible adults.*

*Keywords: Adolescent, awareness, behavior, health, survey*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****DISTRIBUTION AND ABUNDANCE OF INDIAN PEAFOWL AND THEIR NESTING  
PREFERENCES WITHIN CHANDIGARH CITY AND ITS ADJOINING AREAS****Sandaldeep Kaur<sup>1</sup> and Tejdeep Kaur Kler<sup>2</sup>**<sup>1</sup>Ph.D. Scholar, Department of Zoology, Punjab Agricultural University, Ludhiana<sup>2</sup>Principal Ornithologist, Department of Zoology, Punjab Agricultural University, Ludhiana**ABSTRACT**

*Indian Peafowl (Pavo cristatus) is widely distributed bird but its status is unknown in urban landscape. The aim of the study was to estimate the distribution and abundance and nesting preferences of Indian Peafowl in Chandigarh and adjoining areas from January 2017 to December 2017. Two locations in the city viz: Peacock Garden, Sector- 39 (location I), near bus stand sector- 43 (location II) two locations from adjoining areas i.e. village Palsora (location III) and village Maloya (location IV) were selected. Point transect method was used during study. The total inhabitants of Indian Peafowl was recorded to be 30-35 at location I, 15-20 at location II, 10-15 at location III and IV with flock size ranged between 7-10 individuals. The sex ratio was highly skewed towards females at all selected locations. The thick, thorny and scrub vegetation cover was found to be the most preferred habitat. Indian Peafowl devoted maximum time in feeding and standing followed by roosting, calling and display. Roosting was observed on Azadiracta indica (Neem), Ficus religiosa (Peepal), Acacia nilotica (Kikar), Melia azedarach (Dhek). Breeding activities of Indian Peafowl was commenced in the month of April till first week of October. At location I, II, III and IV nests observed were 7, 5, 3, and 2 respectively. It could be inferred that the presence of heterogeneous vegetation comprising of trees, scrub vegetation and grassland which can provide refuge and breeding grounds to Indian Peafowl and these areas should be sustained.*

*Keywords: Breeding, habitat, Indian Peafowl, nesting, roosting.*



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### MAINSTREAM MEDIA AND TWITTER NARRATIVES: A CASE STUDY OF THE FARMERS' PROTEST

Jenith Sekar and Dr. Kuldeep M Siwach  
GD Goenka University

#### ABSTRACT

*After the advent of 2.0 web technology, Social Media like Facebook, Twitter etc have played a massive role in disseminating cascade of information to the people at large. Politicians, activists, cyber-activists and mainstream media used social media to facilitate a digital discourse on several boiling issues in India. Using Twitter as a tool for digital activism is becoming a new normal in this 21st century. Mainstream media like Newspapers and Television Channels have never failed to make use of this technoscape to avail Twitter to inform and to influence their audience. In this paper, the tweets of Mainstream Media during the time of Farmers' protest have been analysed to understand their role in active engagement with their audience with reference to Farmers' Protest in India. This study analyses tweets to identify the key players, major categories of twitter narratives and digital discourse of mainstream media with reference to Farmers' protest.*

*Keywords: Cyber-activism, Farmers' Protest, Twitter Narratives, Mainstream Media*



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**ROLE OF PROLETARIAT AT GRASS ROOT LEVEL IN ECO-HYDROLOGY MANAGEMENT -  
CASE STUDY OF SUBARNAREKHA RIVER BASIN IN JHARKHAND, ORISSA AND WEST  
BENGAL, INDIA**

**Vibhanshu Kumar<sup>1</sup>, Birendra Bharti<sup>2</sup> and Harendra Prasad Singh<sup>3</sup>**

PhD Research Scholar<sup>1</sup>, Assistant Professor<sup>2</sup> and Professor<sup>3</sup>, Department of Water Engineering & Management, Central University of Jharkhand

**ABSTRACT**

*In the conservation of water supplies and ecology, the capacity building of common people in understanding and forecasting the effects of hydrological and ecological changes is important. This paper incorporates the People's cooperation in Eco-Hydrology (EH) with Government of Indian (GoI) agency in the territory of Jharkhand, Orissa and West Bengal (WB), India. Improvement of correspondence organization, materials and strategies in EH education and planning of surrounding natural areas of interest had been the principle center of the proposed venture. This proposed venture is planned in a participatory way, at the person, just as at the authoritative level. At the individual level, ranchers, instructors, understudies, adolescents, and college personnel are associated with leading preparing workshops and carryout fieldworks to upgrade the mindfulness, information and abilities. In view of the fluctuated agro-climatic conditions, biospheres and Subarnarekha River basin of the state and for productive administration of the venture the entire river basin is to be partitioned into micro watershed corps (MWC) could be termed as proletariat. In this paper, the coordinated methodology followed has been portrayed, and encounters and difficulties are explained. The overall contention is that effective science communication approaches have been crucial attributes in active sustainable development in the respect of local citizens and EH monitoring and conservation initiatives.*

*Keywords: Capacity building, Eco-hydrology, science Communication, Sustainable Development*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****BLOCKCHAIN AND DIGITALIZATION OF LAND ADMINISTRATION USING DISTRIBUTED  
LEDGER SYSTEM****Sai Charith G<sup>1\*</sup>, Harish Reddy S<sup>2</sup> and Raj Kumar Rathode<sup>3</sup>**<sup>1\*</sup>Department of Computer Sciences Engineering, Bharat Institute of Engineering and Technology,  
Hyderabad<sup>2</sup>Department of Computer Sciences Engineering, Bharat Institute of Engineering and Technology,  
Hyderabad<sup>3</sup>Assistant Professor, Department of Computer Sciences Engineering, Bharat Institute of Engineering and  
Technology, Hyderabad**ABSTRACT**

*Blockchain is the one among the most important technical invention in the last two decades. This technique has paved way to many tech giants to combat the problem of security and digital identity issues. Blockchain technology includes cryptography and digital voting has a vast number of applications. Blockchain itself is known for cryptocurrency undermining and other applications. The paper argues that one should look beyond the currency applications and investigate the vast usage of blockchain in e-governance. The paper presents a brief framework of distributed ledger systems in the field of land administration which provides trustworthy record keeping. Our research has concluded that inclusion of blockchain technology in land administration can overcome the drawbacks of the traditional methods. This is the platform where one can abolish the problems facing in the land registration, not only in India as well as many parts of the world. Hence using blockchain Technology to save the land record transaction is the way to create the immutable records. This technology has added additional features to the platform of land-records.*

**KEYWORDS:** *Blockchain, e-governance Land registration, Land administration, Manipulation.*

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**CHRONIC KIDNEY DISEASE PREDICTION USING CGAN**

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**Dr. C. Thirumarai Selvi**

Professor, Sri Krishna College of Engineering and Technology, Coimba-tore, Tamilnadu, India

**ABSTRACT**

*Chronic kidney disease (CKD), is also known as chronic renal disease. Chronic kidney disease means lasting damage to kidneys if the disease in a very bad condition then our kidney may stop working and also decrease our health. By, this we may have complications like high blood pressure, anemia (low blood count), weak bones, poor nutritional health, and nerve damage. To avoid these conditions we should do early detection and treatment for Chronic Kidney Dis-ease. The objective of this research work is to introduce a new deep learning de-cision support system to predict chronic kidney disease. This work aim is to give a better performance through Conditional Generative Adversarial Network (CGAN) classifier based on its accuracy, precision, and recall for CKD predic-tion. From the experimental results, it is observed that CGAN gives better per-formance while comparing with K-nearest neighbor (KNN) classifier.*

*Keywords: Chronic kidney disease, K-nearest neighbour, missing value elimina-tion, recursive feature elimination, Conditional generative adversarial network.*



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**ACTIVITY AND TOXICITY ASSESSMENT OF PARTIALLY PURIFIED BACTERIOCIN FROM  
LACTIC ACID BACTERIA AGAINST MYCOBACTERIUM KANSASII**

**Revathy Kalyanasundaram**

Research Scholar, Centre for Drug Discovery and Development, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India,

**Manikkam Radhakrishnan and Sivaraj Anbarasu**

Scientist B, Centre for Drug Discovery and Development, Col. Dr. Jeppiaar Research Park, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India,

**ABSTRACT**

*Non Tuberculous Mycobacteria (NTM) comprises of more than 170 different species. Their resistance and lack of new therapeutic agents poses the challenge to the effective treatment of diseases caused by NTM pathogens. Mycobacterium kansasii is one of the most frequently isolated NTM which cause pulmonary diseases in humans. The treatment of M. kansasii disease includes multiple antimicrobials for the period of more than 12 months. However, their adverse effects and uncertain effectiveness remains challenging. Lactic Acid Bacteria (LAB) is a diverse group of bacteria who inhabits in a wide range of environment such as dairy, vegetables, gastrointestinal tract of humans, etc., They produces an antimicrobial peptide called Bacteriocins which are active against closely related species as well as others. In this study, we have screened the partially purified bacteriocins (PPB) extracted from LAB of cow milk samples against M. kansasii (MTCC3058). PPB of LAB strain BLN34 showed more than 50% of reduction in the growth of M. kansasii by Colony Forming Unit (CFU) estimation method and exhibits less in vitro toxicity in Vero cell lines. Also 50% of zebrafish larvae were survived upto 144 hpf in the presence of BLN34 PPB. The LAB strain BLN34 was identified as Enterococcus italicus by 16s rRNA analysis.*

*Keywords: Bacteriocins, Lactic Acid Bacteria, Mycobacterium kansasii, Non Tuberculous Mycobacteria, Zebrafish larvae*

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**CONFLICT AND WOMEN IN JAMMU AND KASHMIR: A STUDY OF SELECTED SHORT  
STORIES FROM SHAHNAZ BASHIR'S SCATTERED SOULS**

**Asma Jeelani Chishti<sup>1</sup> and Dr. Shweta Saxena<sup>2</sup>**

Ph.D, Research Scholar<sup>1</sup> and Assistant Professor<sup>2</sup>, Amity Institute of English Studies and Research, Amity  
University, Noida

**ABSTRACT**

*Jammu and Kashmir have been a disputed territory between India and Pakistan since the sub-continent partition in 1947. The history of any conflict zone is filled with ambiguous, gloomy and unresolved stories that are the outcome of violence. Such conflict zone violence has severe results on the common masses, who are the silent victims of such conflict. The period of '1990s was the most horrendous in Kashmir when insurgency was at its peak. The sufferings and brutalities evoked literary writings where the indigenous writers tell the painful past from the suppressed people's perspectives, which are otherwise not recorded in the nationalist narratives. Women are the silent sufferers of any conflict, and women in Kashmir are the most victimized. Over the last three decades, the Kashmiri women have undergone severe trauma; their sons have been killed, their children orphaned, husbands disappeared. This paper attempts to analyze selected short stories from Shahnaz Bashir's Scattered souls where he retells and recounts pathos and loss of women caught up in the conflict of Kashmir. These narratives are recorded as history seen and experienced by Kashmir's who have been silenced and marginalized.*

*Keywords: Conflict, History, Subaltern pasts, Trauma, Women.*

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**CHARACTERISATION AND ANALYSIS OF ALTERNATE HYBRID MATERIAL FOR TWO  
WHEELER MUD GUARD****J. Parivendhan Inbakumar<sup>1\*</sup> and Dr. S. Ramesh<sup>2</sup>**<sup>1</sup>Research Scholar, Department of Mechanical Engineering, Sathyabama Institute of Science and Tech.,  
Chennai<sup>2</sup>Professor, Department of Mechanical Engineering, Presidency University, Bengaluru**ABSTRACT**

*The purpose of a mud-guard in a vehicle is to keep the tyres of the vehicle away from stones, mud and debris that causes small damages to the vehicle. If the design of the mud-guard is weak, splashing of mud and erosion of material coating of the mud-guard takes place while driving the vehicle. Therefore, it is necessary to design a robust mud-guard with desirable mechanical properties to overcome the above disadvantages. In this work, mud-guard of a motorcycle is manufactured by using a composite material made by combining fibres (hybrid) such as hemp fibres and palm fibres. The above mentioned fibres are reinforced as composite materials using epoxy as the matrix material. Initially, the composite material is fabricated and tested for its mechanical properties as per the standards. Optimum tensile strength value was observed for HP50 to be 177 Mpa. The material with optimum volume percentage was selected for the modelling of the mud-guard. The modelling was done and analysed for its mechanical properties such as stress, strain and deformation with appropriate material properties using ANSYS software. From the analysis, the maximum equivalent stress, equivalent elastic strain and the total deformation are found to be  $9.417 \times 10^6$  Pa,  $5.9772 \times 10^{-6}$  and  $6.493 \times 10^{-7}$  m respectively and they are found to be better when compared with the properties of the existing mud-guard. Moreover, the composite material used is eco-friendly and inexpensive which is an advantage for commercial usage of the mud-guard.*

*Keywords-eco-friendly, epoxy resin, hemp fiber, palm fiber, and robust mud-guard.*

**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****A CLUSTER BASED MODEL FOR DIVERSIFICATION OF CROPS IN INDIAN PUNJAB****Sikander Singh Cheema<sup>1</sup> and Dr. Amardeep Singh<sup>2</sup>**<sup>1</sup>Assistant Professor and <sup>2</sup>Professor, Department of Computer Science & Engineering, Punjabi University, Patiala**ABSTRACT**

*Cultivation areas are usually divided in acres, each one becoming a production unit. Every year farmers have to decide what to plant in these acres according to the site. This requires the analysis of tradeoffs between investments that have to be made, expected profits, and environmental effects of cultivation. Because of this many cropping system models and decision support tools are structured for this purpose. As the need grows for analyses on crop production and management at local, cropping system models are increasingly structured to provide the capability for area-wide simulation and analysis at a range of local scales in different zones (clusters). So it requires a development of a data management system for every zone available in that particular area so that it can provide access to the local data in all the zones which can give complete required information to all the farmers in all those zones. The objective of this paper is to present a methodology to develop different clusters according to Crop and Soil Data Management system for the Indian Punjab State to improve crop diversification. The Soil Data Management component is based on the soil survey done in the Punjab in the various zones. Study of different crops has been done based on the soil properties. A mapping of suitable crops for the particular zones depending on the soil components has been suggested for the development of cropping system applications.*

*Keywords: Clusters, Crop, Database, Diversification, Soil.*



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****VIDEO QOE PREDICTION USING REGULARIZATION BASED REGRESSION WITH  
NETWORK QOS PARAMETERS****P. Archana<sup>1</sup> and Subhash Kulkarni<sup>2</sup>**<sup>1</sup>Senior Assistant Professor, Department of Electronics and Communication Engineering, VNR Vignana Jyothi Institute of Engineering and Technology Hyderabad<sup>2</sup>Principal and Professor, Department of Electronics and Communication Engineering, PESIT Bangalore South Campus Bangalore**ABSTRACT**

*With the growing Multimedia data traffic on the Internet, it is estimated that Video streaming service will account for almost 73 to 75% of the total data traffic. An ever-increasing demand for video delivery services has offered an exponential growth in multimedia business but along with high profits has raised the service expectation by many folds. Since the services are moving from technology centric to user centric, entire focus is on user's satisfaction of the service. In case of streaming video service which is the intent of study in this paper, Quality of Experience (QOE) is the grade of service given by customers to indicate the level of service acceptance. In this paper video QOE is predicted which is in line with the subjective evaluation of the videos using regularization technique to take into account various video quality influencing factors, their inter dependencies and redundancies.*

*Keywords: Quality of Service (QoS), Quality of Experience (QoE), regularization, linear regression, network impairments, Mean Opinion score (MOS).*

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### FEASIBILITY ANALYSIS OF A MICROSTRIP PATCH ANTENNA BEING USED AS A CONFORMAL ANTENNA

**D. Kanthi Sudha**

Assistant Professor, Electronics & Communication Engineering, VNR Vignana Jyothi Institute of  
Engineering & Technology, Hyderabad

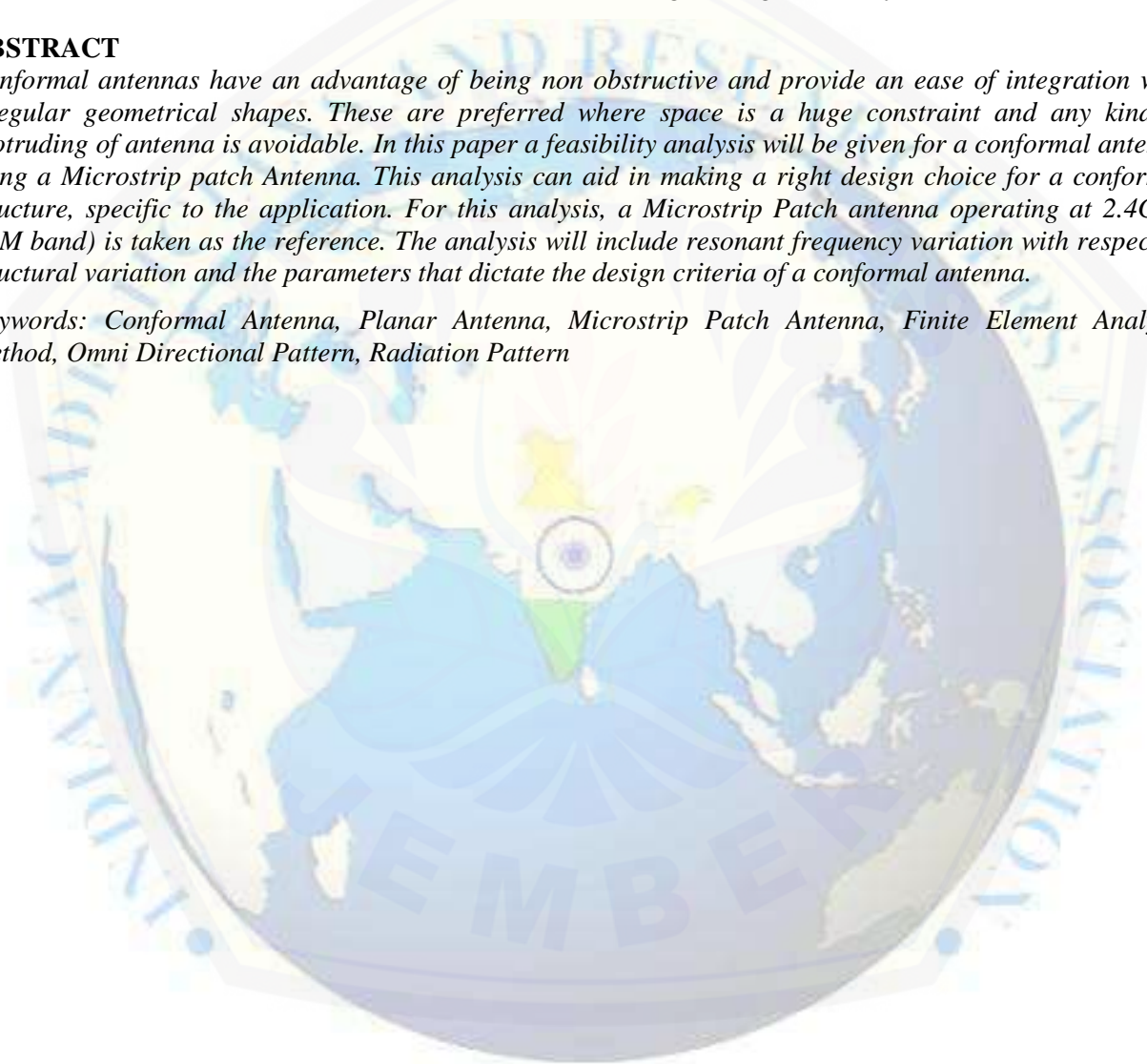
**P. Chandrasekhar Reddy**

Professor, Electronics & Communication Engineering, JNTU Hyderabad

#### ABSTRACT

*Conformal antennas have an advantage of being non obstructive and provide an ease of integration with irregular geometrical shapes. These are preferred where space is a huge constraint and any kind of protruding of antenna is avoidable. In this paper a feasibility analysis will be given for a conformal antenna using a Microstrip patch Antenna. This analysis can aid in making a right design choice for a conformal structure, specific to the application. For this analysis, a Microstrip Patch antenna operating at 2.4GHz (ISM band) is taken as the reference. The analysis will include resonant frequency variation with respect to structural variation and the parameters that dictate the design criteria of a conformal antenna.*

*Keywords: Conformal Antenna, Planar Antenna, Microstrip Patch Antenna, Finite Element Analysis Method, Omni Directional Pattern, Radiation Pattern*



**International Conference on Research and Development in Science,  
Technology and Management in the Current Era****Organized By Indian Academicians And Researchers Association on 21st February 2021****WATER POLLUTION IN INDIA: CAUSES, EFFECTS AND REMEDIES – A CASE STUDY****\*N. Sarubala<sup>1</sup>, Dr. N. Nagarajan<sup>2</sup>, Dr. S. Sivaprakasam<sup>3</sup> and Dr. K. Karthikeyan<sup>4</sup>**<sup>1</sup>PG Scholar and <sup>2,3,4</sup>Associate Professor, Department of Civil Engineering, Annamalai University,  
Annamalai Nagar**ABSTRACT**

*Water contamination is the defilement of water bodies all the time by human activities. It occurs when pollutants are discharged directly into water bodies without enough treatment to get rid of harmful compounds. Pollutants get into water mainly by human causes or factors. Water pollution is one of the biggest issues facing India right now. As may be evident, untreated sewage is the biggest source of such form of pollution in India. There are other sources of pollution such as runoff from the agricultural sector as well as unregulated units that belong to the small-scale industry. The situation is so serious that perhaps there is no water body in India that is not polluted to some extent or the other. In fact, it is said that almost 80% of the waterbodies in India are highly polluted. Ganga and Yamuna are the most polluted rivers in India.*

*Keywords: Contamination, Human Habitation, Water Pollution.*



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**EFFECT OF YOGASANAS AND SURYANAMASKAR ON SELECTED PHYSICAL,  
PHYSIOLOGICAL AND PSYCHOLOGICAL VARIABLES AMONG SCHOOL GIRLS IN  
CHENNAI, TAMIL NADU, INDIA**

**Dr. A. Yuvaraj**

Assistant Professor, Department of Physical Education, National Sports University, Imphal, Manipur, India

**ABSTRACT**

*The purpose of the study was to investigate the effect of yogasanas and suryanamaskar on selected physical, physiological and psychological variables among school Girls in Chennai, Tamil Nadu, India. To achieve the purpose of the study, 90 school girls randomly were selected from Chennai district level. Their age ranged between from 14 to 18 years. The subjects were divided into three equal groups of thirty subjects each. Group-I underwent yogasana, group-II underwent suryanamaskar and group-III acted as a control group. The duration of the experimental period for yogasana and suryanamaskar group is restricted to twelve weeks and the number of session per week confined to six days. For this study the following variables were selected as dependent variables. Physical variables: Flexibility. Physiological variables: BMI and Psychological variables: Anxiety, within the limitations and delimitations of this study, the following conclusions were drawn, it was concluded that there was significant improvement in flexibility due to yogasana and suryanamaskar comparing to control group and It was concluded that there was significant reduction in BMI, Anxiety due to yogasanas and suryanamaskar comparing to control group.*

*Keywords: yogasanas, suryanamaskar, physical, physiological, psychological variables and Chennai School girls.*

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### THE ETHICAL AND LEGAL ASPECTS OF INFORMED CONSENT

**Dr Rajib Kumar Majumdar<sup>1</sup> and Abhishek Majumdar<sup>2</sup>**

<sup>1</sup>Professor, Surgery and Neurosurgeon RAMA Medical College Ghaziabad

<sup>2</sup>Researcher, TERI School of Advanced Sciences, Delhi

#### ABSTRACT

*Informed consent or the learned acquiescence is an important and underlying principle of bio-ethics. The specific character of the informed consent as it is in the present form has been due to it assuming a dominant and important character in the otherwise translational relationship between the patient and the doctor during the course of twentieth century. The earlier distinctive spirit of medicine as founded on the trust in physician's decision based upon the fact that "doctor knows best" has seen a steady decline resulting in a trust deficit and here upon, developing the doctrine of 'informed consent' wherein, the patient has been put in charge of his own care through the propagation and advancement of his own will and right to self determination as advocated in Article 21 of the Constitution. The current study is based upon critical analysis and doctrinal method.*

*Keywords: Informed consent, Doctrine, Constitution, Right.*



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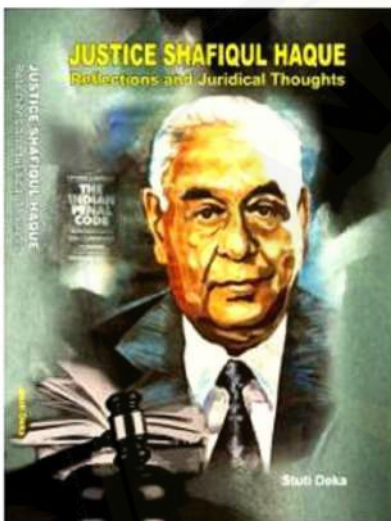
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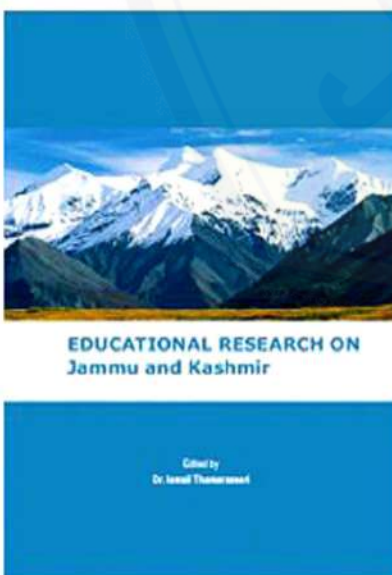
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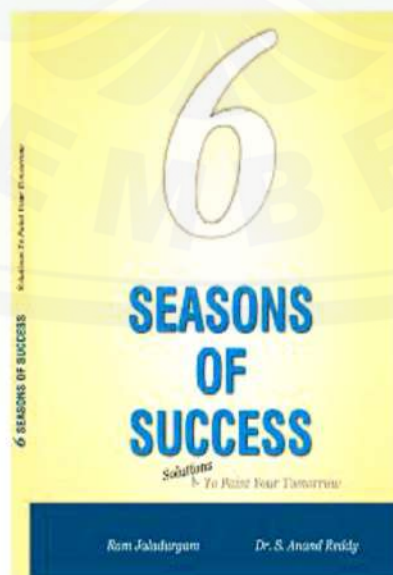
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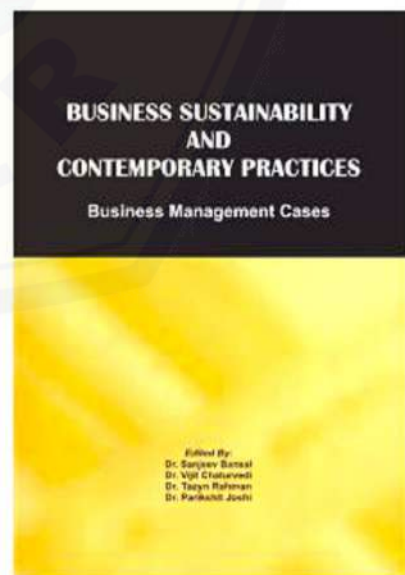
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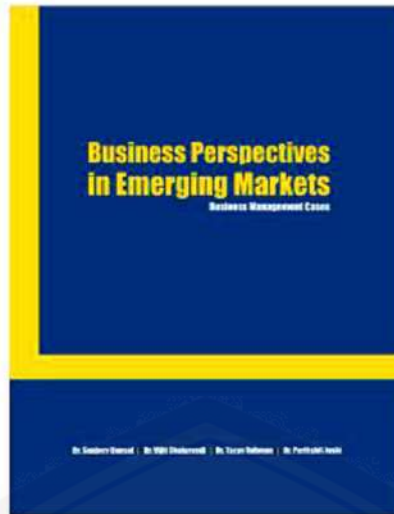


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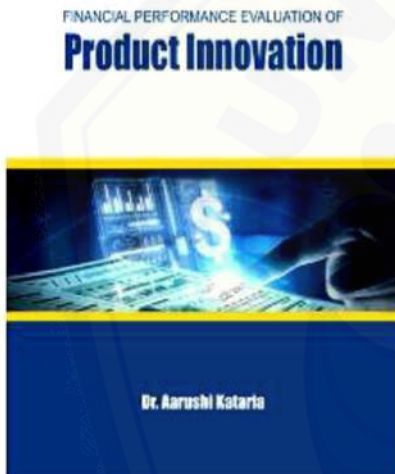
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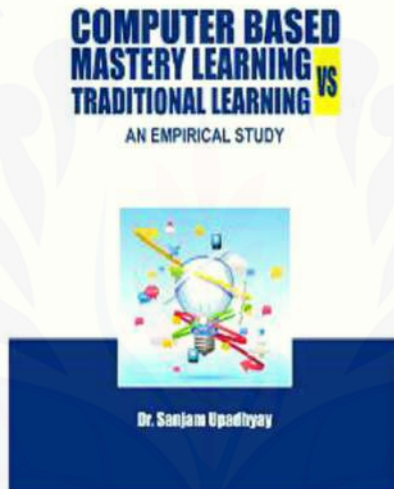
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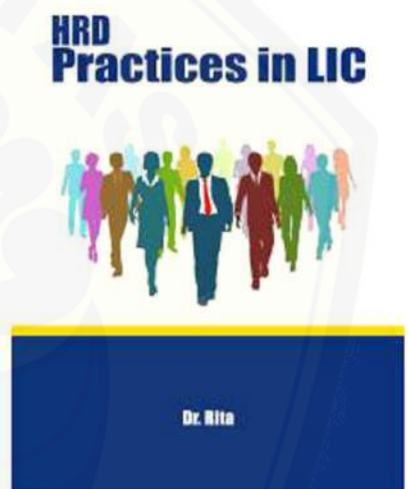
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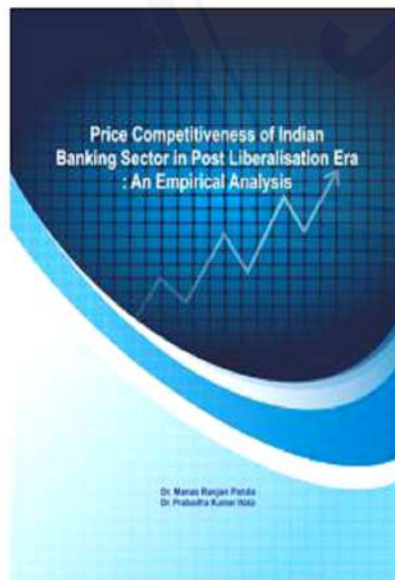
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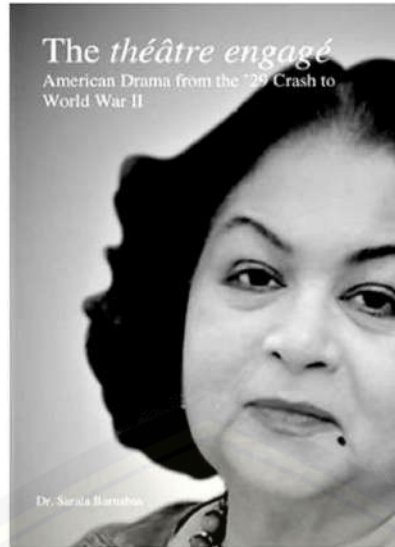
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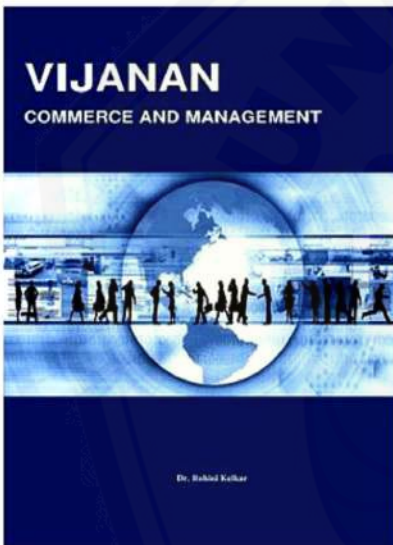
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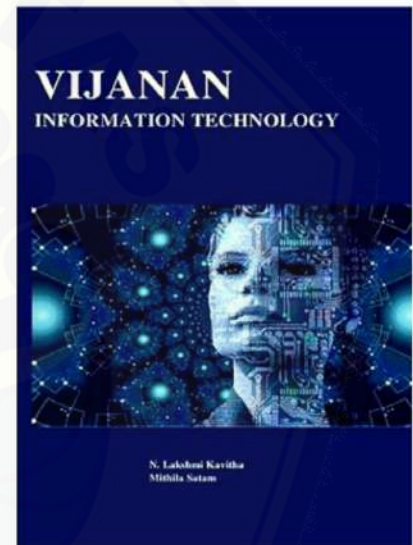
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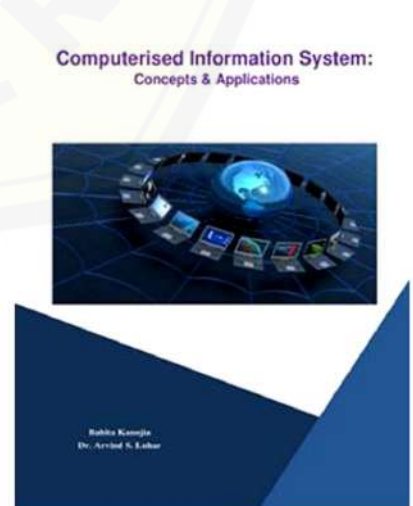
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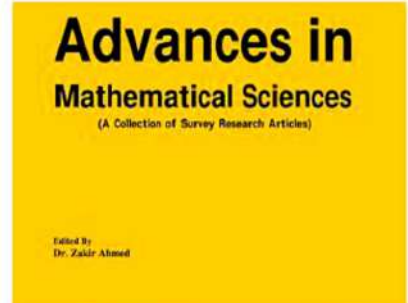
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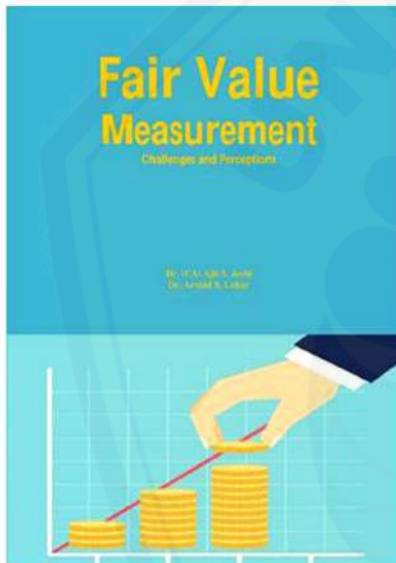
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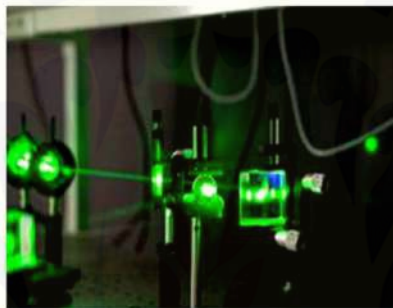


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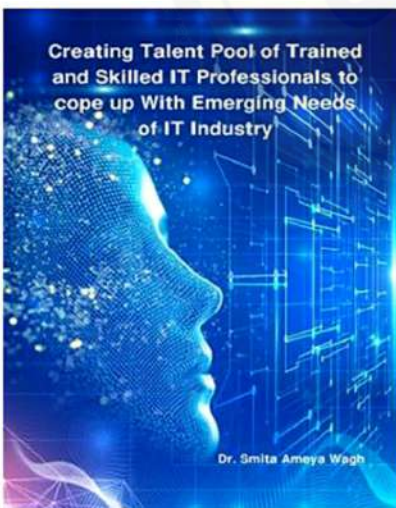
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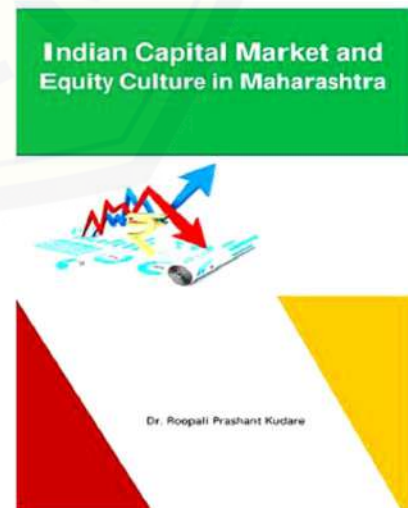
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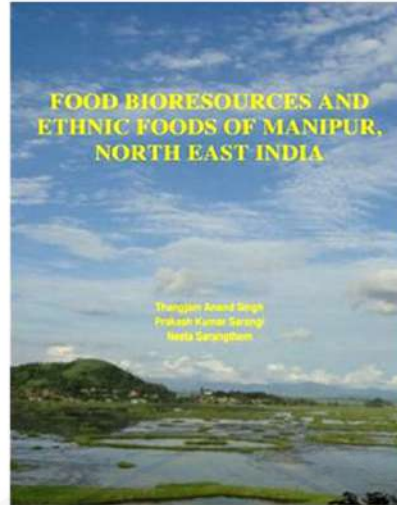
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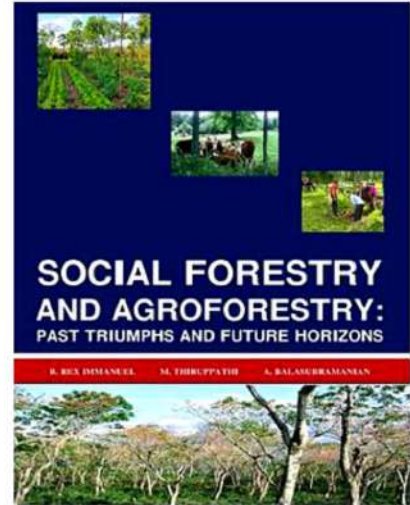
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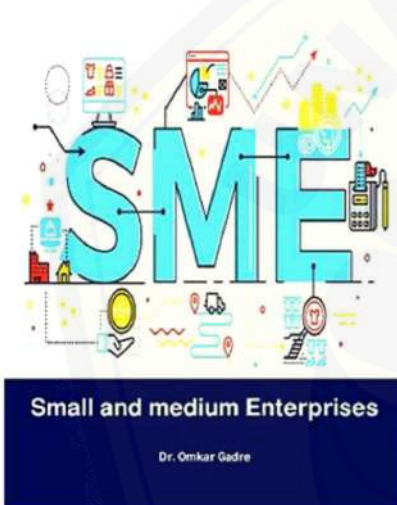
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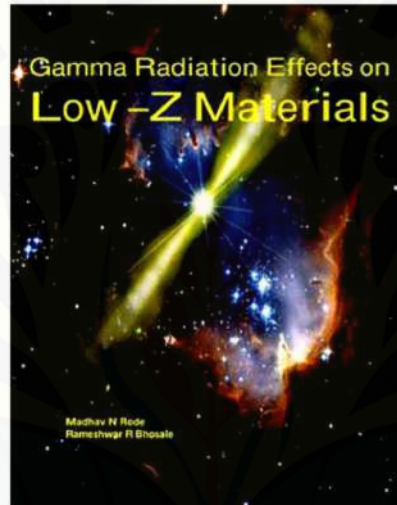
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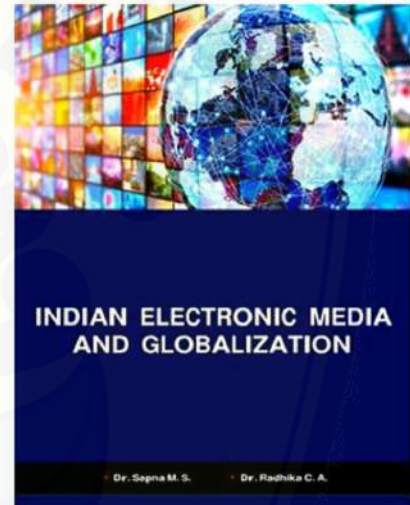
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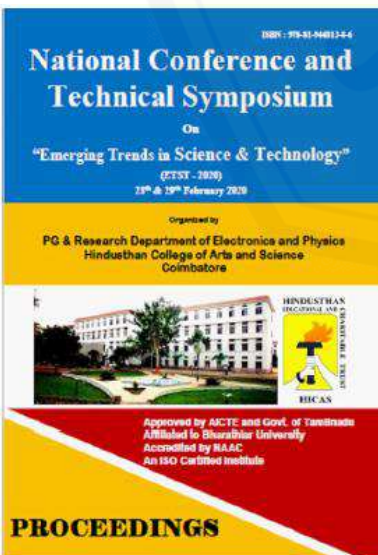
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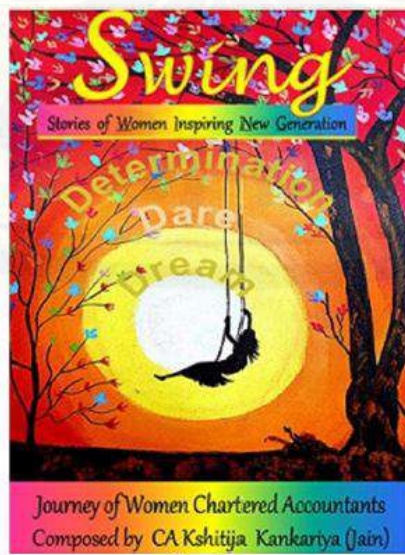
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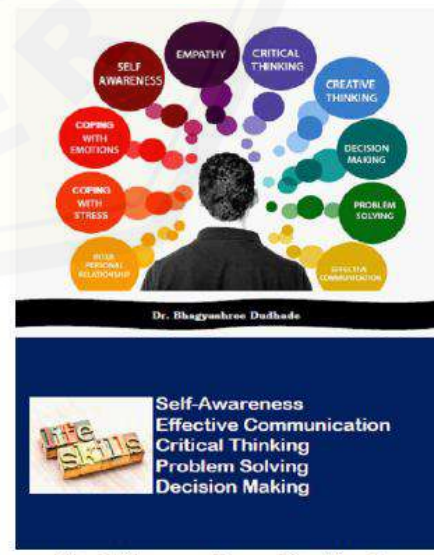


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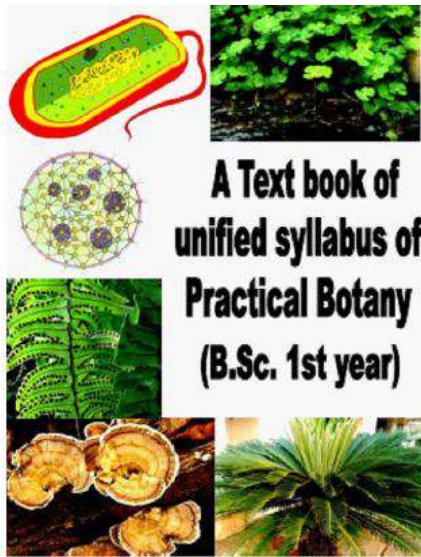
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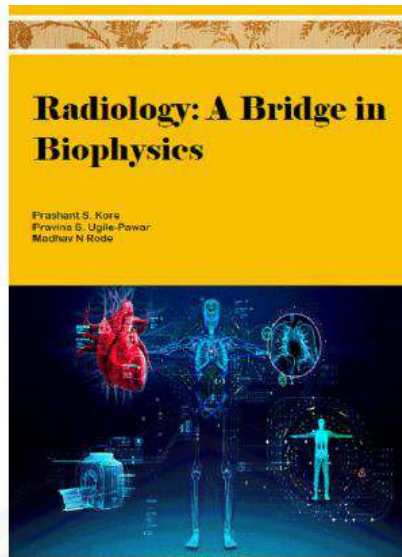
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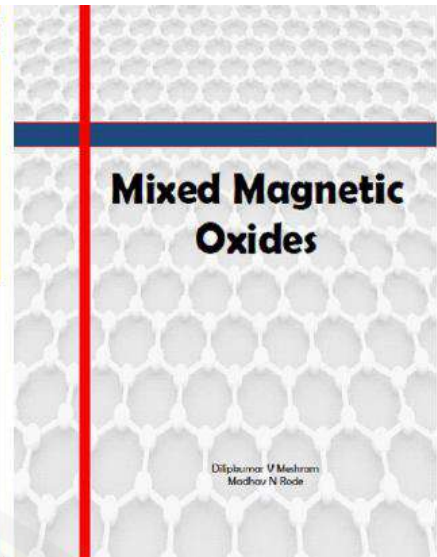
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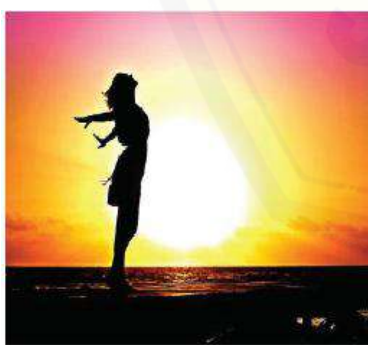
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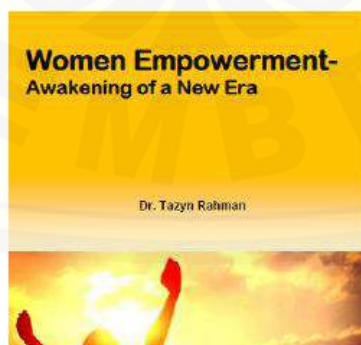
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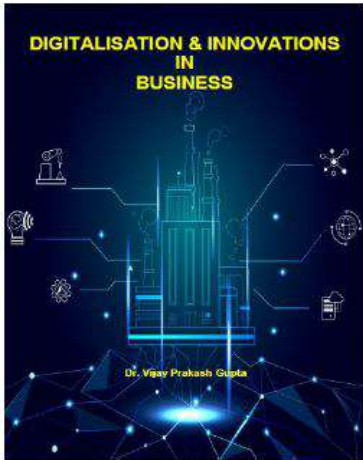
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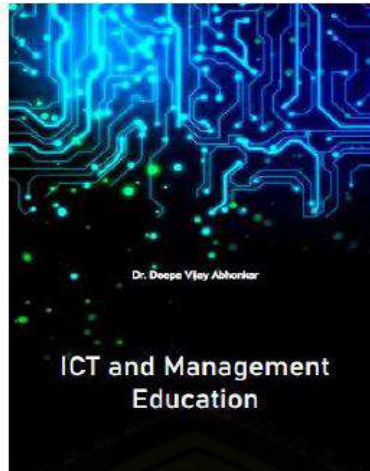
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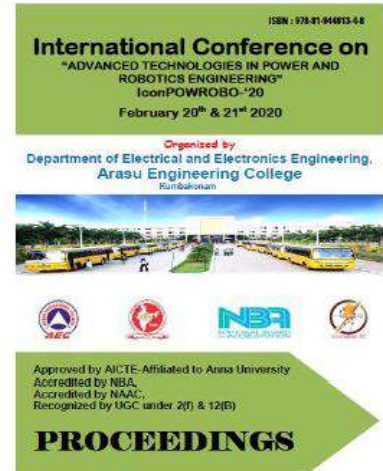
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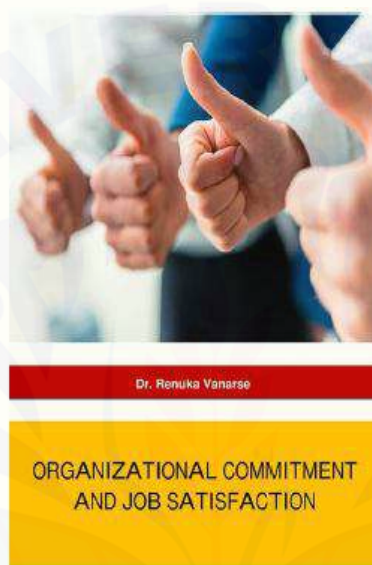
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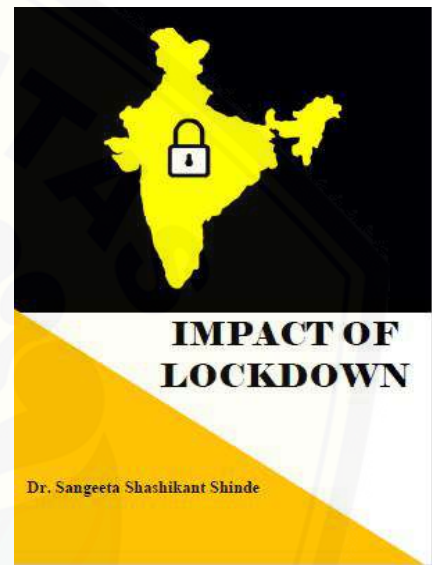
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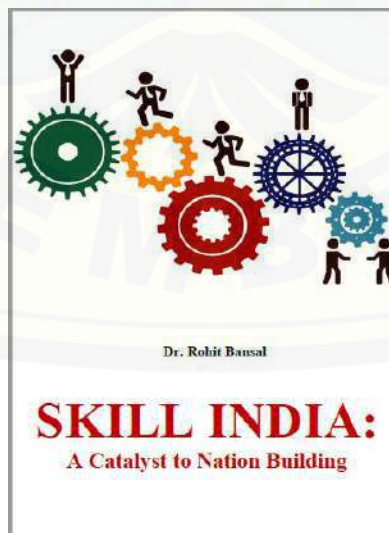
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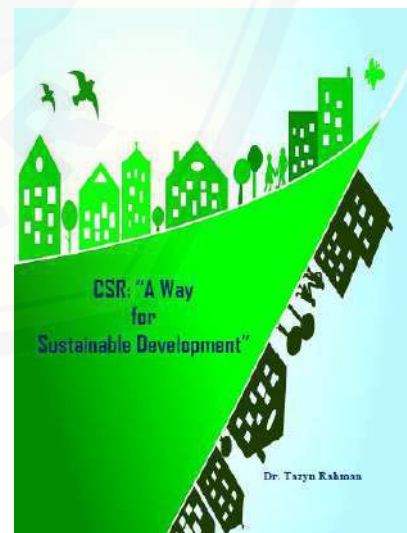
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# UVEITIS IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

Nugraha Wahyu Cahyana

Department of Ophthalmology, Faculty Medicine, Jember University, Jember

**Abstract - SLE or Systemic Lupus Erythematosus is known as an autoimmune disease, usually affect multiple systems include the eyes organ. We report a 26-year-old female, complained about painless blurred vision in the right eye since 6 months ago. The examination result shown no history of low-grade fever, fatigue, photosensitivity, arthralgia, and hair loss, erythema over the cheeks, neck, hands, chest, and back. The visual acuity examination of the right eye was 1/300, keratic precipitates and band keratopathy were not found while posterior synechiae were found. Visual acuity of left eyes was 6/40 and was found normal from anterior to the posterior's segment. Ultrasonography (USG) test showed severe OD. Severe Vitreous Opacity (suspect chronic inflammatory), but retina in its place. A serological test revealed positive PCNA with 25 intensity, negative RF, and negative ANA IFA results. The patient was consulted to the internal medicine department and was diagnosed with systemic SLE with ocular involvement. For eight weeks Oral corticosteroid was given. Six weeks after treatment, the opacity of the vitreous had decreased and the visual acuity of the right eye has improved. A case of uveitis in SLE disease can be treated with corticosteroid therapy. Management needs to be holistic, both systemic and ocular. SLE systemic management generally improves ophthalmological outcome.**

**Keywords: Corticosteroid, Systemic Lupus Erythematosus, Uveitis, PCNA.**

## INTRODUCTION

SLE or Sytemic Lupus Erythemastosus is known as chronic autoimmune disease recognized by the presence of auto-antibodies in cell nuclei which mediate the destruction of immune complex tissue.<sup>1</sup> Multiple organ affected caused by connective tissue destructive then express cutaneous and musculoskeletal manifestations.<sup>1,2</sup> Inflammatory immune response affects every organ and manifests such as in the ocular organ as a marker of systemic disease. This occurs in one-third of patients from mild to severe vision-threatening.<sup>3,4</sup>

The case of SLE shows great variants from around the world. Differences are seen between age, gender, geographical and racial distributions. About 0.3 to 8.7 per 100,000 cases reported in 2011, with the prevalence set up from 1.1 to 534.9 per 100,000. USA, Caribbean, Brazil, and Sweden were the areas marked with the highest incidence.<sup>5</sup> However, there is no overall data that discusses the incidence rate throughout Indonesia. Data from Rheumatology Clinic in Cipto Mangunkusumo General Hospital showed that 1,4% of patients were affected from SLE among total patient visits in 2002.<sup>6</sup> About 7-26% of cases reported retinal involvement in SLE is and mostly seen in patients with systemic disease.<sup>3,7</sup> SLE predominantly affects women and mostly affects women of reproductive age.<sup>5</sup> A study by Feldman., *et al.* report the case was 6 times greater in women of late teens and early '40s while its ratio 1:9-14 in male to female.<sup>6,8,9</sup>

SLE principle diagnostic based on 4 of 11 signs, either historical or present, including the presence of antinuclear antibodies, discoid rash, malar rash, oral ulcers, photosensitivity, serositis, non-erosive arthritis, immunological, hematological, and neurological disorder. Ocular is not the main target of immune-mediated damage in SLE but affects in several ways to ocular morbidity.<sup>6-9</sup> Anterior segment manifestation such as iridocyclitis, abnormalities of the eyelid, keratoconjunctivitis sicca, episcleritis, keratitis.<sup>4,8,9</sup> Posterior segment manifestation includes optic neuropathy, retinal artery and/or arterial vein occlusion, retinopathy, retinal vasculitis, and choroidopathy. Some mechanisms induce ocular symptoms in SLE. Immune complex deposition, the formation of autoantibodies, vasculitis, and thrombosis may cause inflammatory responses and activates the complement system.<sup>4</sup> SLE patients shown at least two major symptompms of retinopathy: the first symptompms is "classic" type retinopathy and the second symptompms is retinal vessel occlusion which involve arteries/veins. The classic finding are retinal

hemorrhage, cotton-wool spots, and vascular abnormalities (arteries narrow with capillary dilation, and vein dilation or tortuosity)<sup>7,9,10</sup> However, A severe vaso-occlusive retinopathy is also associated with multiple branches retinal artery occlusions, ocular neovascularization, traction retinal detachment, vitreous hemorrhage, neovascular glaucoma, widespread retinal capillary nonperfusion, and significant resultant loss.<sup>9</sup>

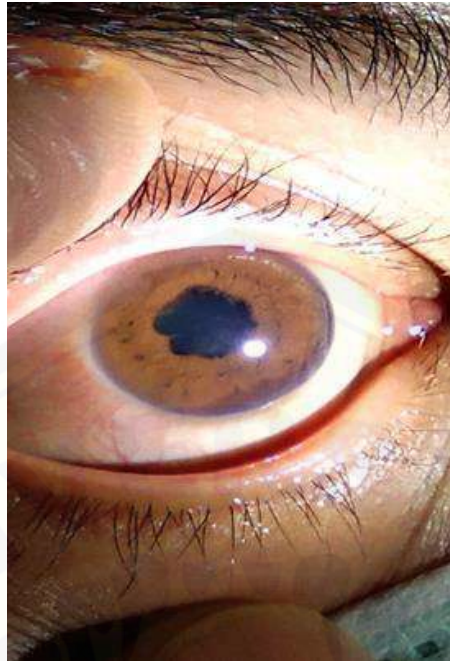
Therapy was given to induce, establish remission and prevent relapse of SLE.<sup>9</sup> Management needs to be holistic, both systemic and ocular. Systemic management of SLE has treatment ranges from Nonsteroidal Anti-inflammatory Drugs (NSAIDs), corticosteroids, Hydroxychloroquine, Immunosuppression, to biological therapy.<sup>9,11,12</sup> Management of the systemic disease in SLE affects the improvement of the ophthalmological outcome.<sup>7,12</sup> Additional management of local and systemic therapy is indicated depend on ocular complications. Retinal neovascularization usually requires laser pan-retinal photocoagulation in cases of vaso-occlusive disease.<sup>7,9,12</sup> Vitreoretinal surgery is performed for patients with traction retinal detachment or vitreous bleeding. The retinopathy prognosis of SLE affected based on the type of retinopathy and vaso-occlusion.<sup>12</sup> Herewith a rare case of SLE retinopathy is presented, with ocular clinical features that resemble other posterior uveitis. This case demonstrates the typical ocular manifestation of SLE and integrates collaboration with other disciplines. A comprehensive evaluation is required to help to make a definitive diagnosis. Thus, early systemic management could prevent irreversible visual loss and risk of death.

## CASE REPORT

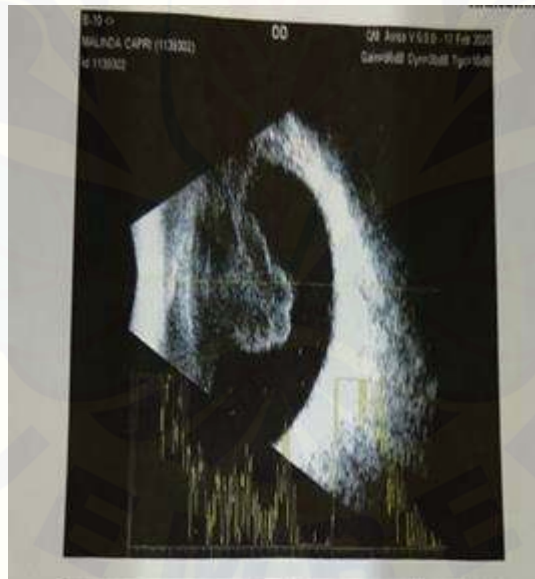
A 26-year-old female complained of sudden blurred vision in the right eye since 6 months ago. There was no redness, swelling, or discharge, and both were painless. The patient did not receive any treatment before. There was no history of low-grade fever, fatigue, photosensitivity, arthralgia, hair loss, erythema over the cheeks, neck, hands, chest, and back. The patient was a master's degree of public health student, has not been married. No history of chronic productive cough, sweating at night, decreased bodyweight, mouth and genital ulcer, animal contact, trauma, skin depigmentation, tinnitus, and the use of drugs. History of using glasses, allergy, hypertension, and diabetes mellitus were denied.

During the ophthalmological examination, it was revealed that the right eyes' visual acuity was 1/300, with IOP 25 mmHg and a good anterior segment. There were multiple synechiae posterior, but no band keratopathy (Figure 1). The lens was a mild opacity and cloudy of vitreous. The optic disc and retina cannot be observed. Meanwhile, the visual acuity of the left eyes was 6/40, with normal IOP and a good anterior segment. Iris and pupil were round, located at the central. The lens was also clear. In the fundus, we found a normal optic disc and normal retina. The patient was diagnosed with OD Posterior uveitis. Furthermore, the patient was examined with USG. The USG results showed OD: Vitreous Opacity with mild echospike and mobility. Retina On Place shown in (Figure 2). The patient was then examined with laboratory examination, the immunoserological results showed negative Rheumatoid factor (RF), positive PCNA (Table 1) with the attached profile (Table 2).

**Figure 1 Examination of the right eye show a multiple synechia posterior, but no band keratopathy**



**Figure 2 The USG results showed OD: Vitreous Opacity with mild of echospike and mobility. Retina On Place.**



**Table 1: The immunoserological results showed negative Rheumatoid factor (RF), positive PCNA**

Anti-	Associated diseases	Result
nRNP/Sm	Mixed Connective Tissue Disease (MCTD) tharp syndrome, SLE, Poli dermatomyositis	Negative
Sm	Systemic Lupus erythematosus	Negative
SS-A (Ro)	Sjogren's syndrome , SLE, Neonatal lupus syndrome, myositis	Negative
Ro-52	Sjogren's syndrome, Systemic Lupus erythematosus	Negative
SS-B (La)	Sjogren's syndrome , Systemic Lupus erythematosus, Neonatal lupus syndrome,	Negative
Scl-70	Progressive systemic sclerosis, diffuse form	Negative
PM-Scl 100	systemic sclerosis, Polymyositis	Negative

Jo-1	Polymyositis, dermatomyositis	Negative
Centromere B	Progressive systemic sclerosis, diffuse form, Primary biliary cirrhosis	Negative
<b>PCNA</b>	<b>Systemic Lupus erythematosus</b>	<b>Positive</b>
ds DNA	Systemic Lupus erythematosus	Negative
Nucleosomes	Systemic Lupus erythematosus	Negative
Histones	SLE, Drug-induced Lupus erythematosus, Rheumatoid arthritis	Negative
Rib-P-Protein	Systemic Lupus erythematosus	Negative
AMA-M2	Primary biliary liver cirrhosis	Negative
DFS70	(Atopic dermatitis , asthma Vogt-Harada syndrome and interstitial cystitis as well as in rheumatic disease), with low prevalence, and sometimes also in healthy blood donors (up to 8%)	Negative

**Table 2: PCNA examination result show PCNA positive with 25 intensity**

Antigen	Intensity	Class	O (+) + ++
RNP/Sm (RNP/Sm)	3	0	
Sm (Sm)	0	0	
SS- (60 kDa) (SSA)	1	0	
Ro-52 recombinant (52)	0	0	
SS-B (SSB)	1	0	
Scl-70 (Scl)	1	0	
PM-Scl 100 (PM 100)	1	0	
Jo-1 (Jo)	1	0	
Centromere B (JB)	0	0	
PCNA (PCNA)	<b>25</b>	+	
ds DNA (DNA)	1	0	
Nucleosomes (NUC)	0	0	
Histones (HI)	5	0	
Ribosomal Protein (RIB)	0	0	
AMA-M2 (M2 )	1	0	
DFS70 (DFS70)	1	0	
Control (Ko)	80	+++	

One week afterward, the anterior segment showed no sign of improvement on the posterior segment. Laboratory test record decreased hemoglobin count to 11,5 g/dL and leukocyte count to 4.220/ $\mu$ L, normal thrombocyte count, increased ESR to 60 mm, and decreased CD4 count to 329 cells. There was a positive result of IgG Rubella, with titer increased to 961.9 IU/mL ( $n < 5.10$  IU/mL), alongside with non-reactive IgM. Serology test of IgG CMV result was also positive with non-reactive IgM. Screening of anti-HIV showed non-reactive results and antinuclear antibody (ANAs) test was positive at a titer of 1:1000. Chest X-Ray examination showed signs of bilateral paracardial infiltrates with pneumonia as a differential diagnosis. Based on clinical and laboratory results, the patient was diagnosed with unilateral posterior uveitis caused by CMV infection. Thereafter, the case was consulted further to Allergy-Immunology Division from the Department of Internal Medicine to find the underlying etiology.

The Allergy-Immunology division diagnosed systemic SLE disease with the characteristic of mucocutaneous and ocular involvement. The patient was prescribed of consumed oral methylprednisolone 3 x 16 mg, cavit D3 3 x 500 mg, folavit 1 x 400 mg, and lansoprazole 1 x 30 mg. for the further, he also consulted by to Dermatology Department and diagnosed with chronic cutaneous lupus erythematosus.

Then the patient returned for follow-up six weeks after his initial visit. The condition of the right eye was getting better, with visual acuity recorded at 5/60. Examination of the posterior segment of the right eyes shown a round optic disc, CDR 0,3-0,4, aa./vv 1/3, cotton wool spots, flame-shaped hemorrhages, and ghost vessels. Apart from that, a posterior segment of the left eye, a round optic disc, pale and hard to be evaluated CDR, aa./vv 1/3, cotton wool spots, flame-shaped hemorrhages, and ghost vessels were found. The patient then diagnosed with uveitis unilateral e.c. SLE.

## DISCUSSION

This case reported a young female patient with sudden painless blurred vision in the right eye since six months before admission. Visual acuity of the right eye was 1/300 and the left eye was 6/40. The posterior segment's right eye shown multiple synechiae and no band keratopathy, the left eye was normal. From this condition, the primary consideration of the right eye was the posterior segment shown vitreous opacity while the fundus examination shown can't be observed. An infectious cause is more commonly seen in CMV retinitis and tuberculosis ocular, while the autoimmune disease may include SLE. Thus workup uveitis was performed to confirm the diagnosis including routine blood test, urinalysis, erythrocyte sedimentation rate (ESR), TORCH, HIV screening, VDRL, TPHA, antinuclear antibody test (ANA); anti-double-stranded DN (dsDNA), Rheumatoid Factor (RF), tuberculin skin test (TST), and chest x-ray.

The result of the workup showed high titer of Rubella IgG, CMV IgG, HSV IgG, and non-reactive HIV. The results of the antinuclear antibody (ANA) tested positive at a titer of 1:1000. From the chest x-ray, there was a pericardial infiltrate bilateral and negative tuberculin skin test. Diagnosis of SLE retinopathy was considered with the clinical appearance and history of low-grade fever, fatigue, arthralgia, and facial rash. Laboratory tests also showed results of anemia, thrombocytopenia, elevated ESR, and the presence of ANAs. Thorough posterior section examination showed multiple cotton wool spots and intraretinal hemorrhages.

Epidemiologically, SLE most commonly occurs in women, however, men may also be affected with a ratio of 1:9-14 in male to female.<sup>6</sup> SLE principle diagnostic based on 4 of 11 signs, either historical or present, including the presence of antinuclear antibodies, discoid rash, malar rash, oral ulcers, photosensitivity, serositis, non-erosive arthritis, immunological, hematological, and neurological disorder. Ocular is not the main target of immune-mediated damage in SLE but affects in several ways to ocular morbidity.<sup>4-6,8</sup>

However, differential diagnosis of CMV retinitis could not be excluded as well for several reasons. Since the patient was still relatively young, a history of sexual intercourse, and multifocal white exudates with hemorrhage result during the retinal examination, may identify the patient's condition to CMV retinitis. The clinical sign of CMV retinitis is usually divided into 3 variants, including a classic or fulminant form with early stages presents as cotton wool spots. This disease develops along the blood vessels of the retina, causing areas where the retinal bleach meets which are often associated with intraretinal hemorrhages and hard exudates.<sup>13</sup> Ocular lesions that mostly seen on Acquired Immunodeficiency Syndrome (AIDS) are cotton wool spots, shown up in 25 - 50% of patients and associated with CMV retinitis and retinal hemorrhages.<sup>14</sup> However, it was disputed with the fact the ancillary test of IgG CMV titer and HIV screening test showed negative results.

For further evaluation, the patient was directed to Internal Medicine Department and then she was diagnosed as SLE with ocular and mucocutaneous involvement. It conforms to the revised classification criteria of the American College of Rheumatology (ACR). The diagnosis was determined based on a history of malar rashes, discoid rash, arthralgia, anemia, elevated ANA titer (1:1000), and the elevated anti-ds DNA antibody titer (134.8 IU/mL compared to the normal titer).

Various mechanisms of SLE may cause eye disease. Several mechanisms include immune complex positioning and other antibody-related mechanisms, thrombosis, and vasculitis to name a few.<sup>4</sup> Retinal cell death and optic nerve demyelination are due to antibody-dependent cytotoxicity. The mechanism of primary lupus retinopathy is unknown but is thought to be secondary to the circulating immune complexes found in this disease.<sup>15</sup> Lupus anticoagulant antibodies are owned by about 10% of lupus patients. Anticoagulant antibodies are known to increase the incidence of thrombosis. Anti-phospholipid antibodies (APA) are associated with more severe retinopathy and vascular occlusion. In SLE, the retinal capillaries are involved and mainly produce cottony specks or microinfarcts of the retinal nerve fiber layer due to focal ischemia and necrotizing retinal vasculitis.<sup>15,16</sup>

Retinopathy is an intraocular involvement and one of the most common occurrences in patients with SLE, about 2-30% of SLE patients have retinopathy, it depends on the severity and activity of the disease.<sup>9</sup> Activity of systemic and cerebral SLE corresponds to retinal involvement. Originally, SLE patients

develop major clinical forms of retinopathy. The first type is characterized by cotton wool spots with the presence or absence of intraretinal hemorrhages, generally occurring in patients with classic retinopathy of SLE. The second type of retinopathy involves arterial and/or venous vascular, and it is associated with occlusion of the larger retinal vessels. Proliferative lupus retinopathy is the third type of retinopathy in SLE.<sup>10,15</sup>

Cotton wool spots are classic retinal findings. It's an expression of localized micro-infraction from the fiber layer of the retinal nerve with the presence or absence of intraretinal hemorrhages, microaneurysms, and hard exudates.<sup>9,10</sup> Mild lupus retinopathy composed of cotton wool spots, retinal hemorrhages, perivascular hard, and may asymptomatic.<sup>4</sup> Generally, the symptom of lupus retinopathy is microangiopathy with cotton wool spots and small intraretinal hemorrhages occur in 80% of cases and are mostly related to a good visual prognosis. In cases with peripheral retinal hemorrhages, retinal nonperfusion may also be observed.<sup>9,17</sup>

## CONCLUSION

The appropriate diagnosis and treatment could prevent further irreversible visual loss. Management should to be holistic cause has impact to improves the ophthalmological outcome.

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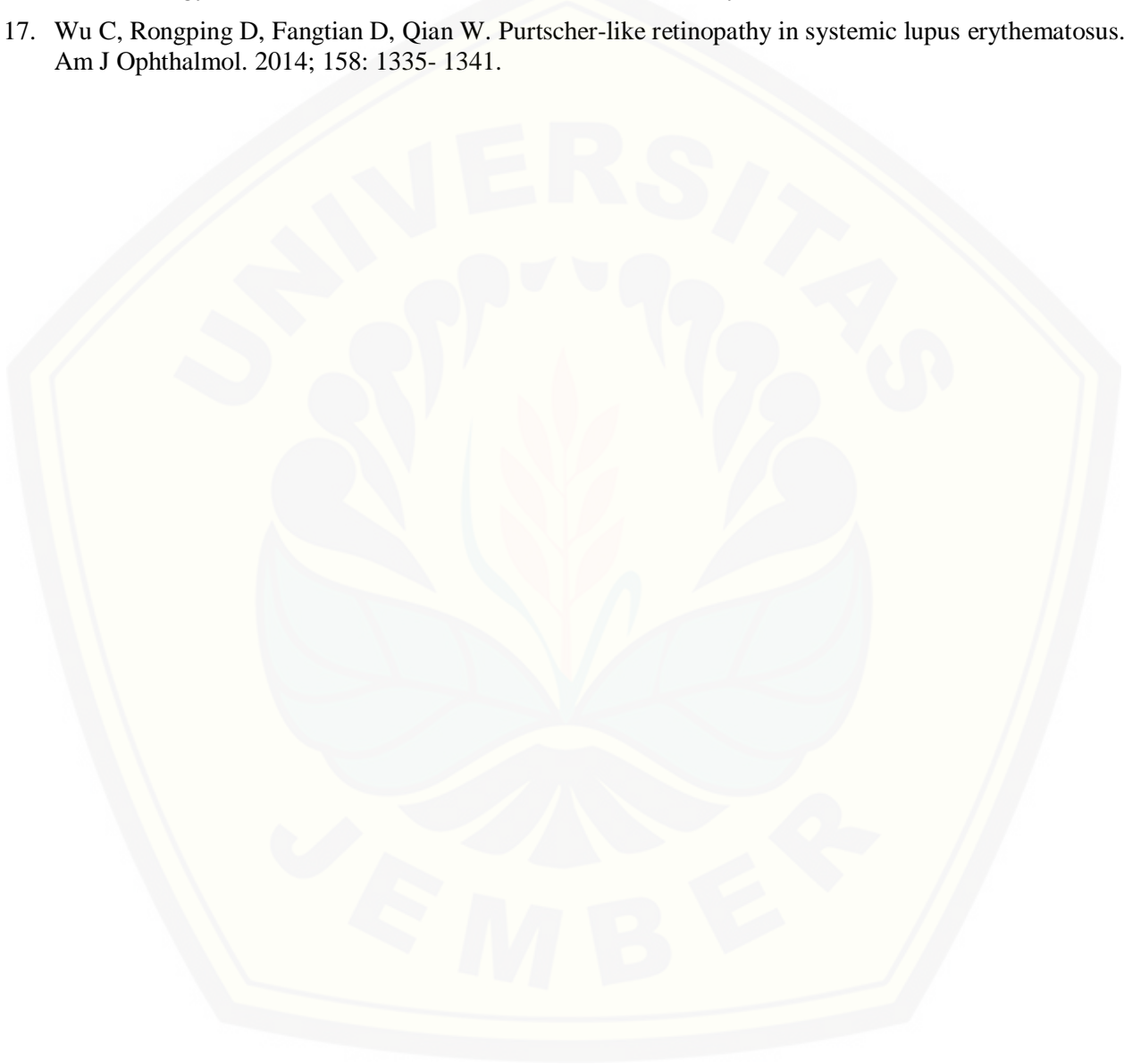
## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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**CORONAVIRUS TRANSMISSION TROUGH OCULAR SECRETION: A REVIEW OF  
CORONAVIRUS AND OCULAR MANIFESTATIONS**



**Dr. Tazyn Rahman**  
Conference Convenor



# CORONAVIRUS TRANSMISSION THROUGH OCULAR SECRETION: A REVIEW OF CORONAVIRUS ANDOCULAR MANIFESTATIONS

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*Abstract -COVID-19 (Corona Virus Diseases-2019) is the newest global pandemic caused by SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus-2). This article aims to study the relationship between COVID-19 and the conjunctival swab test systemically. This article is based on several scientific reports related to conjunctival swab performed in COVID-19 patients from the PUBMED database, Google Scholar, Springer Link, Elsevier, medRxiv, bioRxiv, and Wiley Online Library. Keywords used are conjunctivitis, ocular, ophthalmic, COVID-19, SARS-CoV-2, 2019-nCoV, Coronavirus, Coronavirus-19, Coronavirus19, pathophysiology, mechanisms, tear, conjunctival swab, RT-PCR, and conjunctiva. Eight reports were reviewed in this article. Respiratory symptoms and ocular manifestation such as conjunctivitis with hyperemic eyes, conjunctival chemosis, epiphora, and other rare ocular manifestations were observed in COVID-19 patients. Ocular manifestation may present as a sole symptom, prodromal symptom, simultaneously appear with the systemic symptom, or as residual floaters. Various therapy was given according to the complaints. RT-PCR results from the conjunctival swab test may be positive and negative in COVID-19 patients with conjunctivitis. From this article, we hope to highlight the importance to take optimal prevention measures for medical staff despite the presence or absence of ocular clinical manifestation.*

**Keywords:** COVID-19, ocular manifestation, conjunctival swab

## INTRODUCTION

COVID-19 (*Corona Virus Disease-2019*) is caused by the new variant of the SARS virus known as SARS COV-2 (*Severe Acute Respiratory Syndrome- Coronavirus-2*). It shows in Wuhan, Hubei Province for the first time in 2019.<sup>[1,2]</sup> On December 30th, 2019, dr. Li Wenliang, an Ophthalmologist was giving a warning to his colleagues about a SARS-like-symptom observed in Wuhan, allegedly related to the local market activities.<sup>[3]</sup> The mortality rates in this virus-related disease increased sharply around the world, that WHO declared this as a state of international public health emergency on January 30th, 2020, and as a global pandemic on March 11th, 2020 can be seen in Figure 1 respectively.<sup>[4,5]</sup> Until July 12th, 2020, the total confirmed case worldwide was 12.552.765, with 561.617 death. The chronological diagram of COVID-19.<sup>[6]</sup>

**Figure 1. The initial chronology of the appearance of COVID-19 until the status of a pandemic is declared by WHO<sup>[5]</sup>.**



SARS COV-2 is a family of beta-CoV, which is known to induce a systemic manifestation such as severe respiratory disorder in humans and mammals. This family virus type has already been involved in two previous pandemics, the SARS (*Severe Acute Respiratory Syndrome*) in 2003 and MERS (*Middle Eastern Respiratory Syndrome*) in 2012.<sup>[7-9]</sup> It has the largest single RNA strand with a diameter of less than 60-140 nm with around 30.000 nucleotides.<sup>[10,11]</sup> The main transmission route is through droplets and direct contacts, although the asymptomatic patient may also be able to transmit this virus.<sup>[12]</sup> This virus also is reported to stay active on the material surface, such as stainless steel and plastic materials for 72 hours, less than 24 hours on the carton, and less than 4 hours on copper material.<sup>[1]</sup>

Previously, HCoV-NL63, a type of Human Corona Virus (HCoV), was the only identified virus that was confirmed to induce eyes' infection especially conjunctivitis through an unknown mechanism.<sup>[13]</sup> There are no reports of eyes symptom both in SARS-CoV and MERS-CoV.<sup>[13]</sup> In the COVID-19 case, there are some reports about ocular manifestation through the conjunctiva transmissions confirmed with RT-PCR (*Reverse Transcriptase-Polymerase Chain Reaction*) swab test and various method of therapy were given.<sup>[14-16]</sup> The purpose of this review is to identify the information related to the COVID-19 ocular manifestation, therapy, the relationship with systemic manifestation, and the role of the conjunctiva swab PCR test to deliver a best clinical practice recommendation for this period time.

## METHODS

This review was conducted in July 2020 through several databases, which are PUBMED, Google Scholar, Springer Link, Elsevier, medRxiv, bioRxiv, and Wiley Online Library. The keywords used were conjunctivitis, ocular, ophthalmic, COVID-19, SARS-CoV- 2, 2019-nCoV, Coronavirus, Coronavirus-19, Coronavirus19, pathophysiology, mechanisms, tear, swab conjunctiva, PCR, and conjunctiva. The article will be selected purposely based on the clinical manifestation of SARS-COV-2 in the ocular, therapy, relationship with systemic manifestation, and the role of conjunctiva swab PCR test. It will be processed through qualitative review from several documents according to PRISMA recommendation. We chose the published article in English that reported the ocular manifestation in COVID-19 patients. Case report, case series, cohort study, and cross-sectional study were included in the article we chose. We excluded the review or meta-analysis article, non-full text article, article without the patient's clinical manifestation, and non-English article. Ethical clearance was not needed, and the result will be reported following the terms of *Preferred Information Elements for Systematic Testing and Meta-Analyses* (PRISMA).<sup>[17]</sup>

## RESULTS

From a systematic look out through a decided approach, we have collected 52 articles from the electronic database. After being filtered, 4 articles were excluded because of duplicate titles and abstracts; 13 articles were irrelevant, not in full-text format, and not in English; 23 articles were a review article or meta-analysis, and case report, case series, cohort studies, and cross-sectional. Only 8 articles fulfilled the requirement of this study, which consisted of 2 case reports, 2 case series, 2 cohort study, and 2 cross-sectional studies about ocular manifestation in COVID-19 patients can be seen in Figure 2. Almost all articles mentioned ocular manifestation specifically or generally in COVID-19 patients, the relationship

between ocular and systemic manifestation, the results of nasopharyngeal and conjunctiva swab, also the given therapy. All of this information was extracted and summarized in Table 1.

**Figure 2. PRISMA Systematic Review<sup>[17]</sup>**



In this review, there are several reports of ocular manifestation in COVID-19 patients. The majority reports conjunctivitis, with hyperemic conjunctiva, clear secretion, foreign object sensation, overflow of tears or epiphora, and conjunctival chemosis. The appearance was specifically pointed to viral conjunctivitis, moreover, a specific conjunctival follicle was spotted.<sup>[18,19]</sup> However, there are several unreported manifestations of hemorrhagic conjunctiva, such as petechiae, tarsal hemorrhage, and chemosis. In the same patient, the hallmark of severe adenovirus infection; pseudomembrane, sticky secretion around eyelashes, and superficial punctate keratitis were also spotted.<sup>[20]</sup> Hyperemic dry eyes, itchy eyes, even floaters symptoms were discovered after the treatment ended.<sup>[21,18]</sup> Cheema, *et al* reported the findings of herpetic keratoconjunctivitis with photophobia, edema palpebra, mucoid secret, conjunctiva injection, follicle, small pseudodendritic inside the inferior temporal cornea, and small subepithelial infiltration (0,2 mm) with epithelial damage superior to temporal limbic. These symptoms were developed into epidemic keratoconjunctivitis accompanied with ipsilateral lymphadenopathy, widening infiltrate, diffuse epithelial damage, and significant decrease vision (20/40), with pinhole correction change to 20/30.<sup>[19]</sup> Not all COVID-19 patients experienced ocular manifestations.<sup>[3,8]</sup> Scalinci, *et al.* dan Xia, *et al.*, reported that these ocular manifestations with symptoms were observed in the positive COVID-19 patient confirmed through nasopharyngeal swab test without other systemic manifestations, such as fever and acute respiratory disorder. Simply, these ocular manifestation is the single complaints of the patient.<sup>[14,21]</sup> Conjunctivitis may also be found as a prodromal symptom before systemic manifestation occurs.<sup>[2,5,20]</sup> These ocular symptoms may show up at the same time with mild systemic symptoms, such as fever, cough, and flu in several cases.<sup>[7,8]</sup> In another case, Navel, *et al.* dan Wu, *et al.* reported that the ocular manifestation showed up after the patient experienced moderate-severe acute respiratory syndrome with ventilator support.<sup>[15,18]</sup> One patient experienced floaters feeling after treatment ended.<sup>[6]</sup> Systemic manifestations reported in these reviews were fever, cough, sore throat, tonsil enlargement, hemoptysis, sputum, rhinorrhea, nasal congestion, headache, fatigue, vomiting, stomachache, diarrhea, myalgia, arthralgia, rash, lymphadenopathy, pneumonia, acute respiratory syndrome, breathing difficulties, respiratory arrest, shock, kidney failure, multiple organ dysfunctions, rhabdomyolysis, even Disseminated Intravascular Coagulation (DIC).<sup>[10,11]</sup> The results of conjunctival

swab RT-PCR examinations and their relationship to ocular manifestations in patients with COVID-19 vary widely. In some COVID-19 patients who were confirmed via nasopharyngeal swab test and complained of ocular symptoms when the conjunctival swab PCR examination showed results as in the belows:

**Table 1. : Ocular manifestations COVID-19 patients, ocular related to systemic manifestations, the results of nasopharyngeal swab and conjunctival swab test , and ocular therapy given.** <sup>[14, 15, 18, 19, 22-25]</sup>

Author	Article type	Title	Location	Population /Patient	Ocular Manifestations (Percentage)	Ocular Therapy	Relation with systemic manifestation	Nasofaring RT-PCR Swab	Conjunctiva RT-PCR Swab (Percentage)
Navel V,etal <sup>[18]</sup>	Case Report	Haemorrhagic Conjunctivitis with Pseudomembranous Related to SARS-CoV-2	France	63-year-old man who is positive for COVID-19	Day 17: Hyperemic conjunctiva and clear bilateral secretions (patient in ICU unit). Day 19: follicles, petechiae, tarsal bleeding, chemosis, pseudomembranes, sticky secretions around the lashes, and superficial punctate keratitis (patient in ICU unit)	Maintain eyelid hygiene , irrigation with saline and artificial tears. Azithromycin eye drops 2x / day for 3 days, dexametas at low doses and daily pseudomembranous debridement	Day 1: cough, flu myalgia, nausea and headache. Day 4: dispneu. Day 7: Transfer to ICU with a diagnosis of acute respiratory syndrome and pneumonia.	Swab test held on day 7 with a positive result (+).	Swab test held on day 17 and 20 but the results were negative 0%.
CheemaM,etal <sup>[19]</sup>	Case Report	Keratoconjunctivitis as The Initial Medical Presentation of The Novel Coronavirus Disease 2019 (COVID-19)	Canada	29-year-old woman who tested positive for COVID-19	Day 1: unilateral mild conjunctivitis  Day 3: photophobia, palpebral edema, secretions.	Treated as keratoherpes conjunctivitis with valacyclovir 500 mg PO TID and moxifloxacin  1 drop of QID	Day 1: patient also complained of rhinorrhea, cough, and nasal congestion. The patient denies the presence of fever the patient consumed medicine containing antipyretic, so that the complaints of fever cannot be eliminated	Swab test held on day 8 with a positive result (+).	Swab test held on day 6 with a negative result(-). 0%.

					<p>Mucoid secretion, small pseudodendritic in inferior temporal cornea, follicle, conjunctiva injection, and small subepithelial infiltrates (0.2 mm) with overlying epithelial damage in the superior temporal limbus. Vision Sharpness 20/20</p>		yet		
					<p>Day 5: severe conjunctival injection, pain, ipsilateral preauricular lymphadenopathy, more subepithelial infiltrates with overlying epithelial damage. Vision Sharpness :20/20</p>	<p>Previous therapy was continued and diagnosed as epidemic keratoconjunctivitis</p>			
					<p>Day 6: decreased visual acuity 20/40 with pinhole to 20/30, ipsilateral and cervical preauricular lymphadenopathy, follicular conjunctivitis, conjunctival injection, diffuse subepithelial infiltrates throughout the cornea with overlying epithelial damage</p>	<p>Valacyclovir was continued.</p>			

Wu P, <i>et al.</i> <sup>[15]</sup>	<i>Case Series</i>	Characteristics of Ocular Findings of Patients With Coronavirus Disease 2019 (COVID-19) in Hubei Province, China	China	38 patients tested positive COVID-19	Twelve patients had ocular symptoms such as conjunctival hyperemia, chemosis, epiphora, and discharge 12/38 (31%).	Not reported	Based on PC-NCP guidelines: Ocular manifestations were found in 4 cases of moderate patients (fever and / or respiratory distress), 2 cases with severe degrees (symptoms and confirmation of CT-scan images), and 6 critical cases (severe dyspnea). with RR $\geq 30$ / min, SpO <sub>2</sub> $\leq 93\%$ , and PaO <sub>2</sub> / FiO <sub>2</sub> $\leq 300$ , respiratory failure / shock / multiple organ dysfunction. 1 patient developed epiphora as the first symptom of COVID-19	38 tested positive	2 of 12 Patients tested positive (+). 2/12 (16
Xia J, <i>et al.</i> <sup>[14]</sup>	<i>Cohort</i>	Evaluation of Ocular Symptoms and Tropism of SARS-Cov-2 in Patients Confirmed with COVID-19	China	30 patients tested positive COVID-19	1 Patient showed symptoms of viral conjunctivitis with conjunctival congestion and discharge. 1/30 (3.3%).	Not reported	The patient did not complain of fever or severe respiratory disorders	Swab test held 2 times within in the next 2 days and both tetsted positive results (+).	Swab test held 2 times within in the next 2 days and both tested positive results (+). 100%.
Hong N, <i>et al</i> <sup>[22]</sup>	<i>Cohort</i>	Evaluation of Ocular	China	56 patients tested positive	15 patients had ocular manifestasion	Not reported	6 of these patients showed ocular	56 tested positive (+)	1 of 15 tested positive (+).

		Symptoms and Tropism of SARS-Cov-2 in Patients Confirmed with COVID-19		COVID-19	such as pain, discharge, dry eyes, itching, foreign substances, floaters, and hyperemia. 15/56 (27%).		manifestations as symptoms prodrome, 8 patients had concurrent systemic manifestations, and 1 patient complained of floaters after the treatment given.		1/15 (6,7%)
Zhang X, et al <sup>[23]</sup>	Cross Sectional	The Infection Evidence of SARS-COV-2 in Ocular Surface: A Single-Center Cross-Sectional Study	China	72 patients tested positive COVID-19	2 patients showed similar symptoms of hyperemic conjunctivitis, conjunctival congestion and fluid secretions. 2/72 (2.8%).	Gancyclovir drops	Both patients Shows ocular manifestation before systemic manifestation such as fever, cough and pneumonia	72 patients tested positive (+)	1 of 2 patients tested a positive (+) ½ (50%)
Güemes-villahoza, et al <sup>[24]</sup>	Cross Sectional	Detecting SARS-CoV-2 RNA in Conjunctival Secretions: Is It A Valuable Diagnostic Method of COVID-19	Spain	36 patients tested positive COVID-19	18 patients showed symptoms of conjunctivitis. reported 3 patients experiencing symptoms with bleeding subconjunctiva, 2 patients had pterygium, 1 patient had red eyes associated with anti-glaucoma eye drops, 1 patient had hordeolum and 1 patient had pingueculitis that had previously occurred	Not reported	One of systemic manifestation described was acute pneumonia. In patients with conjunctivals swab test positive gained conjugtivitis had no complaints pneumonia	36 patients tested positive (+)	Swab test on 18 patients presented with conjunctivitis 1 conjunctival positive swab (5.6%), and on 18 non-conjunctivitis patients were also seen 1 conjunctival positive swab (5.6%).
Kumar K, et al <sup>[25]</sup>	Case series	Presence of Viral RNA of SARS-Cov-2 In	India	45 Patients tested positive COVID-19	None of them shows manifestations ocular 0%.	Not reported	The systemic manifestations described include fever, cough, painful swallowing, and shortness	45 patients tested positive (+)	1 asymptomatic patient showed a positive result (+)

		Conjunctival Swab Specimens of COVID-19 Patients					of breath. 14 of them were asymptomatic		
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In other cases, patients with conjunctivitis were tested through conjunctiva swab and the result was COVID-19 positive.<sup>[14,17]</sup> A shocking revelation was an asymptomatic patient, ocular and systemic, showed COVID-19 positive result from conjunctiva swab.<sup>[8]</sup>

Several reports of conjunctivitis therapy in COVID-19 patients were reported, although quite many allegedly were not. Scalinci *et al.*, in their case reports, stated that the therapy given to conjunctivitis in COVID-19 was 4 times/day moxifloxacin eye drops for 5 days continuously.<sup>[21]</sup> Navel *et al.*, reported in a mild conjunctivitis case, the patient was instructed to keep the eyes area clean, irrigate with saline solution and artificial tears drop. Several days later, the symptoms worsen to hemorrhagic conjunctivitis with pseudomembrane, so the physicians prescribed azitromycin teardrops 2 times/day for three days, low dose dexamethasone, and daily debridement of pseudomembranes.<sup>[18]</sup> Valacyclovir 500 mg TID peroral and Moxifloxacin one drops QID was reported as a therapy for herpetic keratoconjunctivitis related to COVID-19 patient, with pseudodendritic infiltrate or expansion of infiltrate with preauricular lymphadenopathy in epidemic keratoconjunctivitis. Topical antibiotic and corticosteroid combination therapy for this case was also reported. Ofloxacin, tobramycin, gancyclovir teardrops, and artificial teardrops also were recorded as treatment of choice both in single conjunctivitis and conjunctivitis with dry eye.<sup>[19]</sup>

## DISCUSSION

We have found several studies regarding ocular manifestation in COVID-19 patients, although it's quite limited because of the rarity of ocular symptoms in the patient. Further reports and data were needed to understand more about ocular manifestation and the therapy in COVID-19 patients.

### Ocular clinical manifestation in COVID-19 patient

Several non-specific ocular manifestations in COVID-19 patients were already reported. The percentages varied, range from 0,8 – 50%. The most general ocular manifestation was hyperemic conjunctiva and the finding of the eye mucus. Other reported manifestations were viral conjunctivitis with the specific follicle, dry eye, hemorrhagic conjunctivitis with pseudomembrane, herpetic keratoconjunctivitis, epidemic keratoconjunctivitis, vision decrease, even floaters after treatment. The SARS-CoV2 transmissions suspected mainly originate from the conjunctiva. Firstly, the virus will attach its genetic material to the ACE2 receptor in the conjunctiva and cornea epithelial.<sup>[9,10]</sup> Secondly, the nasolacrimal duct acted as a connection to the upper respiratory tract so the infection to the host begins.<sup>[11]</sup> However, the researchers and specialists still have doubts about this theory. Several arguments were: the small amount of ACE2 receptor in the conjunctiva is smaller than in lungs and kidney.<sup>[11-14]</sup> The attachment between this receptor on conjunctiva epithelial with viral protein is weaker compared with the receptor in the lungs<sup>[12,15]</sup> lactoferrin and IgA secretory component in the tears may eliminate the virus, tears flushing also participate in leading the virus inside nasal cavity through the nasolacrimal duct.<sup>[11,12,16]</sup> Lange *et al.* reported that ACE2 was not transcribed in conjunctiva tissue, which means the replication of SARS-CoV-2 could happen in small occurrences.<sup>[17]</sup>

Although there was a lot of doubtful hypotheses regarding virus transmission through the conjunctiva, the writer agrees with WHO recommendation for medical staff to protect their eyes with goggle or face shield, prevent touching the eyes, nose, and mouth mucous membrane when on the work.<sup>[21]</sup>

### Correlation between ocular and systemic manifestation in COVID-19 patient

Various studies reported that ocular manifestation may present with or without systemic manifestation. It may appear without systemic symptom, as a prodromal symptom, simultaneously occur with a systemic



symptom, when the moderate-severe acute respiratory syndrome took place, or even as a residual symptom after treatment was finished, known as floaters.<sup>[14,21]</sup> The viral invasion mechanism and the viral load were presumed related to affect those conditions. An experimental study with *rhesus macaque* monkey highlighted the importance of ocular conjunctiva's transmission route in SARS-CoV-2 infection. In this study, five rhesus monkeys were inoculated by  $1 \times 10^6$  TCID<sub>50</sub> from SARS-CoV-2 through several pathways, through conjunctiva (CJ group), intratracheal (IT group), and intragastric (IG group). The results showed highly viral load and the lungs were the most affected organ in IT groups. Mild interstitial pneumonia and viral load were observed in the CJ group through a conjunctival swab test one day after inoculation. Only in the IT group, the viral load was found in the rectum 1-7 days after inoculation, and the decreasing weight was also observed. However, in the IG group, the viral load was non-existent. In the CJ group, nasolacrimal viral load was higher and lungs lesion was more localized and milder compared to the IT group.<sup>[19]</sup> These findings may be proof of infection through ocular transmission in COVID-19 patients. Thus, medical workers should protect their eyes when interacting with the patient.

### **Relevancy between RT-PCR conjunctiva swab and ocular manifestation in COVID-19 patient**

In the COVID-19 patient confirmed through nasopharyngeal swab, there was still no clear percentage that the result of conjunctival swab will also the same. It may vary to 0-100% in all cases. The COVID-19 patient with complaints related to the eyes may show positive or negative results from the conjunctival swab test.<sup>[14,18,19]</sup> A cross-sectional study conducted by Güemes-villahoz, *et al.*, reported that 1 from 18 COVID-19 patients with systemic manifestation without conjunctivitis may show positive results from the conjunctival swab test (5,6%).<sup>[24]</sup> Kumar K, *et al.*, stated in their case series that asymptomatic COVID-19 patient (without systemic and ocular symptom) shows a positive result from conjunctival swab test.<sup>[15]</sup> To explain the whereabouts of this virus in conjunctiva secretion and tears, several suitable hypotheses were the direct virus inoculation through droplet transmission, virus migration through the nasolacrimal duct, or hematogenic infection on the lacrimal gland.<sup>[8]</sup> The sensitivity test of RT-PCR method for SARS-CoV-2 has not been reported optimally yet. The result was approximately 50-60% so there is a possibility of false-positive and false-negative in this test. Nevertheless, until this day, nasopharyngeal swabs still hold the gold standard as a confirmation of COVID-19 patients. The reason for the small virus amount in conjunctival swab may relate to the short period of early infection, and the sample collection can not be performed at the correct time, or there is no SARS-CoV-2 in the patient's eyes respectively. The window period of virus transmission may be missed.<sup>[11]</sup> The RT-PCR method used in these studies may be not sensitive enough to detect SARS-CoV with a small amount of viral load. Xia *et al.* stated that the small number of collected tears and conjunctival secretion were insufficient to detect the virus through RT-PCR, which leads to negative results. The damage of genetic component and sample contamination also may be involved in a positive or false-negative result.<sup>[14]</sup> In this reviewed literature, the correct sample collection period also has not yet been mentioned. Serial examination or sample follow up were also not being performed, usually only one-time examination per sample. Only reports from Xia J, *et al.*, and Navel V, *et al.*, who performed twice RT-PCR method in conjunctival swab with time interlude three and two days respectively, and both results were positive.<sup>[14,18]</sup> Sample collection from trained personnel, such as ophthalmologists/optometrist is important. The conjunctival swab is expected to be performed as early as possible if the ocular symptom was found. Loon *et al.*, recommended the use of Shirmer filter paper, or capillary micropipette on inferior fornix palpebra to get good sample quantity and quality, as the other studies recommend so.<sup>[14]</sup>

### **Therapy of conjunctivitis given to COVID-19 patient**

Not all studies above explained about therapy given to the COVID-19 patient with eyes' symptoms. Generally, topical antiviral and antibiotic, corticosteroid, and artificial teardrops were given in COVID-19 patients.<sup>[18,19,21]</sup> There was one case that was given additional peroral antiviral.<sup>[19]</sup> These therapies were given in consideration to manifestation and level of severity. The topical antiviral given in the reviewed article was gancyclovir teardrops, while the topical antibiotics were moxifloxacin, azithromycin, ofloxacin, and tobramycin teardrops.<sup>[16,21]</sup> Meanwhile, the topical corticosteroid used was low dose dexamethasone.<sup>[18]</sup> Valacyclovir was also given per-orally.<sup>[19]</sup> There is still no further study about the most suitable therapy for conjunctivitis in COVID-19 patients. Although acyclovir, valacyclovir, cidofovir, and famciclovir were reported to be used safely in viral conjunctivitis, the effectivity in the COVID-19 patient

is still unknown.<sup>[14]</sup> Povidone-iodine 1% teardrop also has been reported to be useful to treat adenoviral conjunctivitis, and a shows anti-SARS-CoV activity in vitro, although this treatment has not yet been given to the COVID-19 patient.<sup>[15]</sup>

## CONCLUSION

Scientific study related to ocular manifestation in COVID-19 patients is still limited, although it is understandable, for the rarity of cases and this pandemic situation. Ocular manifestation in COVID-19 patient may seem similar to viral conjunctivitis in general, or other manifestation. Ocular manifestation may be related to systemic manifestation as a prodromal symptom, simultaneously appear with the systemic symptom, occur when the moderate-severe acute respiratory syndrome begin, or as residual floaters after treatment ended. The asymptomatic eyes do not indicate the virus is absent, and vice versa. Several factors such as the small concentration of viral load, time choice of sample collection, and ineffective detection method. Further research and study are needed to understand the potential of conjunctiva transmission and suitable therapy regarding conjunctivitis in COVID-19 patients. Nonetheless, we emphasize the importance of eye protection for medical workers, despite the presence or absence of ocular manifestation.

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## CONFLICT OF INTEREST

The authors are declare no conflict of interest.

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