# SOUVENIR

3<sup>rd</sup> International Conference

## On

Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

**Organized By** 

# INDIAN ACADEMICIANS AND RESEARCHERS ASSOCIATION

(IARA)

On

9<sup>th</sup> October 2022



Virtual CONFERENCE

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The theme of this conference revolves around bringing Agriculture, Biological, Medical and Environmental Sciences research areas on a single platform. This conference will draw 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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#### ANALYSIS AND DETERMINATION OF SOLAR POTENTIAL USING MODELS 1 BASED ON CLIMATIC PARAMETERS FOR THE DISTRICT OF SAN MATEO, PROVINCE OF HUAROCHIRI, LIMA – PERU

Mendoza Andía, Jhon Américo Rafael, Salvador Gutiérrez, Beatriz Luisa, Sánchez Cortez and Lozano Pedro

# EFFECTS OF MULCHING ON GROWTH AND YIELD OF OKRA (ABELMOSCHUS 2 ESCULENTUS) CV. HARITHA

A. L. Manasar, S. Sutharsan, L. M. Rifnas and S. L. Iqbal

# PILL IDENTIFYING INTELLIGENT MODEL USING DEEP LEARNING, IOT, AND3MOBILE APPLICATION FOR VISUALLY IMPAIRED CHRONIC PATIENTS

Brunda G and R. Pushpalatha

#### SPATIAL DISTRIBUTION OF WATER EXTRACTABLE URANIUM AND ITS 4 CORRELATION WITH HEAVY METALS IN SOILS OF BARAN DISTRICT OF RAJASTHAN

R. Meena, S. K. Sharma, A. K. Sharma and A. Rani

#### **CRYPTOCURRENCIES AND BLOCKCHAINS: WILL IT BE THE VACCINE AGAINST** 5 **CORRUPTION**

Shekhar Gehlot and Dr. Amit Dhall

#### **DIFFERENT ANTIMICROBIAL METABOLITES DERIVED FROM MARINE** 6 MICROORGANISMS AND THEIR APPLICATIONS

Pranchal Rajput, Kundan Kumar Chaubey and Paresh Chandra Sau

#### EFFECT OF DIFFERENTIATED APPROACH OF TEACHING BIOLOGY TO CLASS 7 XI STUDENTS WITH SPECIAL FOCUS ON SPATIAL THINKING SKILLS 7

Mrs. R. Meenakshi and Dr. K. Sheeba

FRACTAL AND CHAOS THEORY FOR BIOLOGICAL FUNCTIONS AND 8 BIOMEDICAL SYSTEMS

Sanjeev Kimothi, Pooja Joshi, Kundan Kumar Chaubey, Ishteyaaq Ahmad and Paresh Chandra Sau

1



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

## **Organized By Indian Academicians And Researchers Association**

On

9<sup>th</sup> October 2022

#### **COMPARATIVE ANALYSIS OF CONVENTIONAL BUILDING AND GREEN** 9 **BUILDING BY USING BUILDING INFORMATION MODELING (BIM) TOOLS**

Sweetie P. Sontakke

# **TO COMBAT ANTIBIOTIC RESISTANCE – BY EXPLORING NATURAL** 10 **ANTIBIOTICS**

Rajeswari Saripilli and Pikkala Shirisha

#### PHARMACOGONOSTICAL, PHYTOCHEMICAL, AND ANTI MICROBIAL ACTIVITY 11 OF LEAVES OF FICUS MOLLIS VAHL

B. Kavitha

#### A STUDY ON EMPLOYEE RETENTION STRATEGIES OF AUTOMOBILE 12 INDUSTRIES IN INDIA

Dr. Amit Kumar, Dr. Ramanjeet Singh and Garvita Sharma

#### **BEFOREHAND AND AFTERMATH OF PLATING ON ANTERIOR CERVICAL** 13 SPINAL BLEND

Dr. Yogesh Khandalkar, Dr. A Muhammed Anzar, Mrs. Bhagyashree Warude, Ms. Priyanka Chhajed, Dr. Swati N. Deshmukh, Dr. Ravindra B. Patil and Dr. Aniket Garud

#### **REVIEW ON SOFTWARE TOOLS AND ALGORITHMS USED FOR THE** 14 **PREDICTION OF HUMAN LEUKOCYTE ANTIGEN (HLA) TYPES**

S. Balamurugan and Dr. S. Prasanna

#### **CYBERNETIC ISCHEMIC STROKE SPOTTING WITH MACHINE LEARNING** 15

Shravya Vasanth P and Pushpalatha R

#### **DETECTION OF HIPPOCAMPUS REGION AS BIOMARKER FOR DIAGNOSIS OF** 16 **ALZHEIMER'S DISEASE IN 3D IMAGES BY USING DEEP LEARNING TECHNIQUES**

Rachel Cynthia V, Swetha S, Thamizhvani T. R, Hemalatha R. J and Josephin Arockia Dhivya A

#### **EFFECT OF DIFFERENT CROP ESTABLISHMENT TECHNIQUES AND TREND IN** 17 **RICE PRODCUTIVITY**

Dr. S. Anandha Krishnaveni



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

## Organized By Indian Academicians And Researchers Association

On

## 9<sup>th</sup> October 2022

# IMPACT OF MINING ACTIVITIES ON DIVERSITY OF ACULEATA (BEES, ANTS &18WASPS) UNDER ORDER HYMENOPTERA IN PROVINCES ADJOINING HINGULA18OPEN CAST PROJECT, TALCHER, ANGUL, ODISHA, INDIA18

Udayanath Sahoo and Yashaswi Nayak

#### **REVIEW ON DIFFERENT SYNTHETIC ROUTES OF SUBSTITUTED QUINOLINE** 19 **MOIETY AND ITS BIOLOGICAL UTILITY** 19

Dr. Yogita Gulabrao Bodkhe and Dr. Jyotsna V. Khobragade

**TWO FORESTS SPECIES WITH A POTENTIAL FOR REFORESTATION AND** 20 **TIMBER PRODUCTION** 

Andrés Flores

#### ANTIMICROBIAL ACTIVITY AND PHYTOCHEMICAL ANALYSIS OF 21 LAGERSTROEMIA MICROCARPA AGAINST BACTERIAL PATHOGENS

Gunasekaran T, Akilan P, Chandrasekaran V and Kannan A

BIOSYNTHESIS OF SILVER NANOPARTICLES USING EUPHORBIA HIRTA AND 22 EUPHORBIA HETEROPHYLLA METHANOLIC LEAF EXTRACT AND THEIR SYNTHESIS, CHARACTERIZATION, ANTIBACTERIAL AND ANTIOXIDANT ACTIVITY

Shameem A, Akilan P, Chandrasekaran V and Bhadusha N

#### CHITOSAN APPLICATION IN AGRICULTURE

Dr. S. S. Meenambiga, K. Aishwarya Lakshmi and A. Angelin

#### ENTRY OF HOST ANTIBODIES THROUGH NEMATODE CUTICLE – A MODEL OF 24 ANTI-FECUNDITY IMMUNITY IN HELMINTH INFECTIONS 24

Sahu B. R and Ravindran B

#### EVALUATING THE FEASIBILITY OF SELF-SUSTAINING SETTLEMENT IN 25 CENTRAL INDIA CONCERNING SUSTAINABLE DEVELOPMENT: CASE STUDY OF NAGPUR

Vandna Sharma and Monika Patle

23



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

## Organized By Indian Academicians And Researchers Association

On

## 9<sup>th</sup> October 2022

#### EVALUATION OF URANIUM CONCENTRATION IN GROUND WATER AND ITS 26 HUMAN HEALTH IMPACT IN A PART OF ATRU TEHSIL OF BARAN DISTRICTS OF HADOTI REGION OF RAJASTHAN, INDIA

R. Meena, S. K. Sharma and A. Rani

#### **RECENT IMPLICATIONS OF STEM CELL IN POST-SURGICAL INTERVENTION** 27

Sheetal Soni, Uditi Handa, Sonali, Ujjwal Sanduja, Srishti Vats, Yash Gera and Kumar Guarve

# ROLE OF VERNACULAR ARCHITECTURE IN THERMAL COMFORT OF 28 LUCKNOW

Vandna Sharma and Shradha

#### STUDY OF ADH1B (SNP-ARG47HIS) & ALDH2 (SNP-GLU487LYS) POLYMORPHISM 29 IN ALCOHOL DEPENDENCE 29

Suman Deshwal, Minakshi Vashist and Rajiv Gupta

# AN INNOVATORY AND SUSTAINABLE APPROACH FOR GREEN SYNTHESIS OF 30 BIOPLASTIC 30

E. R. Atshaya, T. R. Indumathi and G. Rubalakshmi

#### ANALYSIS OF MONTHLY VARIATION IN WATER QUALITY OF WARDHA RIVER 31 USING PHYSICO-CHEMICAL PARAMETERS 31

Manisha N. Gulhane

# ANTIBACTERIAL AND ANTIFUNGAL STUDIES ON THE BIOSOOT OF COMMON 32 WEEDS

R. Sanjeev Kumar, N. Hemalatha, V. Suganthi, S. Bhuvaneswari, B. Sampathkumar and N. K. Udaya Prakash

#### ASSESSMENT QUALITY OF LIFE OF DIABETICS IN MOROCCO: ABOUT 140 33 CASES

Amina Boufars, Hind Hami, Karim Sbai Idrissi, Abdelmajid Soulaymani, and Sanae Elkafssaoui

# FACILE SYNTHESIS OF CARBON NANOPARTICLES USING AN AQUATIC WEED, 34 EICHHORNIA CRASSIPES

K. Sindhu Priya, S. Bhuvaneswari, B. Sampathkumar and N. K. Udaya Prakash



## On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

# Organized By Indian Academicians And Researchers Association

On

9<sup>th</sup> October 2022

FACTORS RESPONSIBLE FOR LEUKEMIA CASES IN INDIA	35
Paras Sharma, Kundan Kumar Chaubey, Dinesh Nalage and Aashna Sinha	
KNOWLEDGE, AWARENESS AND ATTITUDE OF NURSING STUDENTS ON CHILDREN'S ORAL HEALTH PRACTICES IN PREVENTING EARLY CHILDHOOD CARIES- A CROSS SECTIONAL STUDY	36
Vijayparthiban Sethuraman, Sriram Kaliamoorthy, Ramya Sugumaran, Agila Samidorai and Mahendirakumar Nagarajan	
MICROBIAL METABOLITES AND RECENT ADVANCEMENT	37
Sapna Yadav, Aashna Sinha, Kundan Kumar Chaubey, Upendra Singh, Shivani Tyagi, Maya Datt Joshi and Deen Dayal	
PHYTOCHEMICAL APPROACHES TO COVID-19 TREATMENT WITH NANO- HERBAL DRUGS AND VACCINE POTENTIAL PLANT CANDIDATES- A REVIEW	38
Mansi Singh, Siva Prasad Panda, Sanjesh Kumar, Kundan Kumar Chaubey and Maya Datt Joshi	
UNDERSTANDING ECO-INNOVATIONS – A STUDY	39
Dr. Manita Matharu	
MEDICAL STUDENTS AND ENGLISH FOR MEDICAL PURPOSES	40
Saba Hussain Quadeer and Dr. Mandvi Singh	
CLINICAL PHARMACY	41
Kombade Rohit Ram	
DIAGNOSIS AND CLINICAL MONITORING OF SYSTEMIC LUPUS ERYTHEMATOSUS	42
Rutuja Byale, Niranjan Nadiwade, Anand Piske and Dr. Aparark Moholkar	
INFLUENCE OF PH IN ELECTROKINETIC TREATMENT OF COMPOST	43
Anil Kurmana	

5



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

## Organized By Indian Academicians And Researchers Association On

9<sup>th</sup> October 2022

#### LOSARTAN POTASSIUM ONCE-DAILY SUSTAINED-RELEASE MATRIX TABLETS: 44 FORMULATION AND IN VITRO ASSESSMENT

Sumit Awale, Dr. S. N. Nagoba, Niranjan Nadiwade, Shraddha Patil and Rutuja Byale

MIRROR BOX THERAPY IN HEMI-SPATIAL NEGLECT	45
Priyanka Anand, Prof. Umasankar Mohanty and Dr. Suresh Mani	
NATIONAL EDUCATION POLICY – 2020: ISSUES & CHALLENGES	46
Dr. Kirtankar R. V	
POTENTIAL IMPLICATION OF AYURVEDA FOR THE MANAGEMENT OF DERMATOLOGIC DISORDER: PSORIASIS	47
Devsuni Singh and Prof. Suman Pant	
PREVENTION OF WORK-RELATED LOW BACK PAIN IN SWEEPERS; A CASE STUDY	48
S. Ruhi Afroze, R. Astha, A. S. Shanmukavel, Ahamed Latheef, R. Bringesh, V. Vijay and Vinodhkumar Ramalingam	

#### **RHEUMATOID ARTHRITIS: A REVIEW OF DIAGNOSIS AND TREATMENT** 49

Asmita Zodage, Ms. V. M. Gaikwad, Rutuja Byale, Rachita Malshette and Dr. O. G. Bhusnure

#### THE ROLE OF PHYSIOTHERAPY IN ERGONOMICS IN MANAGING NECK PAIN 50 FOR BUS OPERATORS 50

J. Afreen Fathima, S. Akshaya, K. Nalini, J. Sarmila Fathima and Vinodh Kumar Ramalingam

#### A SURVEY ON VIRTUAL TRAINING EXPERIENCE BY LIC ADVISORS IN MUMBAI 51 REGION 51

Priti Dhadge

#### ACTIVITIES OF DAILY LIVING IN CHILDREN WITH LEARNING DISABILITIES: 52 PERFORMANCE, LEARNING, AND PARTICIPATION 52

Shrisruthi S and Malarvizhi D



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

## **Organized By Indian Academicians And Researchers Association**

## On

9<sup>th</sup> October 2022

AN EMPIRICAL STUDY ON HELMET USAGE AMONG YOUTH	53
Lokendra Kumar D, Dr. Smita Kavatekar and Ms. Sheetal V. Hukkeri	
PLANTS GENETIC RESOURCE CONSERVATION IN INDIA: A REVIEW ARTICLE	54
Tambe S. S	
STUDY OF BIO INDICTORS PLANTS OF MAUSAM RIVER MALEGAON	55
Tambe S. S	
ROLE OF WOMEN IN LABOUR MARKET IN INDIA	56
Dr. Koel Roy Choudhury	
NEURAL NETWORK APPROACH FOR ESTIMATION OF LACTATE	57
Marlon Sequeira, Jivan Parab and Gourish Naik	
RATIONALE FOR MULTIDISCIPLINARY EDUCATION: IMPERATIVES OF BEST TEACHING-LEARNING PRACTICES IN HIGHER EDUCATIONAL INSTITUTIONS	58
Prof. A. Suryanarayana and Dr. B. Mohan	
A REVIEW ON ANOMALY BASED NETWORK INTRUSION DETECTION SYSTEM	59

Madhumita Panda



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

## **Organized By Indian Academicians And Researchers Association**

On

## 9<sup>th</sup> October 2022

#### ANALYSIS AND DETERMINATION OF SOLAR POTENTIAL USING MODELS BASED ON CLIMATIC PARAMETERS FOR THE DISTRICT OF SAN MATEO, PROVINCE OF HUAROCHIRI, LIMA – PERU

Mendoza Andía, Jhon Américo Rafael, Salvador Gutiérrez, Beatriz Luisa, Sánchez Cortez and Lozano Pedro

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#### ABSTRACT

This paper analyzes a procedure to determine the solar potential through solar radiation estimation models based on climatic parameters, applying them at a local level, where there are no measurement records. The study was carried out in the district of San Mateo, province of Huarochirí, in the highlands of the Lima region, Peru. The use of three estimation models was proposed as calculation alternatives, based on air temperature, since this variable is measured in the vast majority of automatic stations. The use of these models responds to the relationship between temperature and radiation and its practical application, including attenuation due to atmospheric effects. The models used were Bristow-Campbell, Hargreaves-Samani and Annandale, of which the Bristow-Campbell model was selected, which showed better results compared to its peers, obtaining an R2 of 0.818, RMSE of 1.14, MBE of 0.06 unlike of the R2 of 0.921 and 0.921, RMSE of 1.27 and 1.27, MBE of -0.52 and -0.52 of Hargreaves-Samani and Annandale respectively.

To develop the models, a 10-month time series was recorded from its own automatic weather station, complementing the information with a 9-year record of historical data extracted from the free NASA application (POWER) for the auxiliary measurement points located in the whole district. The NASA data were validated by correlating them with the data obtained on the ground giving acceptable results for their application. This made it possible to generate a data log mesh with the measurement points in order to perform the simulation in the free QGIS software and obtain the radiation distribution maps. The annual average radiation was 5.26 kWh/m2day, which is highly profitable.

It is considered that the methodology developed in this research is applicable to estimate the distribution of incident solar radiation at the local level, always considering the conditions of the study area. The global solar radiation values produced in this thesis can be used in the design and performance calculation of solar applications for the San Mateo district.

Keywords: Solar potential, climatic parameters, Huarochirí



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#### EFFECTS OF MULCHING ON GROWTH AND YIELD OF OKRA (ABELMOSCHUS ESCULENTUS) CV. HARITHA

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#### ABSTRACT

Mulch has a great role in soil moisture conservation through modification of microclimatic soil conditions. It helps to prevent weed growth, reduce evaporation, and increase infiltration of rainwater during the growing season. Different types of mulches have been used to obtain good crop growth and yield. Hence considering this a field experiment was laid out at the Sri Lanka School of Agriculture – Palamunai. to evaluate the effect of different types of Mulching materials in the growth and yield performances of Okra (Abelmoschus esculentus L.) under field conditions. There were five treatments (T1- Control,T2-Paddy straw, T3-Mango leaves, T4- Polythene, T5-Paddy husk) with four block and the experimental units were arranged in the Randomized Complete Block Design (RCBD) manner. Growth parameters those were plant height, stem girth, number of leaves, days for 50% flowering, yield components and total yield were evaluated for the ability of the different mulching materials in Okra cultivation. Collected data were analyzed using ANOVA procedures by SAS statistical software. Plant height showed significant difference on later days of crop growth. Higher plant heights were observed in T3 and T4 and the lowest was found where no any mulching material applied. Stem girth showed not significant (p>0.05) during the entire growth period for all the mulching materials used. No. of leaves showed significant (p < 0.05) values except 2nd week. It was found that, highest number of leaves observed in T4 where polythene mulch applied and the lowest number of leaves found in control treatment where no any mulch applied. Early days of harvesting, yield and yield components showed significant (p < 0.05) differences between the treatments. On the basis of yield, Application of polythene mulch showed not significant with application of paddy straw on 4th harvesting. Paddy straw and paddy husk showed similar performances with T4. Even though polythene mulches showed better performances in most of the tested parameters, it can be concluded that, paddy straw and paddy husk were the viable options next to polythene mulch as an environmental friendly strategy.

Keywords: Abelmoschus esculentus, Environmental friendly, Growth, Mulch, Weeds



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#### PILL IDENTIFYING INTELLIGENT MODEL USING DEEP LEARNING, IOT, AND MOBILE APPLICATION FOR VISUALLY IMPAIRED CHRONIC PATIENTS

#### Brunda G and R. Pushpalatha

Department of Computer Science and Engineering, Visvesvaraya Technological University, Mysore

#### ABSTRACT

Aging is a natural phenomenon characterized by loss of vision or memory. It is a known fact that man gets weaker as he ages. According to the World Health Organization, worldwide, at least 2.2 billion people suffer from near or distance vision loss. Around 285 million people worldwide suffer from vision impairment, including 140 million people over the age of 50 and 110 million older people with low vision along with multiple chronic diseases. The highest proportions of visually impaired people are over 50 with multiple chronic diseases. When taking medication, these people are more likely to take the wrong medication or even forget to take it. To address this concern, this paper proposes a smart model for pill selection using deep learning, Internet of Things, Android application and cloud-based management system. The proposed system will help reduce the risk factors of wrong medication and provide a safe environment for the blind and visually impaired with safe medication.

**Keywords:** Artificial intelligence, Raspberry Pi, Internet of Things, Deep learning techniques, drug pill recognition, image sensor, image processing, medication-use safety, visually impaired.





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#### SPATIAL DISTRIBUTION OF WATER EXTRACTABLE URANIUM AND ITS CORRELATION WITH HEAVY METALS IN SOILS OF BARAN DISTRICT OF RAJASTHAN

R. Meena<sup>1</sup>, S. K. Sharma<sup>2</sup>, A. K. Sharma<sup>3</sup> and A. Rani<sup>4</sup>

<sup>1</sup>Department of Chemistry, Govt. College Kota, Rajasthan, India <sup>2, 3, 4</sup>Department of Pure and Applied Chemistry, University of Kota, Rajasthan, India

#### ABSTRACT

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The present study was focused on quantitative analysis of 40 samples of soils collected from different locations of baran districts of hadoti region of Rajasthan, India, for leachable uranium, and few other heavy metals (Cu, Zn, Fe, Co, Al and Pb) and their correlation. The water soluble metal content ranged as: Fe (0.0824to 1.655mg/l), Co (0.0824 to 0.4431mg/l), Cu (0.0488 to 0.2218mg/l), Zn (0.1458 to 0.3308mg/l), Al (0.0581 to 1.106mg/l), Pb (0.007 to 0.1081mg/l) and U (3.04ppb to 7.39ppb) in the soil solution of study area. Gamma radiation level in the study area was found between 68nSv/h to 114nSv/h with a mean value of 90.33nSv/h. The concentration of heavy metals in all soil samples was not found above the critical toxic level prescribed by the WHO and BIS. The heavy metals are non- biodegradable thus uranium, heavy metals such as Pb, Cu, Zn, Al, Co, and Fe impose health hazards due to the transfer of these contaminants into food chain, from soils. In the present work an attempt has been made to correlate uranium concentration with few heavy metals in the soil leachates. A positive correlation of copper (0.055), zinc (0.23), iron (0.30), cobalt (0.37) and aluminium (0.58) with uranium concentration has been observed. However, negative correlation of uranium with lead (-0.31) is observed. Therefore, continuous monitoring of heavy metals in soils must be ensured to aware the consumers to mitigate the health related problems occurring due to uranium and other heavy metals.

Keywords: Heavy metals, Uranium, Soils leachates, LEDFluorimeter, AAS.



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9<sup>th</sup> October 2022

#### CRYPTOCURRENCIES AND BLOCKCHAINS: WILL IT BE THE VACCINE AGAINST CORRUPTION

#### Shekhar Gehlot and Dr. Amit Dhall

#### ABSTRACT

In traditional sense, the word corruption was used against the Kings and the nobles who served for the common disadvantage. Therefore, the word 'corruption' was chiefly associated with the public office and administration. However, with time, the corruption, a habit, has become so deep rooted in the society that it has now transcended the boundaries and has entered almost all affairs of the economic cycle, be it bad loans, black marketing, monopiles, tax evasion or recent surge in the medicinal prices in the wake of Covid-19. People are fighting with corruption in own ways and this fight gave birth to some new technological inventions which could ultimately be a vaccine for corruption, Cryptocurrency and Blockchain. Could these new fintech help combatting the corruption?

Keywords: Corruption, Bitcoin, Blockchain, Financial Inclusion, Land Registry.





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9<sup>th</sup> October 2022

#### DIFFERENT ANTIMICROBIAL METABOLITES DERIVED FROM MARINE MICROORGANISMS AND THEIR APPLICATIONS

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#### ABSTRACT

Marine organisms are that microorganisms which lives in the aquatic conditions. There are billions of microorganisms are present in the water of sea, oceans and lakes. We can see these organisms only with the help of microscope. These microorganisms contain the aptitude to construct bioactive composite or secondary metabolites which shows the various antimicrobial activities against the different pathogenic organisms. In this review it was concluded that the marine microorganisms i.e. bacteria, fungi, algae, sponges, cynobacteria etc. Which lives in the salt water(water of oceans and seas). This review also includes many types of bioactive compounds or secondary metabolites produced by the marine microorgansms which belongs to the different classes. These secondary metabolites show various antimicrobial activities against different activities against. The main purpose of this review is draw attention to the different antimicrobial metabolites which are isolated from the various marine microorganisms that are present in aquatic environment, study about their antimicrobial properties which they shows against many pathogenic organisms and multiple applications of these bioactive compounds for various purposes in different fields.





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## 9<sup>th</sup> October 2022

#### EFFECT OF DIFFERENTIATED APPROACH OF TEACHING BIOLOGY TO CLASS XI STUDENTS WITH SPECIAL FOCUS ON SPATIAL THINKING SKILLS

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#### ABSTRACT

The researcher made an initiative on trying out this Action Research using GCAT4 tools to experiment implementing new teaching strategies and bring in freshness into classroom transaction. It was decided to experiment it out with a subject of the researcher's choice and interest, that is Biology and wanted to try out the interpretations of assessment tools in relation to the National Curriculum. Performance of seven students of Grade XI ISC (Indian School Certificate) in the subject Biology, was analysed through their school exams and a specially developed pre-test followed by the administration of assessment tools of GCAT4. The findings provided an opportunity to discuss with teachers and students to understand the preferred pattern of learning style of each student and then evolved a plan using differentiated approaches with reference to spatial skills and try out whether it really had any effect on their enhanced performance in Biology. This also gave an opportunity to choose on fundamental concepts and give a differentiated approach to cater to the type of learning profile generated using the GCAT4 tools.

**Keywords:** Differentiation, Spatial Thinking, Cognitive ability, Biology, differentiated strategies, Verbal Reasoning





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On

9<sup>th</sup> October 2022

# FRACTAL AND CHAOS THEORY FOR BIOLOGICAL FUNCTIONS AND BIOMEDICAL SYSTEMS

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#### ABSTRACT

Fractal Theory has been reviewed for the bio-functional and biomed-ical complex systems. The chaotic approach is a critical component of the theo-retical framework and is to be used in analyzing complex biological structures such as chromatin structures. Fractality is a metric of complexity in biological functions, it is an indicator of the complication level of the self-similar structure, while chaos is a sort of dynamic behavior that usually produces totally arbitrary patterns. Fractal measures in vivo could be used to supplement or perhaps predict the efficiency of painful health therapy. The fractal technique can be used to assess carcinogenesis, tumor progression, chemoprophylaxis, and therapy with the convergence of modern sensing techniques in nano-scale spectroscopic techniques, which is a prospective biomarker. The mathematical principles of fractals and chaos in biological systems are presented in the context of the condition of health treatment and their significance. Fractality in different biological functions including the heart has now been investigated and measured the dosing quantity of chaos and fractal level. As excessive amounts of chaos and fractal complexity are harmful to biological predictions, it is suggested measurement and assessment of a healthy measure of chaos may serve strategy for biomedical applications. This paper describes a comparative highlighting of the fractal and Chaos theory for biological functions and biomedical systems to explore the health-science, because of its computational machine learning-based demands and capability in mathematical complexity.

Keywords: Fractal and Chaos, biological function, health, carcinogenesis, Ma-chine Learning



#### On

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## 9<sup>th</sup> October 2022

#### COMPARATIVE ANALYSIS OF CONVENTIONAL BUILDING AND GREEN BUILDING BY USING BUILDING INFORMATION MODELING (BIM) TOOLS

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#### ABSTRACT

The scope of sustainability in every industry is rapidly increasing nowadays. Similarly, the construction industry is also demanding changes in planning and construction of projects in order to bring in sustainability. 40% of energy consumed worldwide is used for the usage and operation of buildings. Global concern for the environment has necessitated reduction in energy demand and consumption for buildings. BIM tools such as Autodesk Revit, Green Building Studio (GBS) and Insight 360 can be utilized to analyze the building performance in terms of various parameters such as energy use intensity, life cycle energy use/cost, annual carbon emissions, monthly heating and cooling loads, monthly peak demand and monthly electricity and fuel consumption. By employing green materials in the conventional building model, the conventional building model is modified into a green building model. Using BIM, the use of artificial resources can be greatly reduced by replacing them with the use of renewable energy resources thereby saving energy. To show how efficient BIM is, the results of the performance of the conventional and green building models are compared. The present work attempts to compare the changes in operational and life cycle cost of a building through modification of various parameters including the use of green materials, green roof, energy efficient structures and alternative energy sources like solar panels. It is also discussed how to employ building information modeling (BIM) to effectively comprehend various cost management. The findings of this study indicate that the life cycle cost of energy efficient buildings can be significantly lower compared to conventional buildings. The study emphasizes the usefulness of BIM in estimating the main factors that affect building cost.

Keywords: BIM, Energy Efficient, Green Building Studio (GBS), Insight 360, Sustainability.



#### On

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On

9<sup>th</sup> October 2022

#### TO COMBAT ANTIBIOTIC RESISTANCE - BY EXPLORING NATURAL ANTIBIOTICS

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#### ABSTRACT

Antibiotic resistance develops in no time and is a big matter to concern, it possess a serious global threat of growing concern to human, animal and environmental health. The main reason of antibiotic resistance is emergence, spread and persistence of multi-drug resistant. Once resistance developed, the usage of antibiotics will no longer has effect on our body and leads to serious complications like toxicity, dose dumping etc., so the different strategies to combat the antibiotic resistance are establishing natural antibiotic resources. Nature is a generous source of compounds which is having the potential to treat diseases including infectious diseases. Spices like turmeric, ginger, alliums are indispensable for the preparation of our daily food and are reported to possess compounds, which have varied beneficial biological effects and also prevent the microbial spoilage of food. The present research work was aimed to take different natural resources and the chosen resources are turmeric, garlic and ginger. Different extraction processes are performed and the obtained extract of pure natural polymers and also evaluated for antibiotic activity. The antibiotic activity of all the species were found to be in the order of garlic, ginger and turmeric. The study indicates that the selected species have antibiotic activity. The further studies are needed to study the activity with different concentrations of the selected polymer and hence, suitability can be a hope in replacing the synthetic antibiotics, which will be very much useful for combating antibiotic resistance.

Keywords: Antibiotics, Natural antibiotics, Ginger, Garlic, Turmeric, Resistance.





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## 9<sup>th</sup> October 2022

#### PHARMACOGONOSTICAL, PHYTOCHEMICAL, AND ANTI MICROBIAL ACTIVITY OF LEAVES OF FICUS MOLLIS VAHL

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#### ABSTRACT

Ficus mollis vahl. is an deciduous tree under the family Moraceae. This study was carried out with an objective to investigate pharmacogonostical, phytochemical analysis of leaf extracts of a medicinal plant, F. mollis and their antimicrobial activities against pure microbial cultures of Bacillus subtilis, Pseudomonas aeruginosa, Candida albicans, Aspergillus niger. Leaves crude drug for microscopic, organoleptic and behavior of the leaf powder upon treatment with different chemical reagents was observed and reported. The preliminary phytochemical investigation for the leaves extracts proved the presence of pharmacologically active compounds such as alkaloids, phenols, flavonoides, glycosides, tannins, lignins, saponins and steroids. The maximum antimicrobial activity was observed in methanol and aqueous extracts against A. niger and P. aeruginosa with zone of inhibition 25.75 and 25.00 mm. It is also reported that there is no activity in benzene extract on all organisms. Minimum inhibitory concentrations on all organisms with leaf extracts ranges from 0.32 to 3.62 mg/ml compared to 10 mg/ml of Nystatin. Antimicrobial activity of leaves extracts proved the plant contains antimicrobial compound which can be further developed as phytomedicine for the therapy of infection. All these findings serve as preliminary data for further studies on F. mollis.

Keywords: Ficus mollis Vahl. Moraceae, Phytoconstituents, Pharmacognostical, and Antimicrobial activity.





#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

## 9<sup>th</sup> October 2022

# A STUDY ON EMPLOYEE RETENTION STRATEGIES OF AUTOMOBILE INDUSTRIES IN INDIA

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#### ABSTRACT

The Automobile Industries have now come to see the value of retention management. Nevertheless, the focus of the test was on identifying the existing management methods and objectives, with the goal of providing the organisations with recommendations and suggestions to enhance their retention tactics. The evaluation is focused on maintenance and also contributes to the process of determining whether employees are generally satisfied by taking into consideration factors such as work culture, remuneration, preparation, and coordination. The investigation will investigate the variables that contribute to employee turnover, such as a lack of work satisfaction, commitment to the organisation, the availability of a variety of roles, pay and benefits, and any other direct or indirect factors that may be involved.

The evaluation helps with understanding how the employee retention methods get ready for the growth of a business, and it does this by providing assistance. The HRD is able to identify the specific as well as the authoritative aims, goals, and arrangements of the selected vehicle organisations. The investigation will provide data that will enable the organisation to think about the following aspects, such as the Employee Retention system that is required so that the organisation can lessen its cost of enrollment as well as establish a good workplace in the hopes that the resolve of representative will be high, which is much more needed in this harsh world.

A tentative conclusion is that encouraging worker maintenance techniques inside an organisation will lead to improved human relationships and the elimination of mistakes within the scalar chain, both of which will lead to an improved working environment. The findings of the examination provide information on how to reduce stress, how to enhance performance, how to raise the worker's standard of living expectations, and what kinds of preparations need to be made. In the end, it involves acknowledging all of the financial and incidental benefits so that the rate of representative turnover is kept to a minimum and representative maintenance is maximised.

The discoveries from the investigation will supply the result in such a way as to ensure that it will give benefit both to representatives and manager, which will consequently all things considered all together accelerate progress of the organisation inside of a restricted capacity to concentrate time.

Keywords: employee retention, human relationships, decent workplace



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On 9<sup>th</sup> October 2022

#### BEFOREHAND AND AFTERMATH OF PLATING ON ANTERIOR CERVICAL SPINAL BLEND

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#### ABSTRACT

In the field of spine surgery, anterior cervical decompression and interbody fusion are frequently used to treat a wide range of illnesses like degenerative disc disease, traumatic conditions, tuberculosis, and tumours. The prime motto of the research paper is to provide the detail account of cervical fusion plating technique and to provide the proper inclusion exclusion criteria along with the case study to interns and specialist doctors. Our reports suggest up to 87% recovery and paper provides the steps of surgery as well as the follow Up Protocol and parameters to be accessed during the same. In final conclusion we can suggest technique as a game changer in mentioned state of affairs for the betterment of the patient.

**Keywords:** cervical fusion plating, frontal cervical spinal blend, degenerative disc disease, traumatic cervical conditions, cervical tuberculosis, and cervical tumours.





#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

## 9<sup>th</sup> October 2022

#### REVIEW ON SOFTWARE TOOLS AND ALGORITHMSUSED FOR THE PREDICTION OF HUMAN LEUKOCYTE ANTIGEN (HLA) TYPES

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#### ABSTRACT

The Human Leukocyte Antigen (HLA) gene system on Chromosome 6 is one of the most extensively studied regions due to its importance in transplantation and association with autoimmune, infectious and inflammatory diseases. HLA genes that are most intensively studied are the classical HLA genes, such as HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, and HLA-DRB1. These HLA genes are highly polymorphic alleles among the individuals in a population. As many changes in the allele, computational imputation-based HLA typing is used extensively and in machine learning it is possible through supervised learning. There are many methods are available for doing HLA imputation from HLA and SNP genotype data using different algorithms. The present study carefully examined the research articles and found that the Ensemble methods, Random Forest and Boosting algorithmsare the few among the effective methods for HLA imputation. Attribute bagging is a technique which improves the accuracy and stability of classifier ensembles using bootstrap aggregating and random variable selection. Ensemble classifier method consists of basically two phases, in the first phase, a set of base-level classifiers is generated and in the second phase, a meta-level classifier is learned which combines the outputs of the base-level classifiers. The Bioconductor software packages for imputing (assigning) HLA types using SNP data are available and it uses the R statistical programming language. In the present study the details of algorithms used for HLA imputation are discussed.

Keywords: Human Leukocyte Antigen; Ensemble methods; Random Forest; Boosting algorithms; Bioconductor, R, HIBAG



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

9<sup>th</sup> October 2022

#### CYBERNETIC ISCHEMIC STROKE SPOTTING WITH MACHINE LEARNING

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#### ABSTRACT

The prediction of the stroke type is a growing problem for world health. The current approach is manual, time-consuming, and calls for more qualified physicians. One of the most prevalent disorders nowadays in medicine is the prognosis of strokes. As early stroke illness and type prediction is challenging, our suggested method makes use of machine learning techniques to predict early stroke disease and associated kinds. Most research on robot-aided stroke diagnosis has concentrated on computer tomography (CT) and magnetic resonance imaging (MRI). The machine learning technique offers a generalized approach to resolving the issues. To predict the onset of a stroke infection, it uses a neural system that does order calculation. By using machine learning to foresee the onset of stroke illness, we can enhance the accuracy of the analytical forecasts and raise their consistency. Stoke prediction automation utilizing machine learning is the proposed approach.





#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

9<sup>th</sup> October 2022

#### DETECTION OF HIPPOCAMPUS REGION AS BIOMARKER FOR DIAGNOSIS OF ALZHEIMER'S DISEASE IN 3D IMAGES BY USING DEEP LEARNING TECHNIQUES.

Rachel Cynthia V, Swetha S, Thamizhvani T. R\*, Hemalatha R. J and Josephin Arockia Dhivya A Department of Biomedical Engineering, Vels Institute of Science, Technology and Advanced Studies India

#### ABSTRACT

Alzheimer's disease (AD) is a brain disorder that slowly destroys memory and thinking skills and, eventually, the ability to carry out the simplest tasks. The accurate diagnosis of Alzheimer's Disease (AD) plays an important role in patient treatment, especially at the disease's early stages, because risk awareness allows the patient to undergo preventive measures even before irreversible brain damage. Although many recent studies have computers used to diagnose of AD, most machine detection methods are limited by congenital observations. AD can be diagnosed but not predicted at its early stages. As prediction is only applicable before the manifestations of the disease. In the proposed methodology, Deep Learning (DL) techniques are used to detect Hippocampus Region as a Biomarker for early diagnosis of AD.

Keywords: Deep Learning, Biomarker, Prediction, Hippocampus region, Stages observation, Segmentation.





#### On

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On

9<sup>th</sup> October 2022

# EFFECT OF DIFFERENT CROP ESTABLISHMENT TECHNIQUES AND TREND IN RICE PRODCUTIVITY

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#### ABSTRACT

AN TOT

Rice (Oryza sativa L.) is the most important staple food crop for more than half of the world's population, including regions of high population density and rapid growth. It provides about 21 per cent of the total calorie intake of the world population. In India rice is mostly cultivated through transplanting, in spite of the fact that transplanting is cumbersome practice and requires more labour. The inadequacy of irrigation water and scarce labour coupled with higher wages during the peak period of farm operations, invariably lead to delay in transplanting. To overcome this problem, farmers are gradually switching over to direct seeding under puddle condition. Wet seeding (Sowing pre-germinated seed on to puddle soil) reduces substantially the amount of labour needed for growing of rice crop. The wet seeding also helps to harvest the crop by 8-10 days earlier than transplanting. It eliminates the use of seedlings and operations such as nursery preparation care of seedlings, pulling, bundling, transporting and transplanting .The demand for more irrigation water and seed rate with transplanting and direct sowing methods signifies the importance of the other methods of rice crop establishment such as system of rice intensification (SRI) to save water. Experiment was conducted during Kharif 2019 in sodic soil comparing different methods of crop establishment techniques. The results revealed that with proper water and weed management under SRI and wet sowing farmers can get similar yields as that of transplanted rice.

Keywords: Rice, wet seeding, transplanting, SRI, productivity



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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## 9<sup>th</sup> October 2022

#### IMPACT OF MINING ACTIVITIES ON DIVERSITY OF ACULEATA (BEES, ANTS & WASPS) UNDER ORDER HYMENOPTERA IN PROVINCES ADJOINING HINGULA OPEN CAST PROJECT, TALCHER, ANGUL, ODISHA, INDIA

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#### ABSTRACT

The present study was conducted in provinces adjoining to Hingula Open Cast project of Talcher to document the baseline data of aculeate fauna. The study area was regulated at the elvevation between Lat -200 55'51" North & 200 57'24" North and Long-850 08'13" East & 850 11'14" East. A thorough review was completed during January – 2021 to December – 2021. Aculeata being organic pointers of natural quality assumes a significant part in the genuine working of the biological system. These predacious insects are dynamic during the daytime. Much has been said and done about the deficiency of biodiversity in the mining pockets of Talcher, however very little information is available about the variety and variability of Aculeata. Because of this, the current investigation is a fundamental endeavor to consider the Aculeata in periphery of Hingula Open Cast Project (OCP), Talcher, Angul, Odisha. A complete number of 2239 Aculeata with 5 families and 36 species were recorded during the whole investigation time frame.Shannon – Weiner index (H') was 3.40 in Mallibandha village, followed by 3.41 in Chitalpur village, 3.43 in Kumunda village, and 3.39 in Banbaspur village. Margalef's richness (Dmg) index was found to be 5.25 in Mallibandha, 4.99 in Chitalpur, 5.21 in Kumunda, and 5.09 in Banbaspur village. Other than this, it was noticed that individuals from the family Formicidae were observed to be 52.16% followed by Apidae 39.25%. The most minimal population was foound in Vespidae 0.80%, Sphecidae 0.75%, and Megachilidae with 0.13%. separately. Sweepy net & colored pantraps were used for collection of species.

Keywords: Indicators, Regimen, Biodiversity, Hingula, Aculeata.



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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9<sup>th</sup> October 2022

#### REVIEW ON DIFFERENT SYNTHETIC ROUTES OF SUBSTITUTED QUINOLINE MOIETY AND ITS BIOLOGICAL UTILITY

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#### ABSTRACT

Now a day's many new diseases are emerging such as malaria, cholera, tuberculosis etc. It was a great job for scientist to face big challenges. These studies didn't have any limit, curiosity increased, developing the discovery of new pathogens and their diseases resulting in discovery of innumerable techniques over them. From ancient time Quinoline was extracted from tree and found to be very effective to treat malaria. Many synthetic routes were developed to synthesize Quinoline. Present study focuses on the various synthetic routes for Quinoline synthesis and its biological application studied by various researchers.

Keywords: maleria, antibacterial, antioxidant, synthesis etc.





#### On

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On

9<sup>th</sup> October 2022

# TWO FORESTS SPECIES WITH A POTENTIAL FOR REFORESTATION AND TIMBER PRODUCTION

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#### ABSTRACT

P. oocarpa Schiede ex Schltdl., and P. douglasiana Martínez support the forest industry because they produce sawn wood, resin, chips, posts, needles, cones, and seeds, and also are used during reforestation and restoration zones. The aim of this study was to define the amount of P. oocarpa and P. douglasiana plants produced in nurseries by state and their timber volume for harvesting for the industry. The reforestation potential was defined using two effective reforestation efforts, while the annual and average timber production was estimated from the databases of the species included in the state reports from Mexico. For P. oocarpa, a total average 13 436 040 plants were produced in eight states, where Chiapas, Guerrero, and Nayarit had the higher production; while 2 641 236 plants were produced in three states for P. douglasiana, in which Nayarit reached the higher amount. For both species, total plants had a potential to reforest 14 615.71 ha. The average total volume produced was 77 288.19 m3: P. douglasiana had the higher timber volume produced (57 093.30 m3) that P. oocarpa (20 194.88 m3). Jalisco state was the largest timber producer for P. douglasiana (93.8%) while Chiapas for P. oocarpa (50.24%). The production values estimated intent to be a basis for decision-making during forest management and conservation.

Keywords: Conifers species of Mexico, forest management, Pinus douglasiana, P. oocarpa.





#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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9<sup>th</sup> October 2022

#### ANTIMICROBIAL ACTIVITY AND PHYTOCHEMICAL ANALYSIS OF LAGERSTROEMIA MICROCARPA AGAINST BACTERIAL PATHOGENS

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#### ABSTRACT

Globally, it can be said that the majority of traditional medical practises frequently use medicinal plants to treat both acute and chronic wounds. In light of this, numerous plants from tropical and subtropical climates have been examined for their capacity to heal wounds. Due to their bioactive components, medicinal plants are known to harbour potential entophytic bacteria. This involved the acetone and methanol extraction of the L.microcarpa. Preliminary phytochemical constituents of L.microcarpa were examined. The extract was carried out in two solvents methanol and acetone. The methanol extracts show the presence of alkaloids, flavonoids, steroids, Terpenoids, phenols, tannin and carbohydrates. The agar disc diffusion method was then used to determine the antimicrobial activity of the L.microcarpa methanolic extract against reference strains (Escherichia coli, Bacillus subtilis, Staphylococcus aureus, Salmonella typhi, Bacillus cereus, Candida albicans, Aspergillus niger, Trichophyton rubrum, Aspergillus fumigatus and Microsporum gypseum). In antibacterial activity S. typhi shows better inhibition when compared to other organisms, whereas in antifungal activity C.albicans, A.niger and M.gypseum have similar inhibition activity. This inhibition can be seen when using the individual extracts and when using ineffective antibiotics with them at lesser quantities. With antibiotic-susceptible and -resistant bacteria, the antimicrobial activity of plant extracts and phytochemicals were assessed. Additionally, these plants contain bioactive phytochemicals that have potential medical benefits for the treatment of a variety of infections. Therefore, especially in traditional medical procedures, these herbs may be useful in the treatment of acute and chronic wounds.

Keywords: L.microcarpa, Medicinal plant, Antimicrobial activity, Phytochemical Analysis



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

## 9<sup>th</sup> October 2022

#### BIOSYNTHESIS OF SILVER NANOPARTICLES USING EUPHORBIA HIRTA AND EUPHORBIA HETEROPHYLLA METHANOLIC LEAF EXTRACT AND THEIR SYNTHESIS, CHARACTERIZATION, ANTIBACTERIAL AND ANTIOXIDANT ACTIVITY

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#### ABSTRACT

Biosynthesized nanoparticles are gaining popularity due to their distinctive biological applications as well as biologically active secondary metabolites from plants that aid in green synthesis. In order to synthesize silver nanoparticles, this research used the antibacterial and antioxidant properties of the leaves of Euphorbia hitra (E.hitra) and Euphorbia heterophylla (E.heterophylla) in methanolic leaf extract. The reaction of 5% methanolic leaf extract of E. hitra and 1 mM silver nitrate developed AgNPs. The antibacterial and antioxidant activity of the AgNPs was properly evaluated and described. Silver nanoparticles (AgNPs) synthesized by E.hitra and E.heterophylla were examined using a variety of methods, including scanning electron microscopy, Fourier transform infrared (FTIR) spectroscopy, and UV-visible spectroscopy (SEM). To identify the phytochemicals in charge of the reduction and capping of the biosynthesized AgNPs, phytochemical analysis was carried out. Utilizing the DPPH, ABTS, and Reducing Power Assays, the antioxidant activity of the biosynthesized nanoparticles was assessed. They were examined for antibacterial activity against Salmonella typhi, Escherichia coli, Bacillus subtilis, Staphylococcus aureus and Klebsiella pneumonia. With a significant zone of inhibition and dosagedependent inhibitory activity, the biosynthesized nanoparticles were more effective against S.typhi and E.coli than other organisms. It is important to even further utilise the biosynthesized E. heterophylla AgNPs as a potential candidate for antioxidant and antibacterial activities.

**Keywords:** E.hitra, E.heterophylla, Methanolic extract, UV-visible spectroscopy, FTIR, SEM and Green synthesis.



#### On

## Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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## 9<sup>th</sup> October 2022

#### CHITOSAN APPLICATION IN AGRICULTURE

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#### ABSTRACT

Chitin, a polysaccharide which is present in the exoskeleton of crustaceans, arthropods and molluscs. It is also found in cell wall of fungi. Chitin act as a derivative for chitosan. Chitosan is an excellent biopolymer which is used in many fields. It is utilized for the production of commercially important products. Chitosan can be extracted from many sources such as shrimp, crab shells and seafood waste. Chitosan is used for several purposes in the field of agriculture. It exhibits powerful properties like antimicrobial and antioxidant activity. Chitosan nanocomposites are made into sprays to boost immunity against fungal pathogens. Chitosan based nanoparticles play a role as fertilizers. This may reduce the use of chemical fertilizers. Soil is not affected since chitosan is biodegradable substance. It can be used as pesticides and herbicides. Chitosan elicits immune response of plants. It increases yield and quality of food products. Chitosan performs the function of plant growth regulators when given appropriately. It is used to control postharvest diseases in crops. Chitosan nanoparticles help plants to overcome abiotic stress. Saline stress is one of the harmful types of stress. Exogenous chitosan treatment enhances plants' tolerance to saline stress. The extraction of chitosan from crustaceans is discussed in this review. Some common applications of chitosan in agriculture are included in this review paper.

Keywords: Chitin, Chitosan, Nanoparticles, Agriculture

AN TON



#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

# 9<sup>th</sup> October 2022

#### ENTRY OF HOST ANTIBODIES THROUGH NEMATODE CUTICLE – A MODEL OF ANTI-FECUNDITY IMMUNITY IN HELMINTH INFECTIONS

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#### ABSTRACT

AN TON

Filaria parasites are metazoan organisms and the host immune effector mechanism against these worms is critical to understand. The possible effector mechanisms against such parasites existing in the hosts can be anti-larval, anti-microfilarial, anti-adult and anti-fecundity immunity. Although the defense mechanism against larvae and microfilariae of filarial parasites has been understood with reasonable clarity, no mechanistic explanation is however currently available explaining the mode of action of protective immune responses against large adult stage filarial parasites. In the current investigation, we put an effort to demonstrate that, host immune effector mechanism can be operational inside adult filarial parasites and can be an explanation for existence of anti-fecundity immunity against adult stage parasites. To understand that, molecules can get entry into these worms, we pulsed female worms with a dye, FM1-43, and demonstrates its internalization by the process of endocytosis. Further, pulsing of worms to filaria specific antibodies indicates the entry of these macromolecules into uterine cavity of worms and binding to intrauterine embryonic stages. All these investigations were performed using confocal microscopy and flow cytometry. We conclude that, anti-fecundity immunity could be operational inside filarial parasites.

Keywords: Anti-fecundity immunity, Intra-uterine stages, FM1-43, endocytosis, flow cytometry.



### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

# 9<sup>th</sup> October 2022

#### EVALUATING THE FEASIBILITY OF SELF-SUSTAINING SETTLEMENT IN CENTRAL INDIA CONCERNING SUSTAINABLE DEVELOPMENT: CASE STUDY OF NAGPUR

#### Vandna Sharma<sup>1</sup> and Monika Patle<sup>2</sup>

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#### ABSTRACT

The majority of the developing world saw tremendous industrial expansion and progressive wealth creation throughout the second half of the 20th century. In developing cities compared to developed ones, this recurrent urbanization resulted in an unstable population explosion. This study intends to determine and analyze various aspects of self-sustaining settlements and also derive relevant indicators to find out whether the current self-sustaining communities of the selected region are favorable for achieving sustainability. The goal of this article is to gather information and discuss issues associated with unauthorized settlements thereby implementing sustainable development strategies so that resource consumption is reduced.

Keywords: sustainability, self-sustaining, community, population



#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

# 9<sup>th</sup> October 2022

#### EVALUATION OF URANIUM CONCENTRATION IN GROUND WATER AND ITS HUMAN HEALTH IMPACT IN A PART OF ATRU TEHSIL OF BARAN DISTRICTS OF HADOTI REGION OF RAJASTHAN, INDIA

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#### ABSTRACT

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Uranium concentrations in ground water samples collected from some villages of Atru tehsil of Baran districts of Rajasthan have been measured using a LED fluorimetry technique. The source of water is ground water and the water sources are mainly hand pumps, tube wells and open wells. The uranium concentration in ground water samples is found to vary from 1.1ppb to 13.1ppb in pre monsoon with a mean, median, mode, standard deviation value of 4.09ppb, 3.91ppb, 4.10ppb, 2.66ppb and 2.4ppb to 15.6ppb in post monsoon with a mean, median, mode, standard deviation value of 5.8ppb, 5.25ppb, 5.10ppb and 3.21ppb. Along with uranium, its associated physico-chemical parameters of water such as pH, electrical conductivity, temperature, total alkalinity, phenolphthalein alkalinity, total hardness, magnesium hardness, calcium hardness, chloride, fluoride, sulphate, phosphate, nitrate, total dissolved solids (TDS) and oxidation reduction potentials (ORP) were also determined using standard Bhabha Atomic Research Centre (BARC) protocols (1). Statistical tools were applied to analyze the data and its spatial distribution. The study will be helpful in identification of the health risks associated with uranium and other physico-chemical parameters in ground water used as potable water. The analytical data for all water parameters and uranium were cross checked with respect to recommendations given by BIS/WHO limits to identify the pollution level.

Keywords: Uranium, Groundwater, Atru, Baran, LED fluorimetry.



#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

9<sup>th</sup> October 2022

#### RECENT IMPLICATIONS OF STEM CELL IN POST-SURGICAL INTERVENTION

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#### ABSTRACT

Stem cells (SCs) are the non-developed biotic cells that possess the capability of proliferation, self-renewal, conversation the differentiation of a variety of cells, and regenerating tissue mechanisms. The main objective of stem cells is that they are utilized in regenerative medicines and tissue engineering processes. Stem cells are divided into various categories and the major one is adult stem cells which consist of body organs and collagens stem cell categories. Stem cell also plays a crucial role in clinical therapeutic practices mainly in surgical intervention and in various organ disorders. Mesenchyme Stem Cells (MSCs) are also used in clinical research and development processes. According to standard regulatory authorities like the United State Food and Drug Administration (USFDA) Stem cells contribute an important role in cosmetics medications and are the first cell therapy that is used for the removal of wrinkles. There are various kinds of research also performed to find the SCs which improve heart functions and different cardiac cells' capabilities and also modify the muscle cells. They possess the same properties as cancer and can also undergo spontaneous malignant transformations. It plays a crucial role in bone surgery and surgical operations with the help of engineering science and in avascular necrosis. The Different studies also showed that Stem Cell therapy is faster and increases the ligament-tendon healing process. Some researchers also indicate opposite outcomes that Mesenchyme Stem Cells can give increasing the healing of ligament-tendon injuries. It is noticed that the application of SCs therapy is for nerve cell reproduction, different nervous system injuries, and various nerve and muscle diseases. The mainly observed areas of aesthetic surgeries are gastric SCs which can be used for allogeneic fat transplantation. One of the experiments was performed on genetically altered mice and Bone Marrow Mesenchymal Stromal Cells (BM-MSCs) were carried out with the purpose of evaluating the utilization of SCs in diabetic wound therapy. One other experimental study on rats also expresses that the subcutaneous injections of allogeneic BM-MSCs reduce the apoptosis count and are necessary for the survival of the zone. Therefore, stem cells possess both benefits and drawbacks in clinical therapeutic management.

**Keywords:** Stem cells, Mesenchyme Stem Cells, Clinical therapeutic practices, Regulatory authority, Malignant transformation.



#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

9<sup>th</sup> October 2022

#### ROLE OF VERNACULAR ARCHITECTURE IN THERMAL COMFORT OF LUCKNOW

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#### ABSTRACT

Vernacular architecture is known to have mechanisms that enhance indoor thermal comfort of interiors at negligible costs. Therefore, it is often termed as sustainable energy efficient architecture. In modern context when energy saving aspects are very much sought-after aspects, present research work deals with study of traditional vernacular architecture of Lucknow to explore similar aspects. Present study deals with study of nearly 30 traditional vernacular houses in season of winter. The study was conducted in the form of spatial survey accompanied by thermal measurements. During the survey responses of the occupants were carefully recorded on ASHRE and Nicole scale which also gave an idea about the satisfaction level of the occupants. The research involved the study of physical environmental and personal parameters which gave an insight into behavioral adaptations made by occupants for achieving state of thermal comfort. The results showed that planning and designing strategies along with use of local building materials helped in maintaining of indoor thermal comfort even at extreme outdoor environmental parameters along with behavioral adaptive measure by occupants.

Keywords: Thermal Comfort, Vernacular Architecture, Indoor Environment.





#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

# 9<sup>th</sup> October 2022

#### STUDY OF ADH1B (SNP-ARG47HIS) & ALDH2 (SNP-GLU487LYS) POLYMORPHISM IN ALCOHOL DEPENDENCE

#### Suman Deshwal<sup>1</sup>\*, Minakshi Vashist<sup>2</sup> and Rajiv Gupta<sup>3</sup>

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#### ABSTRACT

**Introduction:** Alcohol Dependence is a very serious health issue making a person physiologically and psychologically dependent on alcohol. Various family, twin studies and adoption have identified the importance of heritable influences on individual differences in alcoholism. Researchers have recognized many genes involved in alcohol metabolism. ADH1B &ALDH2 gene that metabolize alcohol have been reported for their role in alcoholism.

**Objective:** ADH1B (SNP-Arg47His) & ALDH2 (SNP-Glu487Lys) polymorphism in alcohol dependence patients of Drug De-Addiction Centre has been evaluated in the present study.

**Methodology:** DNA was isolated from 67 patients and 67 normal individuals with the help of QIAamp DNA blood mini kit method. Quality & Quantiy of sample were measured by the ratio of OD260/OD280 using My Spec Nanodrop. ADH1B (SNP-Arg47His) & ALDH2(SNP-Glu487Lys) polymorphism was analyzed by PCR-RFLP (Polymerase chain reaction - Restriction fragment length polymorphism) method .The ADH1B PCR product 545bp was digested with MaeIII & ALDH2 PCR product 343bp was digested by EcoR1 enzyme.

**Result:** In case of ADH1B (SNP-Arg47His) in exon 3 the presence of a single undigested band of 545bp & in case of ALDH2 (SNP-Glu487Lys) in exon 12 the presence of single undigested band of 343bp on an EtBr stained 2 % AG was detected. The SNP of ADH1B & ALDH2 gene polymorphism was monomorphic in all sample of patients as well as normal individuals.

**Conclusion:** Present study revealed the monomorphic locus of ADH1B (SNP-Arg47His) & ALDH2 (SNP-Glu487Lys) gene. No polymorphism was detected. Only 1 band of Arg in ADH1B & Glu in ALDH2 was observed there by indicating presence of wild type allele. Evaluation of more cases is required to confirm the polymorphism in both the locus & their role in alcohol dependence.

Keyword: Genetics, Alcohol Dependence, ADH1B Polymorphism, ALDH2 Polymorphism.



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# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

9<sup>th</sup> October 2022

# AN INNOVATORY AND SUSTAINABLE APPROACH FOR GREEN SYNTHESIS OF BIOPLASTIC

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#### ABSTRACT

A plastic pollution is one of the century's key challenges affecting our planet's environmental health. Plastic has evolved into a human requirement. The threat to our ecosystem and food sources is growing rapidly as more plastic is thrown in nature and the oceans. The principal environmental issues associated with the widespread use of synthetic plastics are their biodegradability and the creation of toxins when they degrade. Bioplastics are environmentally benign and biodegradable, making them an effective alternative to traditional plastics. Some stakeholders advocate for the utilization of waste feedstock to reduce the amount of virgin land-based resources used to make bio-based polymers. This is concerning because it puts pressure on residual waste streams, incentivizing and establishing markets around them, when trash should be eliminated in the first place, in accordance with the international waste hierarchy. To address these issues, the proposed work aims at the synthesis of completely biodegradable materials, by using sericin and starch synthesized from cocoon waste and curcuma angustifolia respectively with poly vinyl alcohol. The product as such can find its place as a strong replacement of packaging, holding, single use plastic goods and medical applications. Besides waste reduction in terms of use of cocoon waste as a source of sericin also gains significance in terms of well-being of the environment. To best of our knowledge this is the first report of biodegradable plastic film from Curcuma angustifolia starch and sericin.

Keywords: Cocoon waste, Sericin, Curcuma starch, bioplastic film, PVA.



#### On

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On

# 9<sup>th</sup> October 2022

# ANALYSIS OF MONTHLY VARIATION IN WATER QUALITY OF WARDHA RIVER USING PHYSICO-CHEMICAL PARAMETERS

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#### ABSTRACT

The propose of this research is to examine the water quality of the Wardha river in Wardha district. Monthly changes in physical and chemical parameters such as water temperature, turbidity, total dissolved solid, PH, Total hardness, chlorides, alkalinity and nitrates were analysed for a period of one year from 1st January 2021 to 31st December 2021. All metrics were within the acceptable range indicating that the tank is not polluted and suitable for house hold, irrigation and fisheries use.

Keywords: River water quality, monthly variation, water analysis





#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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9<sup>th</sup> October 2022

#### ANTIBACTERIAL AND ANTIFUNGAL STUDIES ON THE BIOSOOT OF COMMON WEEDS

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<sup>3</sup>Department of Botany, Bharathi Women's College, Broadway, Chennai, India

#### ABSTRACT

Introduction: Biosoot is defined as the smoke or soot generated when burning the biomaterials which may either be of plant or of animal origin. These airborne soot are mostly considered as a negative sign as it may cause different respiratory ailment when they become airborne. However, the impact of these airborne soot depends upon characters like their size and their composition. Due to their chemical or organic compounds associated with the biosoot, their biological activity may differ. Aim: In this study an attempt was made to study the antimicrobial potency of the biosoot of few of the common weeds, Calotropis gigantea, Lantana camara and Parthenium hysterophorus. Methods: The shade dried stem of the plants were burnt to the formation of soot and the soot deposited on the surface of tiles exposed were collected. The methanolic extract of the biosoot were evaluated against the bacteria, Bacillus subtilis, Enterococcus faecalis, Salmonella typhi and Pseudomonas aeruginosa and the fungi, Aspergillus flavus and Aspergillus niger using well diffusion method. Results: The soot of Lantana camara showed high antibacterial activity against Enterococcus faecalis and Bacillus subtilis, Calotropis gigantean against Salmonella typhi and the soot of Parthenium hysterophorus recorded high antibacterial activity against the bacteria, Pseudomonas aeruginosa. Similarly the biosoot of Calotropis gigantea showed better antifungal activity against the fungus, Aspergillus flavus and Parthenium hysterophorus against the fungus, Aspergillus niger, Conclusion: The study apply demonstrates the utilization of biosoot as an antimicrobial agent when they are in general considered as waste and hazardous. Further, the biosoot of these plants can be potentially utilized in pharmaceutical and cosmeceutical industries after proper evaluation of their toxicity.

*Keywords:* Biosoot, Antimicrobial, Calotropis gigantea, Lantana camara, Parthenium hysterophorus, Pharmaceuticals, Cosmeceuticals.



#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

9<sup>th</sup> October 2022

### ASSESSMENT QUALITY OF LIFE OF DIABETICS IN MOROCCO: ABOUT 140 CASES

#### Amina Boufars<sup>2</sup>, Hind Hami<sup>3</sup>, Karim Sbai Idrissi<sup>2</sup>, Abdelmajid Soulaymani<sup>3</sup>, and Sanae Elkafssaoui<sup>1, 3\*</sup> <sup>1</sup>Royal School of Military Medical Service, Rabat, Morocco

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#### ABSTRACT

The prevalence of diabetes is increasing, from 6.4% in 2010 to 7.7% of the world's population in 2030.

In this study we are interested in measuring the physical, mental and social scores to assess the quality of life of Moroccan diabetics.

Cross-sectional study of 140 diabetic patients followed at the Mohamed V Military Instruction Hospital in Rabat from the first of November until the end of December 2019. The quality of life is analyzed with the SF 12 quality of life scale. We looked at the assessment of the physical, mental and social scores in diabetic patients. In terms of patient demographics, we analyzed age and sex, and for diabetes characteristics we looked at the type of diabetes and length of illness. To assess the physical quality of life score, we measured general health, physical pain, physical functioning and physical limitation, and to assess the mental and social score, we measured mental health, vitality, social functioning, and emotional limitations.

The average age was  $56 \pm 11.9$  years with 65% of men. The mean time to progression of diabetes was  $9.62 \pm 7.12$  years. Diabetes was type 2 in 92% of patients. The result showed a mediocre physical quality of life and a good psychological quality of life. Quality is related to age, sex, and length of illness.

Keywords: diabetes, quality of life, sex, age.

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#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

# 9<sup>th</sup> October 2022

#### FACILE SYNTHESIS OF CARBON NANOPARTICLES USING AN AQUATIC WEED, EICHHORNIA CRASSIPES

K. Sindhu Priya<sup>1</sup>, S. Bhuvaneswari<sup>2</sup>, B. Sampathkumar<sup>3</sup> and N. K. Udaya Prakash<sup>4\*</sup>

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#### ABSTRACT

Carbon nanoparticles are widely used as catalysis, sensing to optics, antimicrobial activity, and data storage capacity, thus carbon nanoparticles are synthesized in many different ways. However, limitations in the applications in the biomedical fields have been brought about by issues such the usage of toxic precursor chemicals, organic solvents, and creation of toxic by-products associated with current synthesis processes. To overcome this, the study related to facile synthesis of carbon nanoparticles using the leaves of an aquatic weed, Eichhornia crassipes was conducted. Eichhornia crassipes is an aquatic plant considered as a weed as they have no potential bioactivity. In this study, a simple burning of the leaves for the formation of biosoot resulted in formation of nanoparticles. The biosoot thus produced were characterized using dynamic light scattering (DLS), Field emission scanning electron microscopy (FESEM), energy dispersive Spectroscopy (EDS) and X-ray powder diffraction (XRD). The associated compounds along with the carbon nanoparticles were evaluated using Fourier transform infrared (FTIR) spectroscopy, and GC-MS. The DLS study revealed that the particles fall well below 10nm and recorded the second peak in the size range of 200 – 990nm. SEM revealed the size range between 57nm to 194nm and the EDS recorded Carbon as a major material. The 20value recorded in XRD corresponds to Carbon and the size range between 40-76nm. FTIR and GC-MS confirmed the presence of very few compounds associated with that of Carbon Nanoparticles. The study revealed the successful facile synthesis of Carbon nanoparticles in the form of Biosoot of the plant Eichhornia crassipes and they are free of associated chemicals, thus safe.

Keywords: Biosoot, Eichhornia crassipes, Carbon Nanoparticle, DLS, FESEM, XRD, FT-IR, GC-MS



#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

### **Organized By Indian Academicians And Researchers Association**

On

9<sup>th</sup> October 2022

#### FACTORS RESPONSIBLE FOR LEUKEMIA CASES IN INDIA

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#### ABSTRACT

Leukemia is considered to account for 3.5% of all cancer diagnoses and 4% of cancer-related fatalities in the United States. In India, we now record trends in cancer incidence (occurrences per year), disabilityadjusted life years (DALYs) and mortality related to all cancers combined and various types of malignancies for each state. We have selected DALYs as the primary measure for disease burden because it accounts for both death and morbidity, and is recommended by India's National Health Policy for illness monitoring. We begin by describing the overall burden of all malignancies in term of DALYs from 1990 to 2020, then we move on to incidence and mortality. We addressed the trends of ten cancer types, which account for the vast majority of leukemia-related and cancer-related DALYs in India. We also discussed six more cancer types that are in the top ten most common incident cancers in Indian women and men but are not among the top ten cancers generating the most DALYs. The age distribution of DALYs attributable to the kinds of cancer and leukemiais shown. We have also pointed out the important disparities in cancer distribution between men and females. In this paper, we present a summary of GBD findings on the key causes that lead to cancer-related DALYs in India. In four most frequent malignancies, such as leukaemia, exhibited considerable inter-state variation with respect to age. Incidence rate ranging from 3.3 to 11.6 times for the four commonly frequent malignancies (stomach, lip and oral, lung, and breast). Tobacco use was the leading risk factor of cancer and leukaemia in India. Having leukaemia over the last 20 years, CML mortality has been progressively dropping, but AML deaths have been increasing steadily. In conclusion, total cancer incidence did not rise as quickly as previously anticipated among ageing Americans; nonetheless, myeloid leukemia and chronic lymphocytic leukemia (CLL) rates dramatically surpassed those of other malignancies. In this paper we have given a brief overview of factors responsible for leukemia and compared to other cancer cases in India, and major portion are awaited for more future research.

Keywords: India, Cancers, Leukemia, Malignancies, disability-adjusted life years (DALYs), risk factor



### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

# 9<sup>th</sup> October 2022

#### KNOWLEDGE, AWARENESS AND ATTITUDE OF NURSING STUDENTS ON CHILDREN'S ORAL HEALTH PRACTICES IN PREVENTING EARLY CHILDHOOD CARIES- A CROSS SECTIONAL STUDY

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#### ABSTRACT

**Background:** Early child hood caries (ECC) is one of the major burdens in children, but associated with some modifiable risk factors. The nursing students as a part of health care provides, may be first to deliver knowledge on maternal feeding practices and spread awareness on infants diet. Thus, the knowledge, awareness and attitude of Nursing was aimed to be evaluated in the current study.

**Methodology:** A cross-sectional survey was carried at on a sample of 139 participants who were recruited by purposive sampling. A validated pre-tested structured questionnaire was used to assess the aim of the study. The data was recorded by the same questionnaire tool was analyzed and reported as percentages and figures.

**Results:** The observation showed that 45.3% of the participants answered that the first dental visit of the child should be between 6-12 months. The majority (67.9%) knew about the pit and fissure sealants and their application on a Caries tooth (61.9%). Half of the participants knew on the 'pea size 'amount of tooth paste use, and around 48.2% of the believed that topical fluoride must be applied every 6 months. The responses for dietary practices, bottle feeding practices and frequency of dental visits were variably reported by nursing students.

**Conclusion:** The survey showed a reasonable knowledge and awareness of the nursing students about dental health and oral hygiene practices to be carried out for children. The need for awareness about some issues in this regard is also a necessity which the survey highlighted.

Keywords: Awareness, Attitude, Earcly Childhood Caries, Nursing students, Oral Health Practices



#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

### **Organized By Indian Academicians And Researchers Association**

On

9<sup>th</sup> October 2022

#### MICROBIAL METABOLITES AND RECENT ADVANCEMENT

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#### ABSTRACT

The brief history, distinctive characteristics, and potential directions of research on microbial metabolites, such as antibiotics and other bioactive metabolites, are outlined. The roles and diverse bioactivities of metabolites, as well as their microbial origin, variety of generating species, and bioactivity. In addition to being categorized as primary or secondary metabolites, metabolites can also be categorized according to their origin as either intracellular or extracellular. Even though this categorization is often used, the limits are not always well defined. Natural substances derived from microbes have demonstrated their significance in dietary supplements, healthcare and agriculture. Primary metabolites include things like organic acids, amino acids, alcohol, enzymes and vitamins. These substances are used both as health products and in the biotransformation of raw materials to make industrial commodities. On the other hand, secondary metabolites are typically derived from plant or animal tissues and are organic compounds. As a result of their potential to decrease infectious illnesses in people and animals and hence lengthen life expectancy, they are predominantly employed in the biopharmaceutical business. Furthermore, the development of sustainable agriculture is inextricably linked to the function that microbes and their byproducts perform.

The potential quantities of metabolites that may be discovered in the future, the difficulties associated with dereplicating freshly isolated molecules, as well as the latest developments and research opportunities, are also examined. Secondary metabolites are organic substances with many uses that are found in bacteria, fungi, or plants. As they include a wide spectrum of antibiotics, anticancer agents, and various medicinal chemicals, these metabolites play a crucial role in biotechnological and biomedical advancements. In traditional biotechnology, terrestrial plants were seen as a source of secondary metabolites. However, recent molecular and industrial biotechnology developments have made it possible to use microbial metabolites in agriculture and health care.

**Keywords:** Primary metabolites, Secondary metabolites, Antibiotics, Anti-tumor, Growth regulators, Microbial metabolites.



#### On

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On

9<sup>th</sup> October 2022

#### PHYTOCHEMICAL APPROACHES TO COVID-19 TREATMENT WITH NANO-HERBAL DRUGS AND VACCINE POTENTIAL PLANT CANDIDATES- A REVIEW

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#### ABSTRACT

Coronavirus is majorly responsible for mortality burden, and almost every county has to pay price due to alarming rate and severity of the transmission of the virus and the journey of this deadly virus covid-19 to omicron is still ongoing. Herbal plants and spices have received great attention during pandemic because of their pivotal role in treating viruses and against viral symptoms. The current review is emphases on the journey of virus transmission, nanotechnology, phytochemicals and herbal medications used in treatment of coronavirus. Nanotechnology based Curcumin nano formulations isa very essential compound derivative of Curcuma longa, which is a di-phenolic compound. The compound has showngreat medicinal value and potential importance in anti-viral and antibacterial activities. It has been estimated that nano-formulation of curcumin specifically increases its antiviral action by enhancing its bioavailability, solubility, and targetspecific delivery system. Combinations of Nanocomposite formulations of Curcumin have been estimated with different materials like, Solid lipid systems, PLGA, magnetic materials etc. The present review is also enlightening some herbal plants and their phytochemicals showing inhibitory effects against SARS-CoV infection and its replication in dose- dependent manner as well as a potential of Nicotiana benthamianaand other plants as vaccine candidates for the control of SARS infection.

Keywords: SARS-CoV, Pandemic, Herbal Plants, Nano formulations, Phytochemicals



#### On

# Modern Research in Biological, Pharmaceutical, Medical and **Environmental Sciences**

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On

9<sup>th</sup> October 2022

#### **UNDERSTANDING ECO-INNOVATIONS – A STUDY**

Dr. Manita Matharu

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#### ABSTRACT

As a result of the global environmental crisis, which includes a shortage of resources, the degradation of the environment, and pollution, nations from around the globe have been compelled to pay more attention to sustainable development. The development and implementation of environmentally friendly technologies are often regarded as the most efficient and cost-effective means of lowering environmental pressure while maintaining economic competitiveness. Consequently, eco-innovation has become a must for firms seeking a competitive edge and pursuing sustainability in the face of rising environmental pressure.

The primary objectives of this article are to clarify the concept of eco-innovation and emphasize its significance in determining the impact of eco-innovations on overall environmental performance. This study is conceptual in nature based on the reviewed literature. This study also discusses the drivers and motivations for the adoption of eco-innovation. Contributing to a theoretical definition of the idea of ecoinnovation and conceptualizing eco-innovation has a considerable impact on the nature of empirical investigations that are carried out, in addition to the actions that are taken for policy and strategy.

**Keywords:** Eco-innovation, environmental innovation, green innovation





#### On

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On

9<sup>th</sup> October 2022

#### MEDICAL STUDENTS AND ENGLISH FOR MEDICAL PURPOSES

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#### ABSTRACT

The main objective of the research is to investigate attitudes of medical students of India towards English language communication skills as well as the effect of socio-demographic factors on attitudes toward acquiring these skills. In several non-English-speaking nations, disagreements have erupted over the medium of instruction in medical schools. Due to the predominance of English in medical science, a new ESP branch (English for Specific Purposes) known as EMP is being developed (English for Medical Purposes). Although the importance of doctor-patient communication is now recognized in India, the problem of language barriers in healthcare has gained very little attention in the country. As a result of the adoption of English as an international language of science and medicine throughout the past few years, a significant amount of medical research and literature has been created in English. The ability to communicate effectively (CS) is essential for physicians. Patients, after all, place a high value on consultations because they are the most important component of their treatment. CS is an essential and teachable ability; yet, in contrast to their western counterparts, it is not extensively taught in Indian medical colleges.

It is felt that future generations of doctors will be faced with professional demands that can only be handled by taking an approach to the acquisition of competencies that is multidisciplinary in their field. The mobility of the workforce and the continual advancement of information and communication technology are just a few of the reasons why communication skills in foreign languages, particularly English as a global lingua franca in business and science, must be included in doctors' competencies. A survey of students and teachers about the importance of communication skills in English was conducted to determine the attitudes of future professional doctors towards the importance of communication skills in English. The descriptive statistics approaches have been used to describe the outcomes of the study.

**Keywords:** Communication skills; English for specific purposes; English for medical purposes; language needs; needs analysis.



#### On

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On

9<sup>th</sup> October 2022

### CLINICAL PHARMACY

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#### ABSTRACT

Clinical pharmacy is the branch of pharmacy in which clinical pharmacists deliver direct patient care that enhances the use of rational medication and promotes health, wellness, and disease prevention. Clinical pharmacists care for patients in all health care sceneries but the clinical pharmacy movement initially commenced inside hospitals and clinics. Clinical pharmacists bridge the gap between patients and physicians. Clinical pharmacists often work in collaboration with physicians, physician assistants, nurse practitioners and other healthcare professionals. Clinical pharmacists can enter into a formal collective practice agreement with another healthcare provider, generally one or more physicians, that allows pharmacists to prescribe medications and order laboratory tests.Clinical pharmacy may be defined as the health science discipline in which pharmacists are more toward patient care rationalizing medication therapy promoting the health and wellness of people. It is the modern and extended field of pharmacy.

Keywords: Clinical pharmacists, Patient care





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On

9<sup>th</sup> October 2022

#### DIAGNOSIS AND CLINICAL MONITORING OF SYSTEMIC LUPUS ERYTHEMATOSUS

#### Rutuja Byale, Niranjan Nadiwade, Anand Piske and Dr. Aparark Moholkar

#### ABSTRACT

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease that can affect any organ or tissue in the body.

In disease development and activity, genetic predisposition, environmental triggers, and the hormonal milieu all interact.

Clinical manifestations and organ involvement patterns are highly variable, reflecting the complex mosaic of disrupted molecular pathways that culminate in the SLE clinical phenotype.

The pathogenesis of SLE is complicated by the presence of autoantibodies and immunocomplexes, activation of the complement system, dysregulation of several cytokines, including type I interferons, and disruption of nucleic acid clearance after cell death.

Immunomodulators and immunosuppression have altered the natural progression of SLE.Furthermore, morbidity and mortality in SLE are caused not only by direct immune-mediated tissue damage but also by SLE and treatment-related complications such as accelerated coronary artery disease and increased infection risk.In this section, we discuss the diagnostic approach, as well as the etiopathogenetic rationale and clinical evidence for SLE management.

This includes 1) lifestyle changes such as avoiding UV light; 2) prevention of co-morbidities such as coronary artery disease, osteoporosis, infections, and drug toxicity; 3) use of immunomodulatory (such as hydroxychloroquine and vitamin D), and 4) immunosuppressants and targeted therapy. We also go over new upcoming agents and regimens that are currently being tested.

Keywords: Lupus erythematosus, diagnosis, treatment.



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9<sup>th</sup> October 2022

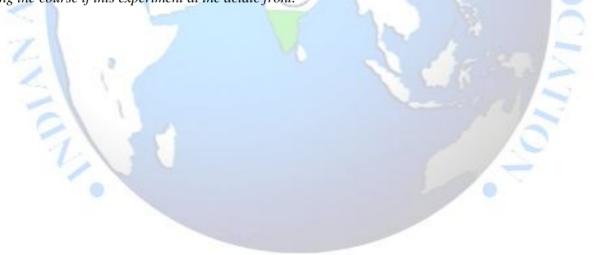
#### INFLUENCE OF PH IN ELECTROKINETIC TREATMENT OF COMPOST

#### Anil Kurmana

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#### ABSTRACT

It is estimated that about 65 million tons of waste is generated annually in India, out of which about 62 million tons is Municipal Solid Waste (MSW). Only about 75-80% of the municipal waste gets collected and out of this only 22-28% is processed and treated and remaining is deposited indiscriminately at dump vards. Hyderabad city generates around 5500MT of waste every day. And only 20% of the waste is used for composting using windrow composting process. Municipal Solid Waste composting is a rapid growing method of solid waste management in Hyderabad and In-Vessel composting is the recent initiative by the Govt. to reduce the Organic Solid Waste generated at the source. As per the Solid Waste Management Rules, 2016, all establishments generating bulk garbage of 100 kg and above every day have to install composting machines on their premises to process the waste. Though there is significant demand for quality compost, presence of trace metals has raised question on its application to agriculture practice. Various remediation technologies have been used to treat the soils contaminated with trace elements. Remediation is also essential for compost which may contain contaminants before applying it as a soil amendment. One such technique which was applied for this study is Electrokinetic remediation. This study was conducted to assess the influence of pH in electrokinetic treatment of compost from Municipal solid waste and Vessel composter. At the end of the experiment, it was found that pH has decreased and created an Acidic front at the Anode end. Accumulation of Metal like Chromium, Copper, Nickel, Lead and Zinc have substantially increased during the course if this experiment at the acidic front.





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9<sup>th</sup> October 2022

#### LOSARTAN POTASSIUM ONCE-DAILY SUSTAINED-RELEASE MATRIX TABLETS: FORMULATION AND IN VITRO ASSESSMENT

#### Sumit Awale, Dr. S. N. Nagoba\*, Niranjan Nadiwade, Shraddha Patil and Rutuja Byale

#### ABSTRACT

The goal of the current study was to create a Losartan potassium sustained release tablet based on hydrophilic and hydrophobic polymers that can release the medication up to 24 hours later at a predefined pace. In order to achieve the desired theoretical release profile, a polymer mixture was used in the preparation of the Losartan potassium matrix tablet. The effects of hydrophilic and hydrophobic polymers on potassium losartan were investigated.

The physical and chemical characteristics of the formulated tablet were also noted. To assess the SR matrix tablet of Losartan potassium, the in vitro release profile was monitored for 24 hours.

Angiotensin II type 1 (AT1) receptor antagonist losartan potassium (LP) has powerful and highly selective antihypertensive action.

With an oral bioavailability of roughly 33% and a plasma elimination half-life of 1.5 to 2.5 hours, it is easily absorbed from the digestive tract. For antihypertensive effects, administration of LP in a sustained release dosage would be preferable because it would keep the drug's plasma concentrations much above the therapeutic value. Batch B4 was created using a combination of HPMC K4M (67.2 mg), HPMC K200M (90 mg), and Eudragit RSPO (112.5 mg), with a drug release of between 94 and 98%, according to an in vitro dissolution profile. The highest similarity factor values were displayed by batch B4 (f2 = 67.76).

Keywords: Losartan potassium, HPMC K4M, HPMC K200M, Eudragit RSPO, Sustained release, Matrix tablets.





#### On

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On

9<sup>th</sup> October 2022

#### MIRROR BOX THERAPY IN HEMI-SPATIAL NEGLECT

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<sup>1</sup>Research Scholar, Lovely Professional University, Jalandhar
<sup>2</sup>Professor, Manual therapy Foundation of India
<sup>3</sup>Associate Professor, Lovely Professional University, Jalandhar

#### ABSTRACT

**Background:** The syndrome of hemi spatial neglect is characterised by reduced awareness of stimuli on one side of space, even though there may be no sensory loss. Although it is extremely common, it has proven to be a challenging condition to understand, and to treat. The estimated prevalence of hemi spatial neglect after non-dominant stroke is 30%. In this study, the effect of Mirror Box therapy exercises for hemi spatial neglect post-stroke shall be evaluated.

**Methods:** In this study, using systematic random sampling technique, 80 participants who met the inclusion criteria were selected and distributed randomly into an experimental group (Group A) and control group (Group B). Mirror box therapy and conventional therapy were given to experimental group and conventional therapy was given to control group. Treatment was given for one month. Statistical analysis of outcome measures was done before and after treatment using non-parametric testing of Kruskal Wallis and Wilcoxon Signed rank tests. 80 patients were randomised to Group A (n=40) and Group B (n=40)

**Results:** For Group A (Mirror Box therapy + conventional exercises) comparison of outcome measures within groups pre-post readings shows significant improvement in scores for Catherine Bergogo scale (MD=8.48) and Kessler Foundation Neglect Assessment Process (MD=8.8). For Group B (Conventional Exercises) comparison of outcome measures within groups pre-post readings shows significant improvement in scores for Catherine Bergogo scale (MD=8.45) and Kessler Foundation Neglect Assessment Process (MD=8.93) with 95% confidence interval(Z=1.96) and p<0.0001. However, comparison between groups suggested no significant improvement in scores for Catherine neglect assessment process (Chi-Square value= 4.832) and Kessler foundation neglect assessment process (Chi-Square test value=0.265) with 95% confidence interval(Z=1.96) and p<0.0001.

**Conclusion:** Pre-Post analysis within the groups suggested that there was a significant improvement in hemi spatial neglect outcome measures in Group-A and B after treatment suggesting that Mirror Box Therapy has significant effect on hemi spatial neglect post stroke. However, Within the group analysis suggested that the results were non-significant showing that mirror box therapy and conventional therapy have similar effects on hemi spatial neglect outcome measures.

Keywords: MBT: mirror box therapy; CT: conventional therapy; CI: confidence interval.



#### On

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On

9<sup>th</sup> October 2022

### NATIONAL EDUCATION POLICY – 2020: ISSUES & CHALLENGES

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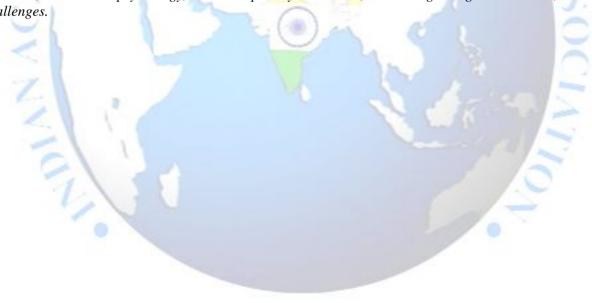
#### ABSTRACT

For the sustainable development of India, it is imperative to provide quality and modern education to all to lead the world in the areas of economic development, social justice and equality, scientific progress, national integration, and preservation of Indian culture. To provide good quality education opportunities to all the future of our country depends on its capacity.

Goal 4 (SDG4) of the Sustainable Development Action Plan (SDG4) adopted by India in 2015 includes the 'Global Education Development Action Plan', aimed at "ensuring inclusive and equal quality education for all and promoting sustainable learning opportunities for all" by 2030. Is about to do. To achieve this, the entire education system is essential needs to be redesigned. Only then can all the important goals and objectives of the Sustainable Development Action Program 2030 be achieved.

The National Education Strategy 2020 is the first such education policy of the 21st century that can easily address important developmental issues in the country. The stated objective of this policy is to create a quality and practical education system that will make India a global knowledge superpower.

**Keywords:** The structure of school education, new formula, New Teaching Method, Language, vocational education, and child psychology, Interdisciplinary education, Rules regarding examination, issues & Challenges.





#### On

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On

# 9<sup>th</sup> October 2022

# POTENTIAL IMPLICATION OF AYURVEDA FOR THE MANAGEMENT OF DERMATOLOGIC DISORDER: PSORIASIS

#### Devsuni Singh<sup>1</sup>\* and Prof. Suman Pant<sup>2</sup>

<sup>1</sup>Research Scholar, Faculty of Home Science, Banasthali Vidyapith, Rajasthan, India <sup>2</sup>Professor of Clothing & Textile, Faculty of Home Science, Banasthali Vidyapith, Rajasthan, India

#### ABSTRACT

An inflammatory T-cell immune-mediated condition known as Psoriasis, recognized by epidermal hyperplasia, proliferation of keratinocyte and has no known long-term treatment. Although there are several ways to cure psoriasis, no single medicine makes an acceptable and comprehensive claim. There are many well-established conventional medical treatments for psoriasis have also been reported, ranging from topical medicines and systemic treatments to phototherapy or combinations of those but the majority of these treatments are ineffective and have a variety of side effects that limit their long-term usage. Due to their safety and accessibility, ayurvedic or herbal medications may hold promise as possible anti-psoriatic molecules. There are numerous medicinal plants in nature that are used to heal skin conditions. In order to raise public awareness of the efficacy of some medicinal plants. The plants selected have great medical potential; several of them have active phytochemical components and are referred to as anti-psoriatic herbs.

Keywords: Psoriasis, Inflammation reaction, Ayurveda herbs





#### On

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On

9<sup>th</sup> October 2022

#### PREVENTION OF WORK-RELATED LOW BACK PAIN IN SWEEPERS; A CASE STUDY

# S. Ruhi Afroze\*, R. Astha, A. S. Shanmukavel, Ahamed Latheef, R. Bringesh, V. Vijay and Vinodhkumar Ramalingam\*

Saveetha College of Physiotherapy, Saveetha Institute of Technical and Medical Sciences, Chennai, India

#### ABSTRACT

**Background:** Low back pain (LBP) is a common complaint among gardeners and sweeping professionals, and it can be caused by a variety of factors. According to the Mayo Clinic LBP can manifest itself in many ways, including improper pasture, improper biomechanics falls, and overuse (such as lifting weights). Possible treatments for LBP include medication, steroid injections, education, physical therapy, or surgery. Surgery is usually used as a last resort as it can be very expensive and cause serious complications LBP has been proven to be significantly reduced by a number of physical therapy techniques, including electrotherapy, traction, and lumbar stabilisation exercises such as bridging cat camel exercise11s Superman stance, and thoracic extension. The motive of the study is to look into the work-related low back pain and to prevent the same among the sweepers by training/prescribing them with exercises and relaxation techniques to reduce pain.

*Case Description:* A case of 43-year-old female sweeper who was working for 8 hours per day for the past 5 months has low back pain.

**Objective:** The intention of this study is to prevent work-related LBP in sweepers by ergonomic view.

**Conclusion:** The ergonomic advice and modifications to the workstation were found to have improved the sweeper's performance with LBP during the onsite evaluation.

Paper Type: A case study research.

Keywords: Low back pain, sweepers, ergonomics, work-related musculoskeletal disorder.



#### On

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On

9<sup>th</sup> October 2022

### RHEUMATOID ARTHRITIS: A REVIEW OF DIAGNOSIS AND TREATMENT

#### Asmita Zodage, Ms. V. M. Gaikwad\*, Rutuja Byale, Rachita Malshette and Dr. O. G. Bhusnure

#### ABSTRACT

Rheumatoid arthritis (RA) is a chronic inflammatory systemic autoimmune disease that affects the joints differently in different persons. RA primarily affects the synovial joint lining and is associated with progressive disability, premature death, and significant socioeconomic burdens. Age, gender, genetics, and environmental exposure are all risk factors (cigarette smoking, air pollutants and occupational).

A greater knowledge of how pathogenic mechanisms cause the worsening of RA progression in individuals is critically needed in order to create medicines that will successfully treat patients at each stage of disease progression. We examine the etiology and pathophysiology at four stages: (i) triggering, (ii) maturation, (iii) targeting, and (iv) fulminant stage, which is accompanied by hyperplastic synovium, cartilage destruction, bone erosion, and systemic effects. Modern pharmacologic therapies (including conventional, biological, and alternative remedies).

Novel prospective small molecule disease-modifying anti-rheumatic medicines) continue to be the mainstay of RA treatment, and there has been significant progress. Significant progress has been made toward disease remission without joint deformity. As there is no cure for RA, thetreatment goals are to reduce the pain and stop/slow the further damage.

Here we present a brief summary of various past and present treatment modalities to address complications associated with rheumatoid arthritis. This review discusses recent advances of our understanding of RA pathogenesis, disease modifying drugs and provides perspectives on next generation therapeutics for RA.

Keywords: Rheumatoid arthritis (RA), Novel prospective, diagnosis, treatment.



#### On

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On

# 9<sup>th</sup> October 2022

#### THE ROLE OF PHYSIOTHERAPY IN ERGONOMICS IN MANAGING NECK PAIN FOR BUS OPERATORS

J. Afreen Fathima\*, S. Akshaya, K. Nalini, J. Sarmila Fathima and Vinodh Kumar Ramalingam\* Saveetha College of Physiotherapy, Saveetha Institute of Technical and Medical Sciences Chennai, India

#### ABSTRACT

**Background and Purpose:** Musculoskeletal disorders, particularly neck pain, are more common in bus operators due to poor posture, uncomfortable perch position, prolonged working time, vehicle vibration, and repetitive movements involved in long travel such as steering, bending forward, and prolonged sitting can cause excessive strain on the cervical spine, resulting in cervical pain. Bus operators often experience physical as well as psychological problems such as low spirits and stress while operating the bus. This significantly affects the body parts in which discomfort may be experienced, most notably the neck. The purpose of the study is to assess the ergonomic exposure and physiotherapy management for neck pain among bus operators.

*Case Description:* A case of a 30-year-old male bus operators who was working for six hours per day for the past five years has chronic neck pain with reduced neck mobility.

**Objective:** To determine the effect of onsite physiotherapy for bus operators and to create awareness of ergonomics among them, the purpose of the study is to assess the ergonomic exposure and physiotherapy management for neck pain among bus operators.

**Intervention:** The incidence and severity of neck pain can be effectively decreased with the use of proper intervention techniques. According to estimates, effective ergonomic design for bus operator includes posture correction, cognitive behavioral therapy, as well as physiotherapy management for neck pain that includes stretching, strengthening exercises, traction, and manual therapy.

**Outcome Measure:** The outcome measure is recorded by using Numerical Pain Rating Scale [NPRS] and Neck Disability Index Scoring.

**Conclusion**: This case study has proven that the bus drivers are exposed to a high risk of neck pain due to their poor ergonomics. Therefore, it is important to provide proper ergonomics guidelines for bus operators and implement physiotherapy management in the workplace to prevent the incidence of neck pain and other musculoskeletal disorders among bus operators.

Paper Type: A Case Study Research.

Keywords: Neck pain, Bus operators, Neck Disability Index, Ergonomics, Physiotherapy.



#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

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On

9<sup>th</sup> October 2022

#### A SURVEY ON VIRTUAL TRAINING EXPERIENCE BY LIC ADVISORS IN MUMBAI REGION

#### Priti Dhadge

#### ABSTRACT

Lic of India is rightly known as people welfare organisation where each agent associated with it have so much gratitude that before entering office they bough as if they are entering temple. In this covid lockdown scenario many people are stuck in their home waiting for normalcy to enter the market and start working. Whereas as some are just spending time others are efficiently managing time. A survey was conducted to find out effectiveness of virtual training to assess people belief on training need during such lockdown situation .The findings were "Women who are known to be doing multi- tasking activities right from handling household chores ,to taking children's studies were maximum participant in such training, as for them to be equipped with latest skill is a major edge in enabling them to be competitive. The other important findings were 'Zoom' as training app which most of the participants are using for first time to have such virtual training is most convenient for all the age group and can rightly be used in future too for similar training.





### On

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On

# 9<sup>th</sup> October 2022

#### ACTIVITIES OF DAILY LIVING IN CHILDREN WITH LEARNING DISABILITIES: PERFORMANCE, LEARNING, AND PARTICIPATION

Shrisruthi S<sup>\*1</sup> and Malarvizhi D<sup>2</sup>

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#### ABSTRACT

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**Background:** Children with Learning Disability (LD) has been known to have motor deficits in daily functional activities, which is one of the indications to have Developmental Coordination Disorder. Objective: The objective of this study was to investigate the activities of daily living based on predictive values in LD with DCD children.

*Methodology:* 36 parents of LD with DCD were selected and the DCDDaily-Q parental questionnaire and scoring were done accordingly.

**Results:** The results show the minimum and maximum mean values for all domains such as Performance scores: Self-care and maintenance are 17.17, the fine motor is 11.92 and gross motor is 9.64. Learning Score: 4.47, 2.31, 1.64, Participation score: 15.33, 10.3, 8.83 respectively.

**Conclusion:** The study concluded that there is no significance with range scores and children with LD have a good score in performance and participation than the learning score.

*Keywords:* Learning Disability, Activities of Daily Living, Performance, Participation, Developmental coordination Disorder



#### On

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On

9<sup>th</sup> October 2022

### AN EMPIRICAL STUDY ON HELMET USAGE AMONG YOUTH

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#### ABSTRACT

The aim of study is analyzing the usage for helmet among youth, to identify the factors that influence youth in wearing or not wearing helmet and to give suggestions which may help in reducing fatal accidents. Students between the age group of 18-24 were circulated the questionnaire in the study. There were 301 samples been collected for the study. The convenience sampling techniques have been used and statistical tools used are Descriptive statistics, Chi-square, Factor Analysis. The result of questionnaire's survey shows that 34% of respondent that wear helmets while riding, & 24% express that they don't wear helmet and 42% wear helmet occasionally. The youth should use helmet to reduce fatal accidents for future youth, the awareness of section 129 of the motor vehicle act 1988 which is implemented by the government is not aware to the public. From the study point of view, the reason for the youth to not use helmet is because of style and hair loss. According to factors analysis, Rotated components matrix reveals that majority of youth do not wear helmet due to hair loss (.862), burden (.791) and style (.762). There are precautions to overcome the hair loss given in the study as it is found out a big trouble for the youth.

Keywords: Helmet, Riders, Usage, Wear, Youth.





#### On

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On

9<sup>th</sup> October 2022

#### PLANTS GENETIC RESOURCE CONSERVATION IN INDIA: A REVIEW ARTICLE

Tambe S. S

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#### ABSTRACT

India is known for its rich heritage of biological diversity, having already documented over 89,000 species of animals and 46,000 species of plants in its 10 biogeographic regions. Nearly 6,500 native plants are still used prominently in indigenous healthcare systems. Thousands of locally-adapted crop varieties, grown traditionally since ancient times, and over 130 native breeds of farm livestock, continue to thrive in its diversified farming systems. India has participated actively in all the major international events related to environment protection and biodiversity conservation over the past decades and has ratified all the major biodiversity and environment related global conventions. PGR activities, viz. germplasm collection, introduction, exchange and quarantine, characterization and evaluation, maintenance, documentation, conservation and utilization

Keywords: PGR, Biodiversity, Conservation, India



#### On

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9<sup>th</sup> October 2022

#### STUDY OF BIO INDICTORS PLANTS OF MAUSAM RIVER MALEGAON

Tambe S. S

MGV'S L.V.HcArts, Science and Commerce College, Panchavati, Nashik Affiliated University Savtribai Phule Pune University, Pune

#### ABSTRACT

Environment means our surrounding i.e. everything around us that includes biotic and abiotic components with which we are always in contact. Land, surface waters, and ground water worldwide, are increasingly affected by contaminations from industrial, research experiments, military, and agricultural activities either due to ignorance, lack of vision, carelessness, or high cost of waste disposal and treatment. The rapid buildup of toxic pollutants (metals, radionuclide, and organic contaminants in soil, surface water, and ground water) not only affects natural resources, but also causes major strains on ecosystems. Malegaon is located at the confluence of Girna and Mausam rivers, at elevation of 438 metres (1437 feet) at 18.42°N 77.53°E.It is located at around 280 km northeast of state capital Mumbai. It has good connectivity with nearby cities like Nashik, Manmad, Mumbai and Dhule. Power looms, the cloth industry in Malegaon flourished due to increased productivity. Malegaon is well-known city for Handloom and power loom. Malegaon is second largest city in respect of population in Nasik district of Maharashtra. Mostly Mausam River is most polluted river due to discharge of waste water for mills industries. This river downstream of river channel has naturally vegetation cover of some plants .this plants are pollution indicator.

Keywords: Malegaon, Pollution, Plants.





#### On

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On

9<sup>th</sup> October 2022

#### ROLE OF WOMEN IN LABOUR MARKET IN INDIA

Dr. Koel Roy Choudhury

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#### ABSTRACT

The participation of women in the workforce of the country is an indicator of their status in the society. However, India has seen falling labour force participation among women. what is concerning is that major employment of women is seen in the agricultural sector and the unorganized sector in spite of improvement in education attainment levels among women. Government has initiated measures to improve labour force participation. Yet, further measures need to be adopted to improve the participation of women in labour market.





#### On

# Modern Research in Biological, Pharmaceutical, Medical and Environmental Sciences

# **Organized By Indian Academicians And Researchers Association**

On

9<sup>th</sup> October 2022

#### NEURAL NETWORK APPROACH FOR ESTIMATION OF LACTATE

#### Marlon Sequeira, Jivan Parab\* and Gourish Naik

School of Physical and Applied Sciences, Goa University, Taleigao Plateau, Goa 403206, India \*Corresponding Author: jsparab@unigoa.ac.in

#### ABSTRACT

Lactate is cleared from the body by transporting it to the liver. This process of the body requires adequate amounts of oxygen. Due to certain ailments such as heart failure, respiratory dysfunctions, or severe infection, there is a shortage of oxygen supply. This leads to inefficient elimination of lactate and hence abnormal accumulation of lactate in the blood. To provide timely intervention, lactate needs to be monitored in a non-invasive manner in a critical care scenario. This manuscript describes a method of predicting lactate using fixed wavelength in the near-infrared region. We have selected wavelengths namely 2299, 2285, 2259, 2225, and 2129 nm which correspond to the absorption peaks and valleys of lactate. We have performed a comparative analysis of partial least square regression and principal component analysisartificial neural network for regression analysis. We obtained a root mean square error of 2.02 mg/dL with partial least square regression and a root mean square error of 0.15 mg/dL with principal component analysis-artificial neural network. Hence, the artificial neural network can be employed to predate lactate for medical applications.





#### On

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#### **RATIONALE FOR MULTIDISCIPLINARY EDUCATION: IMPERATIVES OF BEST TEACHING-LEARNING PRACTICES IN HIGHER EDUCATIONAL INSTITUTIONS**

#### Prof. A. Suryanarayana\* and Dr. B. Mohan\*\*

\*Former Dean, Faculty of Management, Osmania University, Hyderabad-500007 (Telangana State), India \*\*Principal, Badruka College of Commerce & Arts, Hyderabad-500027 (Telangana State), India

#### ABSTRACT

The existing sorry state of affairs prevailing in Higher Educational Institutions (HEIs) in India for a very long time and several grave challenges faced by them pointed to the need for an immediate response on a war footing and an eventual overhaul of the Indian System of Education. To address and tackle these issues, National Education Policy (NEP-2020) has opened a window through multidisciplinary, interdisciplinary, and trans-disciplinary approaches in education. Of all the critical but significant obstacles faced by HEIs in India, failure to offer and provide a multi-disciplinary approach to the teaching-learning process shall surely be ranked as one of the most serious and intractable deserving and necessitating in an urgent revamping of the same. Of late, the learners in India are graduating from HEIs and making forays into a VUCA World buffeted by pandemics, climate change, and disruptive technologies like Artificial Intelligence. In this context, holistic liberal education alone can offer a rich admixture of transferrable unique human skills that would enable them to adapt to such challenging work environments. Any failure to adapt to these daunting times is bound to end up with a "useless class" of people who must have become obsolescent by outliving their utility. An education system is expected to provide universal foundational literacy and numeracy and meaningful education at scale. Towards this end, NEP-2020 has proposed inter-disciplinary education as a holistic approach across all sciences in order to ensure knowledge harmony and integrity. In the present society of the 21st Century, the imperativeness for making education accessible, fruitful, and "liberal" through integrated and holistic approaches is undeniable. To be able to successfully lead India into the third millennium, adopting a multidisciplinary and interdisciplinary approach becomes a sine qua non for HEIs.

This Concept Paper attempts to analyze and examine critically the rationale for adopting a multidisciplinary and interdisciplinary approach to successfully launch India into the Industrial Revolution 4.0. It also enumerates effective strategies and suggests suitable measures for inducting some of the best teachinglearning practices into the Indian HEIs. In summary, the Paper conclusively states that making education multidisciplinary would empower India develop hybrid thinking that is imperative in solving many of today's complex problems. Keeping this in mind, all HEIs of the country should scale up to face the critical challenges by offering multidisciplinary courses and programs in the Indian Higher Education ecosystem. In this context, the ambitious NEP, if implemented in letter and spirit, could become the much-needed change driver to catapult the Indian Education System (IES) into the league of the best in the world. Finally, it can be stated unequivocally that the ambitious new NEP alone has the potential and the promise to bring about the much needed paradigm shift to make the IES vibrant and resilient and to catapult India into the league of the best in the world. The objectives stated and aspirations embodied in the latest NEP-2020 would become a reality if it can be implemented assiduously and scrupulously both in letter and spirit.

Keywords: National Education Policy-2020 (NEP); Multidisciplinary Approach; Higher Education Institutions (HEIs); Teaching-Learning Practices; and Holistic and Liberal Education.



#### On

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#### A REVIEW ON ANOMALY BASED NETWORK INTRUSION DETECTION SYSTEM

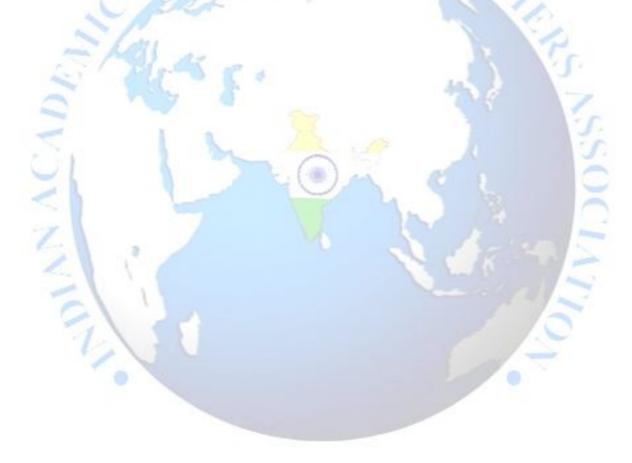
Madhumita Panda

Department of Computer Science, Gangadhar Meher University, Sambalpur Odisha

#### ABSTRACT

Intrusion Detection has become a prominent research area with the increase in malicious activities taking place in the network. These malicious activities can be identified using signature based or anomaly-based intrusion detection methods. By using machine learning techniques anomaly-based IDS solutions offer the best line of defence against network breaches. This survey paper presents the use of machine learning techniques to identify anomaly-based network intrusion detection.

Keywords: Intrusion Detection System, Signature Based, Anomaly Based, Machine Learning



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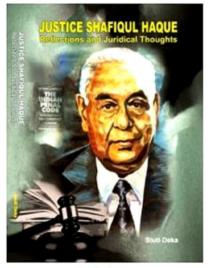


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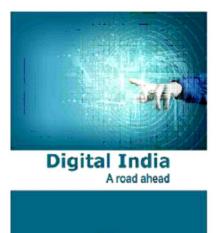
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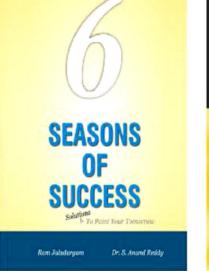
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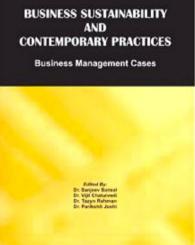
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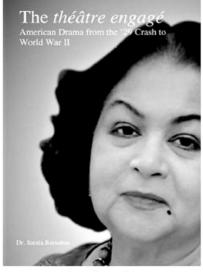
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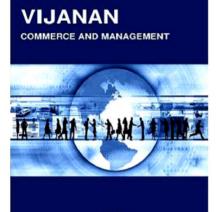


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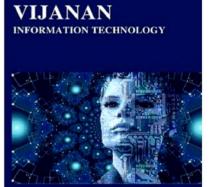
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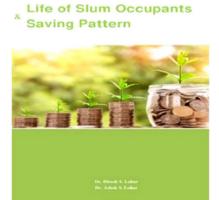
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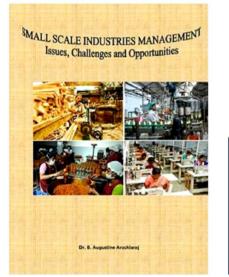
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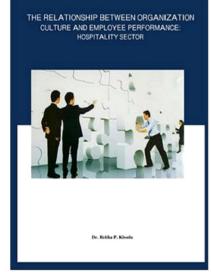
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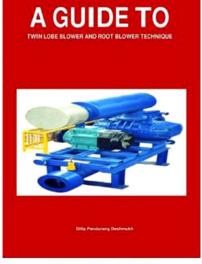
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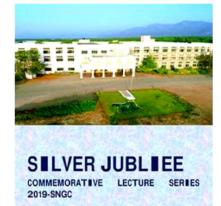
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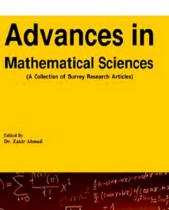
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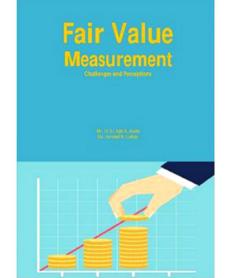
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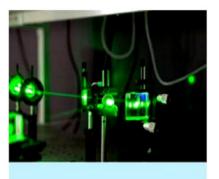


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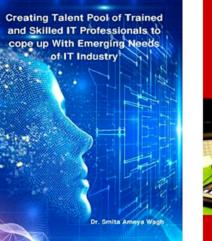
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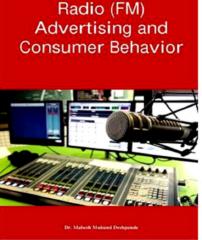
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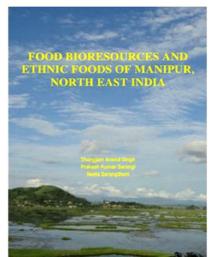
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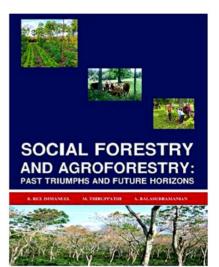
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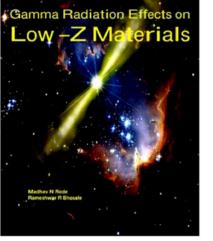


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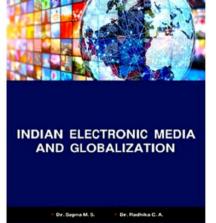


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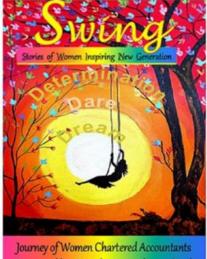


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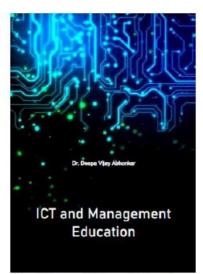


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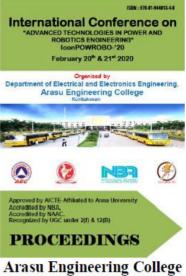




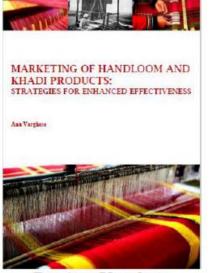
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