International Conference on
Research and Innovation In Science, Technology and Management

ICRISTM-2022

VIRTUAL CONFERENCE

07th & 08th January, 2022 | **BESTIU, Anantapur, Andhra Pradesh**

Organized By

Institute For Engineering Research and Publication (IFERP)

&

BEST Innovation University

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Preface

The "International Conference on Research and Innovation in Science, Technology and Management (ICRISTM-22) - Virtual Conference" is being organized by BEST Innovation University (BESTIU), Anantapur, Andhra Pradesh in Association with IFERP-Institute For Engineering Research and Publications on the 07^{th}-08^{th} January, 2022.

BEST Innovation University (BESTIU) has a sprawling student –friendly campus with modern infrastructure and facilities which complements the sanctity and serenity of the major city of Andhra Pradesh.

The "International Conference on Research and Innovation in Science, Technology and Management" was a notable event which brings Academia, Researchers, Engineers, Industry experts and Students together.

The purpose of this conference is to discuss applications and development in area of "Research and Innovation in Science, Technology and Management" which were given International values by Institute for Engineering Research and Publication (IFERP).

The International Conference attracted over 110 submissions. Through rigorous peer reviews 43 high quality papers were recommended by the Committee. The Conference aptly focuses on the tools and techniques for the developments on current technology.

We are indebted to the efforts of all the reviewers who undoubtedly have raised the quality of the proceedings. We are earnestly thankful to all the authors who have contributed their research works to the conference. We thank our Management for their wholehearted support and encouragement. We thank our Principal for his continuous guidance. We are also thankful for the cooperative advice from our advisory Chairs and Co-Chairs. We thank all the members of our local organizing Committee, National and International Advisory Committees.

Message from Chancellor

I am immensely happy, to learn that Bharatiya Engineering, Science and Technology Innovation university (BESTIU), is organizing International Conference on **"Research and Innovation in Science, Technology and Management".** Emerging Trends and Innovations in recent times, the role of science and technology have become pivotal in competitive world. It is of great significance that this conference is going to deliberate upon several important topics exploring new areas of practice and enhancing quality of professionalism.

I convey my best wishes for the success of the Conference.

With regards
Dr. Rupa Vasudevan

Message from IFERP

On behalf of Institute For Engineering Research and Publications (IFERP) and in association with BEST Innovation University (BESTIU), Anantapur, Andhra Pradesh. I am delighted to welcome all the delegates and participants around the globe to BESTIU for the "International Conference on Research and Innovation in Science, Technology and Management (ICRISTM-22) - Virtual Conference" Which will take place from 07th-08th January, 2022.

It will be a great pleasure to join with Engineers, Research Scholars, academicians and students all around the globe. You are invited to be stimulated and enriched by the latest in engineering research and development while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the reviewing committee, coordinator (IFERP & BESTIU) and all the people involved for their efforts in organizing the event and successfully conducting the International Conference and wish all the delegates and participants.

With regards

Er. R. B. Satpathy

Message from Vice Chancellor

Innovation and proliferation in modern technology have become difficult and challenging to expand knowledge and intellectual horizons, so they emerge to transform, prepare and to have an impact on the world and society at large. Science and Technology are the orders of the day with rapid increase in demand for real time solutions with cutting-edge technologies. I am sure the Conference will be an incentive for the partakers, from various levels and across the globe in encouraging the professional fraternity and to explore the new areas of research.

Wishing you all the very best…

With regards
Dr. P Chowdappa

Message from Director (R&D)

I take great pleasure and pride being part of this International Conference on **"Research and Innovation in Science, Technology and Management".** The recent advancement in science and technology bring forth many challenges and aspirations. "Millions saw 'the apple fall' but Isaac Newton was the only one to ask 'why'", this is the true spirit of curiosity and inquisitiveness BESTIU is aspiring for; I am sure this conference becomes a milestone in bringing together of academicians, researchers, industrialists, scientists, and students across the world to highlight various emerging technologies.

Keynote Speaker

Dr. Erry Yulian T. Adesta

Professor and Vice Rector for Planning, Cooperation and Public Relations,
Universitas Indo Global Mandiri (UIGM),
Jl. Jendral Sudirman No.629 Km.4 Palembang 30129, Indonesia

Message

It is such a great honor for me to be invited as the keynote speaker at the International Conference on Research and Innovation in Science, Technology and Management (ICRISTM-22). I have been cordially invited by the Institute for Engineering Research and Publication (IFERP) to deliver my keynote speech for many occasions including several conferences in India before Covid-19 pandemic. It is hoped that the conference will disseminate several key issues and hot topics in relevant areas of research in engineering science and technology. I sincerely believe that the conference will give opportunities for students, lecturers, and researchers alike a good platform to exchange ideas and build a wide network globally amongst themselves.

For the last two years we have witnessed and experienced Covid-19 pandemic. Whether you like it or not it has a major impact to all kind of businesses, including education. We are expected and required to adapt and adopt the new normal of doing things. The webinar is now no longer an option, it is a must if we are to survive this pandemic. ICRISTM-22 will have to use both online and offline platforms. Therefore, there seems to be no barrier at all for researchers around the globe to join and present their findings to their peers. The online platform in fact will be more cost effective to use unless you want to explore the city venue or other purpose at the same time.

Finally, I want to extend my sincere gratitude to IFERP, the conference organizer, for having me in this conference. To all presenters and participants, have a fruitful and enjoyable discussion.

(Erry Yulian T. Adesta)

Keynote Speaker

Dipankar Pal

Professor of Microelectronics
Dept. of Electrical & Electronics Engineering
BITS Pilani K. K. Birla Goa Campus, INDIA

Message

I am happy to note that the Institute for Engineering Research and Publication (IFERP) & BEST Innovation University is organizing the International Conference on Research and Innovation in Science, Technology and Management(ICRISTM-22) on 07th & 08th January, 2022.

Because of the prevailing pandemic that has crippled the whole world the organizers are compelled to organize it online. Yet I strongly hope it will traverse different views, insights, discoveries, and innovations from scholars, researchers, specialists, educators, and scientists and bring the thoughts and visions together to create a synergy.

As an academic I have been invited to deliver a keynote address on the topic "Engineering Education in India: Tracing of History and Making a Future Projection". I would expect this would arouse interest in the adult-minds and fire the inquisitiveness of the youth to know the past and present of engineering education in this great country and explore what future it has in store for them.

I wish the conference every success.

Keynote Speaker

Dr. N.Thamaraiselvan

Professor, Department of Management Studies,
National Institute of Technology Tiruchirapalli,
Tiruchirappalli, Tamil Nadu, India

Message

I deem it a great pleasure to be a part of the International Conference on Research and Innovation in Science, Technology and Management (ICRISTM-22). I gratefully convey my compliments to the Institute of Engineering Research and Publication (IFERP) & BEST Innovation University and other stakeholders for organizing this conference. The organizing committee has gone to great lengths to plan a memorable event and ensure the presentations and content meet a high technical standard. I wish for a successful conclusion to this two-day conference, with outstanding information exchange among all attendees. This conference is set to traverse different views, insights, discoveries, and innovations from scholars, researchers, specialists, educators, and scientists.

This conference is organized to serve as an invaluable platform to raise awareness about the upcoming innovations in various fields of Science, Technology and Management, which will reflect upon the recent trends in the modern world, where participants can benefit for two days of intensive education and networking. The conference aims to bring together a range of professionals and students to interact and distribute their expertise, innovative approaches, and research conclusions on all aspects of Engineering, Technology, Science, Humanities and management and examine practical hurdles and resolutions. I also believe it will bring leading scientists, researchers and research scholars to exchange and share their experiences and research results about all aspects of Engineering & Applied Science. I hope that this conference will discuss the most recent innovations, trends, concerns, practical challenges encountered, solutions, and the understanding of the issues in the fields chosen and will fulfil the organisers' aim.

I wish you an enjoyable, memorable, and productive time here and look forward to the partnerships that result from your networking and discussions.

In closing, I extend my warm greetings to all the participants and best wishes for the grand success of this Conference.

Regards

(Dr.N.Thamaraiselvan)

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ABSTRACTS

Organized by

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Celebrity Endorsement or Innovative Advertisement and Its Impact on Product Branding: A Comparative Study

Shruti Sharma, PhD Scholar, Suresh Gyan Vihar University, Jaipur, India

Abstract

Over time, the practice of celebrities being exploited for services other than performing their actual jobs as actors or athletes, such as endorsements, has grown in popularity. Despite the high expense and risks associated with this type of advertising, it is nevertheless widely employed in today's world. A celebrity endorsement can help company gain credibility and reach new customers. The celebrity impact refers to a person's ability to influence others. Companies might take advantage of the celebrity's clout and influence to promote their own goods and services. Celebrities may help a brand gain reputation and glitz. You'll think of celebrity endorsement businesses when it comes to advertising promotion, and you'll naturally think of the star effect. The development of a brand is dependent on advertising publicity, but in many circumstances, advertisement publicity is dependent on the star effect. It's also critical for a brand to perform effectively in advertising. It is also critical for a brand to perform well in terms of advertising and promotion, as well as the spokesperson. Like many other brands, they try to capture the self-satisfaction of the star chaser and invite a large number of celebrities to represent the brand in order to increase the popularity and popularity of the products. The study proposes new advertising and celebrity branding strategies and discusses the factors that may influence their effectiveness. Other topics discussed for future research in celebrity marketing include ethical marketing to vulnerable consumers, social marketing, and product branding. The paper is conceptual in nature, focusing on a thorough review of scholarly research papers. The research is secondary research that examines and analyses various literature, and based on the information obtained from the literature, this paper makes a humble attempt to examine knowledge co-creation, in the form of indispensable knowledge that is interfaced between the disciplines.

Keywords

Celebrity Endorsement, Innovative Advertisement, product branding, advertisement publicity, star effect, brand promotion

SETUVE-A Review

Chempavathy, Assistant Professor, Department of Computer Science and Engineering, New Horizon College of Engineering, Bangalore, Karnataka, India

Dr.S.Nagendra Prabhu, Associate Professor, Department of Computer Science and Engineering, New Horizon College of Engineering, Bangalore, Karnataka, India

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Ayush Roy, Department of Computer Science and Engineering, New Horizon College of Engineering, Bangalore, Karnataka, India

Abstract

The central role of the agricultural sector is to provide adequate and high-quality food to an increasing human population, which is expected to be increased by more than 30% by 2050 .This necessitates an increase in food production of a large magnitude.. The agricultural sector is considered as an essential contributor to the deterioration of soil, water contamination, as well as air pollution.In particular, livestock farming has severe adverse environmental effects.Animal manure is produced in vast quantities on farms, and if not properly handled, it can contaminate nearby subterranean and aboveground water bodies, as well as emit nitrous oxide into the sky. If handled and distributed correctly, manure can be applied as organic fertiliser in crop fields that produce different types of fruits and cereals, nuts and vegetables, thus saving substantial amounts of chemical fertilisers that come at a high economic and environmental cost. To enhance the use of manure as a fertilizer and to replace chemical fertilizers,a variety of initiatives have been implemented one of which is a central optimized approach which aims at finding an optimal way to transport the manure from livestock to farming fields. We will develop a more efficient optimization algorithm that will reduce transportation costs and provide an optimal routing for the transportation of manure. We'll look at phosphorus, which is a critical nutrient in manure, and use an optimization technique to analyze its availability and demand. It is necessary to obtain an appropriate dataset for further analysis. We aim to do our part to help the farmers to produce a healthy yield using the traditional organic manure through this literature survey.

Keywords

Manure, organic, agriculture, COA

Testing the Volatility and Spillover Effect between Whales Cryptocurrencies: Evidence from Emerging Markets

Rajkumar Dhaku Chavan, PhD Research Scholar, Department of Commerce, Christ University, Bangalore, India

Senthil Kumar Arumugam, Assistant Professor, Department of Professional Studies, Christ University, Bangalore, India

Abstract

This paper explains the volatility and spillover effect between the whales' cryptocurrencies from the global level perspective, who holds some major cryptocurrency. Volatility in cryptocurrencies markets have always been a time varying concept, which changes over time. Since cryptocurrency market is highly volatile markets as compared to stocks market over a period. The markets have evidenced many fluctuations in the prices of the cryptos. As a result, countries are transforming their policies to suit financial technologies in their economic practices. BCT allows people to obtain more benefits in a financial transaction and breaks hurdles in the financial system. Innovation through technology promises social and environmental benefits, resolves complex socio-economic problems, provides power to the defenseless, and prevents misuse of the system by elites is so-called 'Technological populism.' In the cryptocurrency market, the persons who hold a large amount of the total supply of bitcoin or other cryptocurrencies are called 'whales' (Caroline, 2021). These persons manipulate the prices of cryptocurrencies. It again imitates the nature of the 'elite.' Therefore, the study concentrates on testing the volatility in the cryptocurrencies and spillover effect from one currency to another currency. The researchers tried to ascertain the price volatility where the bitcoin whales hold large values of cryptocurrencies. The study analysed the daily closing prices of ten cryptocurrencies, including bitcoin, from 1st January 2019 to 31st December 2020. The gives some evidence from investing behaviour of the whales will lead to volatility and pattern of the cryptocurrency market. This will help to understand the shocks in the crypto market. Also, it helps to identify the pattern and trends of the cryptocurrency market during the pre-Covid-19 and post-Covid-19 pandemic periods.

Keywords

Bitcoin, Blockchain, Cryptocurrency, Distributed Digital Ledger, Volatility, Populist

Estimation of Fluoride in Gurrampode Mandal Nalgonda Dist. Telangana, India

Karuna K.S, Research Scholar, Department of Chemistry, BEST Innovation University, Anantapur, A.P., India

Hinuja Miriyala, Research Scholar, Department of Chemistry, BEST Innovation University, Anantapur, A.P., India

Sunder Kumar Kolli, Assistant Professor, Department of Chemistrty, CMR Institute of technology, Hyderabad, India

Abstract

Fluoride-rich groundwater is well known in granite aquifers in India and the world. The study examines the fluoride content of borewell, hand pump water in selected area of Nalgonda district, Telangana, India. It also focuses on fluorides and their relationship to water quality parameters and their impacts on humans through groundwater resources. Most parts of the area covered in this region are inherently enriched with fluorides threatening several ecosystems. Generally natural and pure water contains minerals in the water, even ground water gives good quality of water with needed minerals which are sodium, potassium, Chloride, Carbonate etc. Fluorine also present in water as Fluoride which is needed for the formation of dental enamel with in limitation. Excess of Fluoride causes many health disorders and diseases such as fluorosis. Estimation of Fluoride in selected areas in Gurrampode Mandal, Nalgonda district of Telangana was studied for the content of Fluoride. The study continued in the villages of Gurrampode Mandal. Fluoride content was analysing done in quarter of the year that is in the month of December 2020, in the month of March and June 2021. Water samples collected from bore wells, hand pumps and surface sources (lakes, tanks). Results were not as expected and exceeded BIS (Bureau of Indian Standards) limits at several areas. The study led with comparison of seasons and type of sources respectively, they are discussed in graphical method and represented with GIS techniques.

Keywords

Minerals, Fluoride contamination, water sources and Graphical method

A Study on Work Life Balance of Women Employees Working in Selected It Companies at Hyderabad

Dr.J.Varaprasad Reddy, Director & Professor, TKR Institute of Management & Science, Meerpet, Hyderabad, India

Madhumathi Nagella, Management Research Scholar, Bharatiya Engineering, Science and Technology Innovation University (B.E.S.T INNOVATION UNIVERSITY), Ananthpur, Andhra Pradesh, India

Abstract

Employees should always be engaged in 24/7 business operations to meet changing business needs. The workplace and personal life are now inextricably linked. In these turbulent times, the importance of work-life balance cannot be overstated. Work life balance is a comfortable state of balance achieved between employees' primary employment priorities and their personal lifestyles. Work-life balance is a top priority for employers and employees alike, especially women. The current study was conducted in Hyderabad, and data was collected from 100 female employees working in five different IT companies. A regression model was used to analyze the data, and Anova was used to test the hypothesis. Long and irregular working hours, commute time, and additional workload were discovered to be the primary contributors of work-related stress and dissonance. A lack of social time is the primary cause of work-life imbalance in personal life. The majority of women prefer flexible scheduling, a supportive spouse, family, and friends, as well as a work-friendly office environment. Promoting and implementing a healthy work-life balance for female employees will improve their performance and organizational success.

Keywords

Work life balance, WLB, Women Employee, Employee performance

Study on Green Human Resources Management Practices

Kavitha Kotte, Research Scholar, Department of Management, BESTIU, Karnataka, India

N.Mounica, Research Scholar, Department of Management, BESTIU, Karnataka, India

Abstract

In this era of the modern business environment, organizations have to constantly adapt and react to new ecological challenges. Therefore, it is critical for organizations to adopt various eco-friendly practices and processes and involve their employees in such practices; thereby achieving organizations' environmental goals. The objective of this paper is to investigate the impact of Green Human Resources Management (GHRM) practices as a bundle on environmental, economic, social and operational performance within the manufacturing sector. The paper employs a quantitative research methodology. The statistical analysis revealed that GHRM bundle practices have a positive influence on the four dimensions of organizational performance. The findings of this study can help manufacturing firms in identifying efficacious tactics for adopting GHRM practices that take part in sustainable development. Green Human Resource Management (Green HRM) is a contemporary management which is initially designed and developed because of its potentiality to influence employees'green behaviors. Green HRM has proved to be a promising management approach to address corporate environmental sustainability. Thus, GHRM (Green Human Resource Management) has been becoming a key business strategy for the significant organizations where HR Departments play a dynamic part in going green at the office. The paper mostly focuses on the various Green Human Resource Practices & few initiatives. Lastly, the paper suggests a few prolific HR initiatives for Green organizations.

In Vitro Antimicrobial Activity and Chemical Composition of Saudi Arabian *Ocimum Basilicum L* Essential Oil

Mylabathula Mary Moses, Department of Biotechnology, Krishna University, Machilipatnam, AP, India

Desam Nagarjuna Reddy, Department of Chemistry, School of Engineering and Applied Technology, BEST Innovation University (BESTIU), Ananthapur, Andhra Pradesh, India

J. Naveena Lavanya Latha, Department of Chemistry, School of Engineering and Applied Technology, BEST Innovation University (BESTIU), Ananthapur, Andhra Pradesh, India

Abstract

This study was designed to investigate the chemical components and antimicrobial activity of *Ocimum basilicum*. L essential oil extracted from the areal parts of the plant. Essential oil was extracted using hydro distillation for 3 hours using a Clevenger apparatus and moisture was removed from essential oil using anhydrous sodium sulphate. Essential oil was analyzed qualitatively and quantitatively using Gas Chromatography with Mass Spectrometry (GC-MS). The results showed 39 chemical constituents in the 99.92% of the total essential oil. Among them Linalool (41.28%), Geraniole (22.04%), Estragole (7.60%) and Neroleacetate (5.01%) are the major components. The essential oil showed potential antimicrobial activity. *S. aureus* (32.0±0.9mm), *B. cereus* (32.0±0.9 mm), *B. subtilis* (29.1±1.2 mm), *E.cloacae* (25.2±1.0 mm), *M.flavus* (24.2±1.0 mm) showed strong antibacterial activity. Essential oil showed potent antifungal activity against yeast and fungal strains *A.alternaria* (32.1±0.1mm), *A.fumigates* (31.8±0.8mm), *F.oxyporum* (30.4±0.2mm), A.*flavus* (21.0±0.6mm), *C.herbarum* (20.2±0.1mm). Minimum inhibition concentration range between antibacterial and antifungal activity of the essential oils is 1.0±0.2 to 5.0±1.2µg/ml and 1.0±0.3 to 4.5±0.8 µg/ml respectively. The present study indicates that *O.basilicum L*. essential oil can be used for its antibacterial and antifungal activity.

Keywords

Ocimum bacilicum L.; Chemical constituents; Antibacterial; Antifungal; Essential oils

Automatic Vehicle Number Plate Recognition

Sabari Arun T, Research Scholar, Bannari Amman Institute of Technology, Sathyamangalam, India

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Gokul S, Research Scholar, Bannari Amman Institute of Technology, Sathyamangalam, India

Rameswari R, Research Scholar, Bannari Amman Institute of Technology, Sathyamangalam, India

Abstract

A Traffic Surveillance system includes vehicle detection, which entails the deduction and recognition of vehicle number plates. Automatic Vehicle Number Plate Recognition (AVNPR) technology is used to help detect and disrupt criminality at a local, departments, regional and national level, including tackling of criminals travelling, Organized Criminal Groups and terrorist's gangs. With the help of the YOLO Algorithm, a car can be detected via a surveillance camera installed in a traffic area. It is detected from the resulted image using the OCR (Optical Character Recognition) technique, which uses the scanned characters from the vehicle number plate to divide the characters into character segments in which the empty places are filled with zero and the non-empty places are filled with one. These numbers are entered into a cloud-based database to get data such as car names, owner names, and challans. The proposed technology can detect a vehicle's number plate with 99 percent accuracy and display the vehicle's owner information.

Effect of Variable Viscosity, Activation Energy and Dissipation on Convective Heat and Mass Transfer Flow of Nanofluid Past a Vertical Wavy with Thermal Radiation and Chemical Reaction in the Presence of Heat Generating Sources

Dr.R. Siva Gopal, Assistant Professor, Department of Mathematics, Bharatiya Engineering Science and Technology Innovation University [BESTIU], Anantapuramu, A.P., India

Abstract

We consider the natural convective heat and mass transfer flow past over a vertical corrugated surface embedded in a fluid saturated porous medium with thermal radiation, variable viscosity, activation energy. The vertical wavy wall and the governing equations for flow heat and mass transfer are transformed to a plane geometry case by using Runge-Kutta fourth order method along with shooting technique. The non-dimensional velocity, temperature and Nano-concentration graphs as well as skin friction, rate of heat and mass transfer coefficients are displayed for different values of for different parametric values. It is found that the increase in variable viscosity increases the velocities, reduces the temperature.The concentration reduces in the region adjacent to the wall and enhances far away from the wall. Velocities, temperature and concentration experience enhancement with activation energy parameter.

Keywords

Nano fluid, Wavy Wall, variable viscosity, activation energy, Thermal Radiation, Chemical reaction, Heat Sources

Effect of Foliar Application of Dap, Humic Acid And Micronutrients Mixture on Growth, Yield And Quality Characters of Groundnut (*Arachis Hypogaea L.*) Var. Tmv7 in Sandy Soil

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M. Sagarika, Bharatiya Engineering Science and Technology Innovation University, Anantapur, Andhra Pradesh, India

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Abstract

A field experiment was conducted to study the effect of foliar application of DAP, humic acid and micronutrients on growth, yield and quality parameters of groundnut (*Arachis hypogaea* L.) var. TMV 7 in sandy soil. Groundnut plants were subjected to foliar application viz., T_1–Control, T_2–DAP 2.0%, T_3–Humic acid 0.3%, T_4–Micronutrient mixture 0.3%, T_5–DAP 2.0% + Humic acid 0.3%, T_6–DAP 2.0% + Micronutrient mixture 0.3%, T_7 –Humic acid 0.3% + Micronutrient mixture 0.3%, and T_8–DAP 2.0% + Humic acid 0.3% + Micronutrient mixture 0.3%. Among all the treatments the maximum growth parameters were observed in T_8 (combination of DAP, humic acid and micronutrient mixture) viz., plant height (60.70 cm), number of leaves plant^{-1} (35.50), number of nodules plant^{-1} (55.40), and dry matter production (5551 kg ha^{-1}), and also maximum yield and quality parameters were observed in T_8 (combination of DAP, humic acid and micronutrient mixture) viz., number of pods plant^{-1} (23.0), pod yield (2126 kg ha^{-1}), haulm yield (3425 kg ha^{-1}), kernel yield (1534 kg ha^{-1}), and oil content (48.30 %).

Keywords

Foliar application, Humic Acid, DAP, Micronutrient mixture, Growth characters, yield and quality characters, Groundnut, Sandy soil

Awareness Creation and Popularization of Millets in Ananthapuramu District, Andhra Pradesh

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Abstract

Being the oldest food known to humanity, Millets have been the traditional component of food basket in India. They are the small-seeded hardy crops which can grow well in dry zones under marginal conditions of soil fertility and moisture. They act as 'Famine Reserves' during the lean period of monsoon. Due to their short growing season, millets can be harvested in just about 65 days. Millets are nutri-cereals comprising of Sorghum, Pearl millet, Finger millet, Barnyard millet, Proso millet, Foxtail millet, Kodo millet. The present study was undertaken to create awareness and to popularize the millets among the farming community in the Ananthapuramu district. To provide practical exposure to the farmers, millets like Foxtail millet, Pearl millet and Sorghum were cultivated at BEST IU field experimental unit, Podaralla. To know the awareness level of the farmers on millet cultivation a survey was conducted followed by Farmer-Scientist interaction during Millets Krishi Mela. Based on the interaction, suggestions were given to them regarding various problems like marketing and post-harvest technologies. The sample size comprised of 90 respondents who were selected by random sampling technique. Data was collected with structured interview schedule through personal interview and group discussion. The finding of the study revealed that about half of the farmers (52.00 %) who belong to old age were aware of cultivation of millets since their childhood when millets cultivation was in vague, about 31.00 per cent of farmers were aware of millets but they were not cultivated and few farmers (17.00 %) expressed that they were aware about only finger millet and sorghum as it is included in their food habits. Ananthapuramu district is one the largest dry land districts in India, where small and marginal holdings predominate. As found in this study, to sustain the income of local farmers through training rural youth and women in value addition of millets; and to increase the nutritional value of the fast changing diet in the modern days, millets hold the true potential.

Keywords

Awareness, Millets, Nutri cereals

A Comparative Study of Pan- Tompkins and Hamilton-Tompkins Algorithm for ECG Signal Identification and Segmentation

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Abstract

Heart disease is the leading cause of increase in the death ratio of human being. Nowadays people face a high risk of heart attack and loss their precious life. There are several risk factors that affect the functioning of the heart and proper diagnosis of the disease at right time may save the life. There are different types of heart diseases and are predictable and preventable. An ElectroCardioGram (ECG) is the basic recording of electrical activities of heart. ECG is a common, basic and painless test to detect the heart based problems. The features extracted from ECG signal will serve as the base to classify the heart diseases. To extract the features, the ECG signals must be identified and segmented. The ECG Signal identification and Signal segmentation is the foundation to extract the appropriate features. Before segmenting the ECG Signals, the noisy signals must be preprocessed. Pan-Tompkins and Hamilton-Tompkins are the primary ECG Signals segmentation algorithms. This paper is an attempt to apply the existing Pan-Tompkins and Hamilton-Tompkins to Massachusetts Institute of Technology-Beth Israel Hospital (MIT-BIH) Noise stress test and arrhythmia Database ECG signals and analyze performance metrics such as specificity, sensitivity, accuracy, mean square error and peak signal to noise ratio. This performance analysis provides a clear comparative view of both the existing algorithms. The comparative analysis clearly specifies that both the algorithms are well suited for ECG Signal Identification and Segmentation and reflects that Pan-Tompkins performs well than Hamilton-Tompkins. Hence this analysis will lead to the right choice of algorithm or enhancement of the algorithm and strengthen the next coming feature extraction and classification phase. The implementation process has been carried out using Matlab software environment.

Keywords

ECG, Segmentation, Pan-Tompkins, Hamilton-Tompkins

Experimental Investigation on Partially Replacement of Coconut Shell for Coarse Aggregate and Coconut Shell Ash, Lime For Cement In Concrete

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Abstract

This paper focuses on the manufacturing of cost-effective concrete by lowering material costs, recycling and reusing. As a result, the environment is protected from possible pollution. The use of coconut shell and coconut shell ash an agriculture waste, helps in waste management. In India, commercial use of non-conventional aggregates in concrete construction is not so popular. India is the third largest producer of coconut products in the world. Coconut trees are widely cultivated in the southern states of India. Coconut shells thus get accumulated in the mainland without being degraded for around 100 to 120 years. Disposal of these coconut shells is therefore a serious environmental issue. The detailed study on the alternative for the partial replacement of coarse aggregate and cement with coconut shell and coconut shell ash, lime. In this investigation coarse aggregate and cement partially replacement of 5, 10, 15 percentages added. The investigation on coconut shell clears us that it increase the workability, density and compressive strength development in 7, 14, 28 days. Coconut shell ash (CSA), Lime improves accuracy of work 50% of cement and coconut shell improves accuracy of work 40% of coarse aggregate. It is an eco friendly and it consumes low energy during construction period. For that we use agriculture waste for the replacement of construction materials which is cost wise low and environment friendly.

Keywords

cement, coarse aggregate, coconut shell, coconut shell ash, concrete

Implementation of ISO 45001 Occupational Health & Safety Management System in Explosives Manufacturing Industry

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Abstract

ISO 45001:2018 is an International Occupational Health & Safety Management Standard defines a set of management requirements. The purpose of this standard is to help organizations to prevent work-related injury and ill-health and to provide a safe and healthy workplace to all employees. The system can be implemented by adopting a systematic approach through PDCA Cycle, Risk Based Thinking, Audits, Management Review, Consultation & Participation, Hazard Identification, Management of Change and Emergency Preparedness and Response. Any organization can integrate OH&S within its business processes which will contribute to prevention of accidents and long and short term ill health effects. The standard provides a platform to develop a positive safety culture leading to worker wellbeing.

This paper describes the steps taken in effective implementation of ISO 45001:2018 Occupational Health & Safety Management System in Explosives Manufacturing Industry. Explosives industry deals with highly hazardous chemicals and energetic materials which are widely used in mining, space, defence and industrial applications. Explosives manufacturing, handling and storage is one of the highly hazardous activities among the industrial sector because of its sensitiveness towards friction, impact, static and heat hazards. The objective of this paper is to emphasize the importance of OH&S Management System in hazardous industries and to demonstrate the systems approach for safety and health of employees, organizations, societies, communities and nations at large.

Effect of Barrier Inhomogeneity on I-V Characteristics of Metal/n-InP Schottky Diode

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Abstract

We report the current–voltage (I –V) characteristics of the Metal/n-InP Schottky diode as a function of temperature. The I-V characteristics are measured in the range of temperature 200-460 K. This is to access the main parameters that characterize the rectifier such as the ideality factor (η) and the barrier height (ϕ_b). The I–V characteristics are measured on the basis of thermionic emission (TE) theory and the inhomogeneous barrier heights (ϕ_b) assuming a Gaussian distribution. It gives that the ideality factor decreases while the barrier height increases with increasing temperature. Furthermore, the homogeneous barrier height value of approximately 1.13eV for the device has been obtained from the linear relationship between the experimental temperature-dependent barrier heights (BHs) and ideality factors. According to the inhomogeneity of the BHs, has a good linearity over the investigated temperature range. The discrepancy between the barriers heights obtained from the I–V characteristics is discussed. The measured Richardson constant A^* was 9.86 $Acm^{-2}K^{-2}$, which is close to the theoretical value of 9.4 $Acm^{-2}K^{-2}$ for n-InP. The temperature dependence of I–V characteristics of the Metal/n-InP rectifier has been successfully explained on the basis of the thermionic emission (TE) mechanism.

Keywords

Schottky rectifier, barrier height, barrier inhomogeneous, ideality factor and series resistance

ANN Learning Approach with Modified Auto-Encoder for Medical Signal Compression

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Abstract

When dealing with high-dimensional data, the curse of dimensionality is a fundamental difficulty in many practical machine learning problems. For real-world data their dimensions are usually very high, which results in the significant increase of the computational time and space. Real-world data such as medical images and sensor measurements is usually high-dimensional and limited. Using such datasets directly in machine learning tasks can lead to poor generalization. Feature learning is a general approach for transforming high-dimensional data points to a representational space with lower dimensionality. It is necessary to reduce the data dimensionality and select the most important features. The auto-encoder and its variants have drawn increasing attention as nonlinear dimensionality reduction methods.

The conventional auto-encoder tries to learn an approximation to the identity by encouraging the output to be as similar to the input as possible. The architecture forces the network to seek a compressed representation of the data while preserving the most important information. It is still challenging to learn task-relevant hidden-layer representation since there must be some hidden units mainly used to faithfully reconstruct the irrelevant or noisy part of the input.

To address this issue, a unified framework is proposed to integrate feature selection and modified auto-encoder. Simultaneously, the task-relevant hidden units can feed back to optimize the encoding layer to achieve more discriminability only on selected hidden units. Therefore, our model not only performs dynamic feature selection on high-level features, but also separates important and irrelevant information into different groups of hidden units separately.

Keywords

medical sensors, feature learning, auto-encoders, frame works, feature selection

Physico-Chemical Analysis on Musi River Water and Effects Health Problems

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Abstract

Water is the most important substance in our daily life. Without water, life would not have been possible. The magnitude of water problem is increased due to poor drainage system, unplanned industries, increase of pollution, influxes of people from rural areas and other human activities. Due to rapid increase in population, urbanization and industrialization in Hyderabad have resulted the drastic increase in water pollution, which is one of the largest and smart city in India. In this study the ground water samples are collected in post-monsoon in the year of 2021 for analysis from various places of in and around Hyderabad. The nighteen parameters were chosen for the analysis such as Colour, Odour, pH, EC, TDS, Turbidity, Carbonate, Bicarbonates, Chlorides, Fluorides, Nitrates, Sulphates, Calcium, Magnesium, Total harness, Biochemical Oxygen Demand and Chemical Oxygen Demand of samples were indentified in different locations in and around Hyderabad city. The Physico-chemical parameters are analyzed with different analytical methods used by technical instruments. The results were compared with standard values given by World Health Organization (WHO). The present study revealed that the parameters of water which is too higher than the standard limits. The study has been carried out in five sampling site locations along the river Musi in and around Hyderabad. In present study, an extensive investigation of physico-chemical parameters of water samples of river Musi located in Hyderabad. For this area sampling sites were collected during pre-monsoon season year of 2020.

Keywords

Physicochemical parameters, Water pollution, Total Hardness, Fluoride and Nitrate

Artificial Neural Networks for Stock Market Prediction

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Abstract

Stock markets have always been an appealing area for the research community. Prediction of the stock market is highly challenging because of its highly non-linear nature and complex dimensionality. The last decade witnessed the rise of neural networks effectively used to uncover this nature of stock markets. Neural networks offer a novel technique wherein no pre-specification is required during the modeling process. This is possible because they are capable of independently learning the relationship within the variables. This is applicable in security investment and other financial areas where the processes determining asset prices remain unknown. This paper examines the evolution of various prediction models and discusses the framework and working of neural networks. The study also gives a detailed review of the different input variables used for neural networks forecasting. We concluded that developing hybrid models of the neural network combined with the proper selection of inputs would significantly improve predicting stock returns.

Challenges and Interventions of E–Learning for Rural Area Students AMID Covid -19 Lockdown

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Abstract

With the rise of modern technological era, e-Learning has become an integral part of the education system. Covid -19 lockdown highly influenced the e-Learning system and made it an inevitable part of the teaching and learning process of education system, widely affecting the rural learners .In this article I study the challenges faced by rural area students and further examine the various interventions made by Department of Higher Education during 2020 Covid -19 lockdown to ease the challenges of e-Learning faced by rural area students. This study is based on the analysis of data derived from an online closed – and open ended questionnaire filled by rural students of Govt. College, Kosli (Rewari). Analysis of responses shows various challenges faced by students including the most pivotal barriers such as lack of ICT devices (smart-phone, laptops, PC, tablet) , network issues , financial problems , lack of proper learning environment . The study further shows that government as well as Department of Higher Education made efforts to ease the challenges faced by rural students but most of them were no focused interventions to specifically address the actual challenges faced. Thus, author suggests various strategies to overcome the challenges and uphold the participation of all students irrespective of the circumstances.

Keywords

Covid-19 lockdown, e-Learning, rural students, interventions, Govt. College, Kosli

Digital Consumer Communications

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Abstract

Since the beginning of the new technologically vibrant millennium, the new digital communication technologies have been constantly transforming marketing dynamics and consumer behavior. This paper illustrates the impact of intersection between digital media and consumer behavior and, specific to consumer empowerment and sovereignty – how they use devices and platforms effectively using different socio-economic variables, and how they make decisions about which to use when and customers interact with each other through new media, and how these interactions affect what customers think and how they behave in a relationship with a brand. This paper contributes to existing marketing literature by offering a framework that integrates various expressions of consumer behavior in digital media and links them to forms of consumer power.

With regard to brand attitudes, which include the thoughts and feelings that a consumer has about the focal brand, as well as new media attitudes, as consumers' thoughts and beliefs about the roles of media vehicles in their lives. In the modern era, digital literacy has become a "survival skill" - a key that helps users to work intuitively in executing complex digital tasks.

Consumers that score high on both kinds of attitudes will exhibit high new media brand engagement – non-purchase customer behaviors that involve new media, such as creating and watching YouTube videos about the brand, blogs, web sites, reviews, etc. Relationship outcomes considered in this paper include short-term and long-term measures.

Keywords

Digital communication, Consumer, Consumer empowerment, Brand attitude, Digital media

Saliva- Potassium Biosensor from Postal Stamps for Determination of Potassium Ion in Crime Investigation

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Abstract

This study reports the fabrication and characterization of potassium levels in saliva from postal stamps, in-house assembled electrochemical device is developed which works under the principle of Nernstian law by deposition of crown ether layer on the surface of carbon counter electrode. Calibration of in-house assembled electrode in standard potassium chloride (KCl) solutions has shown that the sensitivity of crown ether towards the potassium slope 57.4 mV/decade in the range of 8-70 mmol/l. Saliva samples tested n=65 postal stamps from 65 subjects of potassium concentration to check the accuracy of the electrode and it can be used sensitivity of the electrodes with and without crown ether coating towards sodium ion with Slope Value (35 mV/decade) has been found to be comparatively less than that of crown ether for potassium showing that sodium ions in saliva in postal stamps do not interfere with the measurements. The Crown ether electrode has also been successfully used in determining K^+ level in real sample analysis and verified with atomic absorption spectroscopy. These finding suggest that Potassium ion analysis of traces of saliva samples on postal stamps can be used in forensic investigation process.

An Multi Aspect-Based Sentiment Analysis and Prediction of Bitcoin using Deep Learning Techniques

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Abstract

Price forecasts for cryptocurrencies have been proved to have a substantial influence on investment strategies in the past. Various research has been carried out in an effort to forecast the future pricing of cryptocurrencies. The purpose of this research is to investigate the impact of Bitcoin and other experimental settings on Bitcoin. Many tools, forecasting, and prediction approaches have emerged as a result of rising technology and reforms. To forecast future Bitcoin price returns using sentiment analysis current trend on text data gathered from a number of sources. Its introduction has changed the way people conduct commercial transactions. The goal of this study is to propose multi-aspect ensemble method to add the expanding body of knowledge on forecasting directional price returns by extracting relevant features from textual data. It shows that similar features may be found in a range of data sets. This study hopes to produce more robust aspect-based sentiment analysis algorithms by using Aspect Sentiment domain-sentiment features and the degree of text subjectivity. This dataset compiles data from a range of sources in order to show that the indicated qualities may improve prediction accuracy.

Keywords

Bitcoin, Deep Learning, Sentiment analysis

Inter-Annual Influence of El-Niño/La-Nina & India Ocean Dipole (IDO) Over Myanmar Rainfall Distribution

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Abstract

Myanmar indicates a significant influence on rainfall along the monsoon trough regions, parts of the southwestern coastal regions of Myanmar, and over some parts of Thailand. For the region of rainfall, we take the average area (90E-105E and 10N-28N) as Myanmar, and about the time scale, selected summer monsoon season (JJAS) data for every dataset are used., where the summer monsoon season contributes ~90% of the total annual rainfall. This study aims to find inter-annual variability and associated ocean-atmospheric pattern of Upper Myanmar during 1991-2020 to under-standing the variability of the summer monsoon precipitation, which is of great importance in the economy of Myanmar because JJAS is the summer monsoon copping season what is the main economic sectors. Southwest monsoon winds are synoptic-scale systems embedded in the global circulation system. The leading EOF mode captures, and the time-series of summer monsoon precipitation anomalies show the exceeded years which is supported by positively precipitation anomalies with negative outgoing longwave radiation (OLR) and 500hPa vertical velocity and reverse for wet events. The lagged correlation between the average trend of winter precipitation and SST for 30 years (1991– 2020) was produced from the previous winter SST correlation with precipitation over Myanmar. IOD and Niño anomalies are the same values positive or negative, rainfall distribution was randomized distribution (Oo, 2021). IOD negative anomaly or negative phase can impact monsoon rainfall over Myanmar. Found Niño can impact positively the correlation over Myanmar monsoon rainfall distribution during IOD normal situations with weak correlation. And during IOD normal year rainfall distribution are not enough strong correction with Niño directly and not a correlation with for IOD anomaly year rainfall. We can also find a strong negative correlation (-0.3 to -0.4) with strong regression values (- 0.3 to -0.6) between SST and Myanmar monsoon rainfall distribution. As the results of the 3 variables correlation, IOD and rainfall distribution had a negative correlation and IOD and Niño had a positive correlation. Their turning point is around values of +/- 0.3 and its values indicate a weak positive (negative) linear relationship via a shaky linear rule. The influence of the IOD negative phase on monsoon rainfall over Myanmar is more than that of positive IOD during Niño's normal situation. The comprehensive analysis of winter precipitation helps to realize the occurrences of the past extreme events as being the support for forecasting and monitoring drought and floods over Myanmar.

Advanced NanoTechnology in Drug Delivery System

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Abstract

The nano technology widespread and ascertained knowledge that materials in the nanometer range of size have different physical, chemical and biological properties. Targeting several molecular mechanisms, for either treatment or prevention of difficult to treat diseases, for the design of the various nanotechnology based drug delivery systems. This unique feature of nanoparticulate structures has been widely investigated for the potential application of nanotechnology systems in the medical field. The study of nanoparticulate a small structures, having size of 0.1 to 100 nm and also Nano medicine is a relatively new field of science and technology. Nanomedicine is the medical application of nanotechnology. Nanomedicine is defined as the monitoring, repair, construction and control of human biological systems at the molecular level, using engineered nanodevices and nanostructures. Nanomedicine ranges from the medical applications of nanomaterials to nanoelectronic biosensors and even possible future applications of molecular nanotechnology. The aim of nanomedicine is the improvement of healthcare for the benefit of the patient. Nanomedicine is an important and rapidly growing field, which is emerging from the application of nanotechnology to healthcare. The generally recognized categories include diagnostics, imaging, medical devices, drug discovery, drug delivery and regenerative medicine. Nanomedicine can offer impressive resolutions for various life threatening diseases. Disease areas which can be expected to benefit most from nanotechnology within the next few years are cancer, diseases of the cardiovascular system, the lungs, blood, neurological (especially neurodegenerative) diseases, diabetes, inflammatory/infectious diseases, Parkinson's or Alzheimer's disease and orthopedic problems.

Keywords

Nano materials, treatment, environment, human biological systems and disease

Analysis of Lung Nodule Detection and Stage Classification Using Faster RCNN Techniques

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Abstract

Lung nodules are the second most visible problem in the world. World Health Organization (WHO) reported lung cancer caused 1.8 million cases in 2020. Medical image processing techniques were used to anticipate changes in the lungs of recorded Computed Tomography (CT) images. Using a computer-aided detection (CAD) system to help the clinicians in detecting pulmonary nodules in the initial stages of lung carcinoma, CT scan diagnostic is extremely beneficial. The deep learning approach of Faster Region-based Convolutional Neural Network techniques (RCNN) was proposed in this paper to diagnose and categorize the lung nodule automatically. To reduce noise, the images were first preprocessed with the Kaggle dataset, which is freely accessible. Then, in order to locate the nodules, we must use a faster RCNN to segment the preprocessed images. If the nodules are benign or malignant, it is determined towards the end to classify the stages of the nodules. Based on this approach, false positive per scan is 2, which is extremely reduced. The experimental results of accuracy, specificity and sensitivity are 91%, 89.00% and 87% achieved respectively.

Keywords

Computed Tomography (CT), Computer-Aided Detection (CAD), Faster RCNN

A Wifi Based Sensor Network for Airborne Air Pollution Monitoring System

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Abstract

The usage of Internet of Things (IoT)-based air quality monitors has accelerated due to increased urbanization and a better awareness of the detrimental health impacts of air pollution.Monitoring air pollution has recently become a critical concern in our culture. Despite the fact that crowdsensing methods may be an adequate answer for metropolitan regions, they cannot be used in rural locations. Instead, deploying unmanned aerial vehicles (UAVs) could be considered a viable option. This project adopts this strategy and recommends the use of unmanned aerial vehicles (UAVs) equipped with off-the-shelf sensors to undertake air pollution monitoring activities. Our Pollution Monitoring UAV is in Quadcopter configuration and is capable of monitoring industrial gases, pollutants and particulate matters present in any environment. It also allows the user to hover the drone at fixed altitudes and to measure the mentioned parameters effectively.

Keywords

IoT; Sensor; WiFi Module; Air Quality; UAVs.

Isolation, Identification and Mass Production of Antagonistic Organisms from Organic Farming Systems in Anantapur District of Andhra Pradesh

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Abstract

Five rhizosphere soil samples from organic farming systems of citrus and vegetable crops (tomato, cucumber & drumstick) from Ramadaspeta and Kandukuru villages in Anantapur district of Andhra Pradesh state were collected. Fungal and bacterial isolates were isolated from the soil samples for crop disease management. Based on colony and morphological characters, fungal isolates were identified as *Trichoderma* sp. *Aspergillus* sp. *Penicillium* sp. and bacterial isolates as *Bacillus* sp. and *Pseudomonas* sp. Mass production of *Trichoderma* isolates through liquid fermentation technology using Potato Jaggery broth, Potato Sucrose broth, Potato Dextrose broth, and Yeast Jaggery broth under shaker and stationary culture conditions were conducted. The cfu counts of *Trichoderma* isolates in the five-day-old shaker cultures were observed in the range of 2.3-7.8x 10^{11} /ml and Yeast Jaggery broth gave the highest cfu counts. In the stationary cultures, the cfu counts of *Trichoderma* isolates were in the range of 4.7-9.2x 10^{9}/ml and Yeast Jaggery broth gave the highest cfu counts. Yeast Jaggery broth was identified as an ideal liquid medium for mass production of *Trichoderma* isolates. Solid-state fermentation using sorghum grains as substrate was standardized which gave 3.2x 10^{12} cfu/g after ten days of incubation.

Keywords

Organic farming, Trichoderma, Bacillus, Pseudomonas, Yeast Jaggery broth

Maximum Power Point Tracking of Solar PV Module under Partial Shading Condition

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Abstract

In recent days demand for electricity has increased, gradually along with the development of technology especially in the field of e-vehicles. Due to gradually increasing the electricity demand people started moving to the field of renewable energy sources. Among the renewable energy sources solar PV modules are mostly preferred, nearly 70% consumption of renewable energy sources. In that solar PV module, we have problems like climatic conditions, partial shaded regions, etc., In order to overcome the problems maximum power point of the PV module is tracked by using suitable algorithms and by using suitable N-Channel Boost converters.

Keywords

Solar PV module, MPPT, E-vehicles, Partial Shaded Region, N-Channel Boost Converter

Ergonomic Design Improvement of Ice Cream Carts for Better Posture and Movement of Ice Cream Vendors in Batangas City, Philippines

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Abstract

In the Philippines, the use of push carts and bicycle in selling ice cream is one of the most efficient ways to deliver and distribute the ice cream to the end consumer. The traditional sorbetes cart is moved manually by ice cream vendors. The use of bicycle is now the latest way to minimize the pushing and pulling force of the vendor. The bicycle is attached on a stainless container. Considering these level of work, fatigue tends to set in on the workers before the end of the shift period. The workers tend to have increased rate of musculoskeletal disorder such as lower back pain, upper back pain, feeling of ache on the arms and increased rate of transfer of aggression due to fatigue. Whether they are using the TSC or bicycle, they are both at high potential risk of physical strain that can lead to musculoskeletal disorders (MSD). The researchers roamed all over the city of Batangas to find ice cream vendors that were assessed and compared.

This research study aimed to conduct an ergonomic assessment of the physical risk factors for musculoskeletal injury among ice cream vendors by assessing and evaluating the posture and current situation of ice cream vendors that were using the traditional sorbetes cart and bicycle situated mainly in Batangas City. This research paper optimized the use of a structured questionnaire that was developed for the purpose of identifying the body parts which are experiencing discomfort, and other problems associated with the job. Through interviews, personal conversation, and direct observations among the experienced ice cream vendors, the researchers were aided to discern and make intelligible judgement about the relationship between the data that were collected. Rapid Entire Body Assessment was used in order to assess the posture of the workers.

Using structured questionnaire, it was observed that the body part that has the most painful rate was the left and right upper arm for the vendors using traditional carts. This may be due to the force required by the vendors to push and pull the cart to get in into motion. These were followed by mid-to-lower back, left and right foot, and left and right shoulders. In Bicycle category, the body part that has the most painful rate was the left and right thigh. This was due to the long cycling time and operating hours of the vendors. This was followed by knees, mid-to lower back and lower legs. Upon conducting REBA on their posture for each activity, it was identified that both categories were subjected to medium risk to work-related musculoskeletal disorder, while both of them were subjected to high risk when they were scooping. Using the anthropometric data that were obtained by the researchers, new designs of carts were introduced.

Keywords

Manual Handling, MSD, REBA, Ergonomics

Biosensors in Field Level Forensic Detection

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Abstract

Forensic science is a highly demanding area in the field level detection of police investigation and there is a fast growing interest in the detection of material objects like legal and illicit-drugs, heavy metal poisons, plant based toxins, explosives, Gunshot residues, Arson residues, biological materials and Chemical warfare agents etc at the scene of offence itself based on latest biosensor technologies which leads to further confirmation of materials. Materials can be identified by producing there molecular imprints due to recognition selectivity, stability, cost effectiveness and easy of production in various forms. Presently focused on the current and latest applications of molecular imprinting technology (MIP) in field level forensic investigation.

Integration of Cloud and Internet of Things (Cloud IoT) - A Review of Its Security Challenges

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Abstract

The technology called Internet of Things (IoT) expands the capability of humans and computers to manage billions of connectivity units such as actuators, sensors and other services. The realization of IoT as a system would enable the incorporation of the cyber world in an endless aspect for the distribution environment and centralize the changes and permit human interaction with the outside world. Techniques that analyze the characteristics of the security architecture that are useful in controlling its benefits. Traditional security measures cannot be directly implicated in various IoT technologies as it is assumed that there are a number of standards and stacks for communication.

Keywords

Cloud computing, IoT, cloud IoT, Smart city, security, privacy

Medi-Chain: A Blockchain Based System for Detecting Counterfeit Drugs

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Abstract

The main issue in a medicine supply chain is the counterfeiting of drugs and the reason for drug safety in the counterfeit medicine supply chain is the imperfect supply chain system in the pharmaceutical industry. It is a difficult process to trace the right and active pharmaceutical ingredients during actual manufacture. Blockchain's advanced features provide a basis for complete traceability of drugs, from manufacturer to consumer, and the ability to identify counterfeit drugs. This paper proposes a system that uses blockchain technology in the pharmaceutical supply chain to add traceability, visibility and security to the drugs supply system and will be used to track the drugs from their manufacturing until their delivery to the patient. It also proposes a system that can effectively lower the threshold of the anti-counterfeiting of medicines and adapt an easier approach to provide consumers with the confidence that they will not purchase counterfeited drugs. Manufacturers can use the system to store relevant information on product sales in Blockchain which is accessible to everyone. The pharma blockchain holds the potential to enhance the supply chain's security, integrity, data provenance and functionality, with its transparent, immutable and auditable nature. Blockchain has shown its capability to transform the traditional supply chain industry into a secure, automated, anonymous, persistent and decentralized supply chain.

Big Data in Internet of Things Health Care: A Bibliometric Survey

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Abstract

In this paper Bibliographic survey of the Big Data in Healthcare and Internet of things is made from 2013 to 2021. Research contribution towards this area has started from the year 2013 as per the fundamental keywords chosen in this survey. Thus makes the thrust discipline and emerging technology of research, also a trendy domain based on its recognized inception. Upon consideration of the selected keywords there was no work up to 2012 and all together 425 papers are obtained from 2013 onwards through Scopus website. Among these major contribution was in Computer Science Subject area with 308 in number and maximum articles were published in English Language with 421 and highest number of papers contributed were 128 by India. This study uses versatile Bibliometric analysis databases and methods resulting in Statistical and Network Analysis in terms of Authors, Organizations, Citations, Co- Citations etc.

Factors Impacted Tourism and Hospitality Sector during Covid-19: Ethical Perspective on HRM Preparedness and Challenges

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Abstract

COVID-19 has done serious damage to the business and industries in the general and tourism and hospitality sectors in particular. To prevent its spread and survival from its effects without any vaccine has led to government restrictions on travel and the lockdown, which have adversely impacted these industries. The nationwide lockdown has made the government pause global travel; all the businesses have been closed except for the basic needs. It has brought a huge loss to the economy like tourism, and the hospitality sector contributes to it. The paper aims at addressing the challenges faced by HRM to deal with the pandemic situation during corona and their preparedness to deal with the post-pandemic situation from an ethical point of view, as there is an immense need to incorporate ethics with HRM to deal with future situations like novel coronavirus in future. Moreover, with the help of primary data, the paper has critically investigated the factors that majorly impacted the tourism and hospitality sector during covid-19.

Method: The study is based on both primary and secondary data. The first section of the study, which discusses the challenges faced by HRM during the pandemic situation and their preparedness to deal with the post-pandemic situation from an ethical point of view, is a secondary review based on which that data is collected from the sources like books, journals, and articles. Furthermore, the second section of the study analyzes the factors that impacted the tourism and hospitality sector of western Uttar Pradesh; the data from 100 tourism and hospitality staff were collected, and the data were analyzed using factor analysis in SPSS.

Results: The primary study results have concluded that low work ethics and lack of preparedness were the major factors that have impacted the tourism and hospitality sector during covid-19. The results of the secondary study highlight that few companies have adopted an ethical perspective to deal with the pandemic, but for many other organizations, the unpreparedness to deal with the sudden hit of the pandemic has resulted in a loss for them; therefore, the need of incorporating ethics with HRM from now will make the organizations ready to deal with different situations like this.

Originality: India's western Uttar Pradesh region is highly driven by tourism and hospitality due to visitors from foreign countries and all over India visiting the famous destinations in Agra, Mathura, and other nearby places. Therefore, the study is unique and discusses the factors that affected this region during covid-19. Moreover, the paper discusses the need to incorporate ethics with HRM to deal with future situations like covid-19.

Implication: The study will add to the existing knowledge of students and researchers interested in studying the tourism and hospitality sector. Moreover, the study will help the tourism and hospitality industry understand the need to incorporate ethics in their business activities and HRM to cope with situations like the current pandemic. The study of factors impacted the travel and tourism industry will help the organization to understand which factors are critical and should be well taken care of during crisis.

Keywords

COVID-19, HRM, Business ethics, COVID-19 prepared HRM, Post pandemic, Tourism and hospitality sector, Industry, People-Environment fit theory

A Survey on Pest Alert: Invasive thrips, *Thrips Parvispinus* (Karny) and *Scirtothrips Dorasalis* (Hood) Threatening Chilli Cultivation in India

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Abstract

In India, the thrips, *Thrips parvispinus* (Karny) species was first reported on *Carica papaya* L. (Caricaceae) in Bengaluru 2015 and later on *Brugmansia* sp. (Solanaceae) and *Dahlia rosea* Cav.(Asteraceae) 2018. It is a polyphagous pest, infesting beans, eggplant, papaya, pepper, potato, shallot and strawberry.In addition, it inflicts injury to ornamentals *viz., Anthurium, Chrysanthemum, Dahlia, Dipladenia,Gardenia* and *Ficus*. The first the occurrence of *T. parvispinus* in India expressed concern about this pest on an economically important plant like papaya and also had an apprehension towards quarantine related issues. They emphasized the need for regular monitoring in other parts of India as it is likely to acquire the pest status.

Survey of *T. parvispinus* has been conducted in two states of India 2021 *viz.*, Andhra Pradesh and Karnataka (Bengaluru, Bellary and Raichur Districts have been done. Vegetables and field crops reflecting the adaptability of this thrips to feed and breed in diverse agro-ecosystems. The thrips cause large scale shedding of flowers, malformation of fruits and fruit drop in chillies, leading to severe yield loss. Subsequently, diagnostic field surveys were undertaken in the infested fields which revealed the incidence of thrips on flowers in alarming proportions. About 90 to 95 per cent flowers were badly damaged by the thrips, and on an average, 18.20 thrips were recorded per flower. Serious damage was recorded in Andhra Pradesh and Karnataka on *Capsicum annuum*. The prime reason that farmers were unable to control this species after repeated application of insecticides. In case of *C.annuum* farmers were forced to abandon the crop since the species has been found to congregate in large numbers on flowers causing severe flower drop leading to huge crop loss. Survey has observed the incidence of *Scirtothrips dorasalis* (H.) 0 to 10 per leaf & *Thrips parvispinus* 0 to 30 per flowers Thrips-feeds under the leaves surface and sucks the sap by direct feeding especially on tender leaves, flowers and developing fruits which causes crinkling and upward curling of leaves elongated petiole, drying of leaves, Flower dropping, stunted growth and Scrapping of Chilli fruit which in turn causes economic losses to farmers.

In this context, establishment of *T. parvispinus* in different states of India demands a special attention as a major pest inflicting severe crop losses. Although not currently reported to be a vector of Tospoviruses, it may likely acquire viruliferous trait. Therefore, it is imperative that the domestic quarantine mechanisms are to be strengthened further to check the spread of this notorious pest to the rest of India and create awareness programmes among farming community by involving Scientist and state extension functionaries at village level. Community based IPM management practices / Strategies should be followed (Crop Protection Practices) for the welfare of farmers.

Keywords

Invasive, India, *Thrips parvispinus, Scirtothrips dorasalis, Chilli and* Farmers

Impact of Temeperature Regimes on Chickpea (*Cicer Arietinum* L.) Productivity

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Abstract

The temperature is an important abiotic factor which affects growth of plants in many ways like reduction in root growth, nutrients and translocation of photosynthesis. It also influences the morphology development and occurrences of phenophase. The chickpea grain yield is related to its phenology which is influenced by temperature. The timing and duration of flowering has an important role in determining crop duration and grain yield at high temperature. In late sown chickpea crop experiences low temperature during sowing time and high temperature at the end of cropping season. The field experiment was conducted at Main Agricultural Research station (MARS), University of Agricultural Sciences, Dharwad during *rabi* 2018-19 and 2019-20 using six chickpea genotypes, under three dates of sowing *viz.*, D_1 (40^{th} SMW), D_2 (45^{th} SMW) and D_3 (49^{th} SMW). Higher temperature significantly affected morphological, phenophases and thermal indices of chickpea genotypes under D_3 (49^{th} SMW) temperature regime as compared to D_1 (40^{th} SMW) and D_2 (45^{th} SMW) temperature regimes. At high temperature stress significantly reduced the mean plant height (26.58 cm) and total dry matter content (26.85 g $plant^{-1}$) compare to normal temperature regime (34.21 cm and 29.00 g $plant^{-1}$), respectively. Among the genotypes, BGD-128 required more days to flower initiation (40.11 days), pod initiation (53.61 days) and late in maturity (92.22 days) and accumulated highest GDD for all the phenophases.

Keywords

grain yield per plant, plant height, total dry matter, harvest index, total number of grains per plant

Intellectual Property Valuation in Nigeria: A Pedagogical Review

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Abstract

The curricular for the award of degrees on estate management in the Nigerian Universities and Polytechnics are designed to provide adequate coverage of job requirements for the trainee when they graduated and practicing the profession. However, inadequate training and experience have been identified as constraints to opinion of valuers' when commissioned to determine the worth of assets either for individual or corporate property owners for various purposes. The aim of this study is to examine the curricula of tertiary and professional training institutions offering courses in estate management in Lagos State with a view to determine the extent at which subject matter of IP valuation are covered in their curricula. In this study, efforts were made to review the curricula of a Federal University – University of Lagos (UNILAG), Federal Polytechnic – Yaba College of Technology (YABATECH), State Owned Polytechnic – Lagos State Polytechnic (LAGOSPOLY) and a private professional training institution – Reals Academy; to determine the extent at which IP valuation are been taught in their institutions. Findings showed that none of the reviewed curricula of valuation courses in all the training institutions sampled included valuation of IP in their course contents. The only closely related topic was valuation of goodwill which was available in EST 329 (Valuation II) at HND I of the polytechnic. The study therefore suggested that there should be a review of valuation curricula to include valuation of IP. Professional bodies such as NIESV should intensify efforts on the training of their members on valuation of IP through CPD and workshops. It is also proposed that NIESV in conjunction with ESVARBON should establish special institute for the training of IP Valuers.

Keywords

IP, Valuation, Curricula, Estate Management, NIESV

Power Loss Analysis of Seven Level Modified Cascaded H Bridge Inverter

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Abstract

In recent times multilevel inverters are widely referred for high voltage applications and medium voltage applications. Their execution is notably better than regular two-level conventional inverters due to minimized hormonic distortion, lower electromagnetic interference and larger DC link voltages. However certain faults are faced such as increasing components like switches and voltage balancing problems. To control these, A seven level hybrid inverter has been introduced. A conventional inverter uses 12 switches to produce a seven level of output voltage. The Modified topology consists of 6 switches with two asymmetrical DC sources to produce the same seven level of output. In this model we are simulating the proposed model with different pulse width modulation techniques like Phase Disposition, Phase Opposition, and Alternate Phase Opposition Disposition with different carrier frequencies of 2KHz and 4KHz. This topology needs lesser number of power switches, this will result in reducing the complexity of circuit. Finally, this can generate the output near sinusoidal voltage. The simulation result offers modified cascaded seven level H-Bridge inverter with THD percentage value which is presented for validation. Based on the observational values like rms voltage, rms current, average voltage and average current in MATLAB simulations power loss analysis and efficiency is presented in this paper.

Keywords

Total Harmonic Distortion, Phase opposition, Phase Disposition, Alternate phase opposition disposition, Pulse width modulation

Controlled Drug Release Potential of Etherified Xanthan Gum Hydrogel Particles: An *In Vitro* Assessment

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Abstract

In this study, xanthan gum (XG) was chemically tailored to carboxymethyl xanthan gum (CMXG) via reaction with monochloroacetic acid under alkaline condition at controlled temperature. As determined from acid-wash method. the degree of carboxymethyl substitution was 2.47. The characteristics absorption peaks of carboxyl functionality were also detected in the FTIR spectrum of CMXG in support of carboxymethylation. The CMXG was utilized at various concentration (2-4%, w/v) for the design of hydrogel particles through aluminium ion-induced gelation method. The particles appeared to be spherical in shape and lied in the range of 900-1200µm. The particles had drug entrapment efficiency of 86-98%. The in vitro drug release study suggested that the particles produced using higher polymer concentration retarded the drug release rate up to 6h in simulated gastrointestinal pH (pH 1.2 for 2h followed by pH6.8). Depending upon polymer concentration, the drug release mechanism varied from Fickian to supercase II transport. Thus, this study revealed that the in vitro drug release can be monitored by varying CMXG concentration in the hydrogel composition.

Keywords

IP, Valuation, Curricula, Estate Management, NIESV

Power and Energy Balance Calculation For Cascaded H-Bridge Multilevel Inverter Using Different Pwm Techniques

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Abstract

Among the various multilevel topologies, the cascaded H-bridge multilevel architecture for inverters has shown to be a viable choice for high power medium-voltage applications. It has modularity structure, voltage balancing, distinct DC sources, harmonics reduction, reliability, and lower stresses on power electronic switches. For cascaded H-bridge multilevel inverters, phase shifted and level shifted pulse width modulation (PWM) approaches are the most extensively utilised. The power and energy distribution (inter-phase and inter-bridge power and energy) of a three-phase cascaded H-bridge multilevel inverter for phase-shifted and level-shifted carrier PWM are compared in this work. This research presents a comprehensive evaluation of numerous PWM techniques in terms of total harmonic distortion in output voltages.The simulation of an 11-level cascaded H-bridge inverter in MATLAB/SIMULINK is performed, and the results are shown.

Keywords

Multi-Level Inverter, Cascaded H-bridge, Phase Shift & Level Shift Pulse Width Modulation

A Cascaded H-Bridge Multilevel Inverter with Soc Battery Balancing

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Abstract

Multi-level inverters are most widely used inverter topologies which are having more applications in various domains. This project presents a cascaded H-bridge multi-level inverter along with the state of charge balancing technique. Each H-bridge is connected directly to the battery in the power bank. Different switching combinations are provided to control the discharging of batteries and equalization algorithm is used in this project for controlling the state of charging (SOC) of batteries. In this cascaded H-bridge multi-level inverter SOC balancing is simulated using MATLAB under normal operating condition i.e., without and with SOC balancing.

Keywords

Multi-level inverter, SOC, cascaded H-bridge

A Critical Review of the Effect of Multiwalled Carbon Nano Tube on High Strenght Concrete Composition

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Abstract

The goal of the proposed research was to use pristine multi-walled carbon nanotubes (MWCNTs) as a nano reinforcement to improve the mechanical characteristics of hybrid MWCNT cement composites. Field Emission Scanning Electron Microscope (FESEM) research was used to evaluate the dispersion of MWCNTs inside the cured cement matrix. The hydration process was also shown to be expedited by the addition of MWCNTs. Hybrid MWCNT cement composites that contained 0.01 per cent MWCNTs demonstrated a 12.4 per cent increase in compressive strength and an 8.5 per cent decrease in autogenous shrinkage (by wt. of binder). More than 0.03 per cent MWCNTs were shown to have detrimental impacts on specimens, however. The correct dispersion of MWCNTs in the cement matrix resulted in the development of calcium silicate hydrate (C-S-H), resulting in a denser microstructure, which increased the strength and reduced the autogenous shrinkage. Simultaneously, the dispersion of MWCNTs resulted in a better interfacial connection between MWCNTs and the cement matrix.

Keywords

MWCNTs, Compressive strength, Dispersion of MWCNTs, Autogenous shrinkage

Detection and Classification of Anomalous Objects: An Analysis and Open Issues

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Abstract

Safety in public places and law enforcement are the most significant and crucial issues in recent years due to increasing rate of crime, and that is the key motivation for the huge development in the field of Intelligent Video Surveillance. Monitoring the events on camera manually led to adverse consequences due to limitations in the ability of humans to carefully supervise live footage, increases the demand for intelligent video surveillance. An object, whose occurrence is suspicious near secure area or that was unattended for certain period, can be labeled as Anomalous. Person moving with arm near public areas, Gun inside the ATM or bank, Unattended luggage at railway station or airport, Packet near secure areas can be considered as Anomalous. In this paper, various novel approaches are discussed, which are capable to detect and classify weapons near public places..

Keywords

Anomalous Object Detection, Intelligent Video Surveillance, Support Vector Machine

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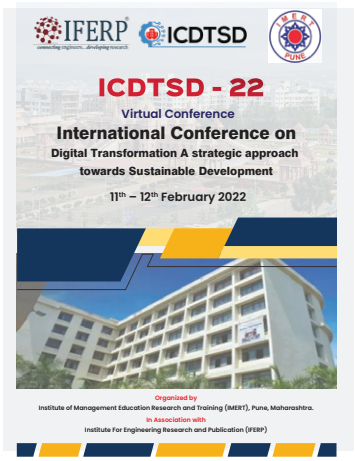

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