



**Global Research &  
Development Services**

## CONFERENCE PROCEEDINGS

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### Conference Venue

Nanyang Technological University, Nanyang Executive Centre, Singapore

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**PLENARY SPEAKER**



**Nelson Nunes Tenorio Junior**  
**UniCesumar - Centro Universitário de Maringá, Brasil**

**KEYNOTE SPEAKER**



**Azilawati Jamaludin**  
**Research Scientist, National Institute of Education, 1 Nanyang Walk, Singapore**

<p><b>Ndubuisi Franklin</b> GICW16034051</p>	<p style="text-align: center;"><b>Environmental Degradation in Nigeria: A Contextual Discuss</b></p> <p style="text-align: center;"><b>Ndubuisi Franklin</b> Research Department, African Research and Development Institute Enugu, Nigeria drfranklin4all@gmail.com</p> <p style="text-align: center;"><b>Dr. Onodugo, Ifeanyi Chris</b> Dept. of Public Administration and Local Government, University of Nigeria Nsukka dr.chrisonodugo@gmail.com</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Nigeria has a total land area of 983,213 km<sup>2</sup> occupied by about 120 Million people: The interaction of these millions of people with their environment has left indelible mark on the landscape. Urbanization, deforestation, desertification, over population and all kinds of pollution are some of the resultant effects of man's interaction with his environment. These changes occur as the people attempt to acquire their seemingly endless desire for food, shelter, recreation and infrastructural facilities. Though these wants and desires contribute to the development of the country, the unwise use of the land and its resources produce negative impacts on the environment.</p> <p>The subject of environmental economics is at the forefront of the green debate: the environment can no longer be viewed as an entity separate from the economy. Environmental degradation is of many types and has many consequences. To address this challenge a number of studies have been conducted in both developing and developed countries applying different methods to capture health benefits from improved environmental quality. In this paper, we describe the national and global causes and consequences of environmental degradation. The study adopts descriptive approach and content analysis as its methodological orientation. This paper found that over population, deforestation, and human activities among others are the major causes of environmental degradation. We recommend massive information campaign against environmental degradation.</p> <p><b>KEYWORDS:</b> Over Population, Desertification, Urbanization, Deforestation, Pollution.</p>
<p><b>Ma Theresa F Reyes</b> GICECG1608055</p>	<p style="text-align: center;"><b>Hazard and Vulnerability Assessment of Public School Buildings in the City of Malolos Utilizing Multi-Criteria Decision Analysis and Geographic Information System</b></p> <p style="text-align: center;"><b>Ma Theresa F Reyes</b> Graduate School, Faculty of Science, Bulacan State University, Philippines tesreyesdsu@yahoo.com</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>This paper presents a comprehensive analysis and assessment of public school buildings in the City of Malolos in terms of flood, fire, typhoon and earthquake. A quantitative research was done to determine the risk indices of each school buildings</p>

of the subject schools. To support the findings of the quantitative investigation, a qualitative research was done through surveys and interviews.

In the quantitative part, risk indices were determined using the Multi-Criteria Decision Analysis (MCDA). The results were then translated as Geographic Information Systems (GIS) or geo-hazard maps. MCDA was also used in determining the weights and weighted scores of various factors: (1) Rapid Visual Screening (RVS), Non-structural (NS) Hazard, Asset Value (AV), Classroom Demographics (CD) and Seismic Proximity Hazards (SPH) for earthquake risk and (2) Hazard, Exposure, Vulnerability, Soft Countermeasure and Hard Countermeasure for flood, fire, and typhoon risk. For the earthquake risk index, the modified distance formula (Eq. 1) used in the study of Caparos (et al., 2013) was adopted.

(1) For the fire, flood, and typhoon risk indices, the same formula (Eq. 2) used in the study of Kannami (2008) was adopted.

(2) After thorough investigation and computation, risk indices were translated into geo-hazard maps. The GIS showed that 27% of the evaluated buildings were High Risk of flood, while 27%, 9%, and 4% were High Risk in terms of fire, typhoon, and earthquake respectively. One of the geo-hazard maps is shown in the figure.

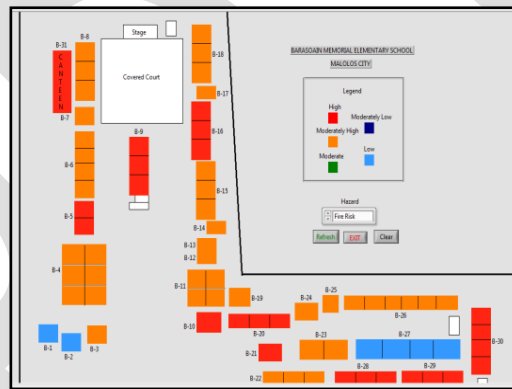


Figure 1. Fire geo-hazard map of Barasoain Memorial Elementary School.

Qualitatively, pupils/students, teachers and school staffs were aware and informed about the possible effects of disasters and the things to do when these calamities come. But, most of them knew less about the disaster risks of the school buildings they were using. Also, flooding was the most frequent disaster the schools experienced.

Proper zoning of schools, regular retrofitting, and compliance to the existing codes can significantly decrease the disaster risk indices of the school buildings. But, awareness and information through seminars, trainings, and drills can greatly reduce the vulnerability of the people and therefore upgrade the disaster preparedness of the schools in the City of Malolos.

Keywords: Risk Analysis, Risk Assessment, Risk Index, GIS, MCDA, Disaster Risk.



Prof Tim Sharpe  
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**Ventilation Provision And Outcomes In Mainstream Contemporary New-Building Flats In London, UK**

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**ABSTRACT**

Increasingly stringent statutory regulation intended to reduce energy consumption is leading to the use of new approaches, for example greater airtightness and mechanical ventilation. The impacts of these, particularly when they become mainstream, are not yet well understood. This is an important problem for social housing providers who retain a contractual obligation to their tenants and are therefore concerned about possible energy and health impacts. The aim of this research was to examine the environmental performance of new-build housing through the monitoring and evaluation of 20 typical new-build contemporary flats in London. Problems with ventilation provision were endemic – in winter 90% of bedrooms had CO<sub>2</sub> levels over 1000ppm overnight, due to a variety of design, construction and operation issues. This paper describes the nature and causes of these.



Mukesh kumar  
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**Investigation of effect of Pyrogallol on Thermal Stability of Chlorella Protothecoides Microalgal Biodiesel**

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**M.P. Sharma**

**ABSTRACT**

Biodiesel has been receiving worldwide attention in recent years, due to having similar fuel properties as diesel, to overcome the crisis of petro-diesel. Biodiesel can be produced from various feedstocks including edible, non-edible and animal fats. However, the completion of edible oil with food, it become impossible not to convert these oil into biodiesel, Further, low oil content (25-40%) and slow growth rate (1-2 years) of non-edible oil make it inappropriate to fulfill the energy demand. Recently, microalgae are being viewed as a future source of biodiesel due to having high oil content and faster growth rate (24-48 hrs) than the terrestrial oil seed crops. Out of the various microalgae species, Chlorella protothecoides is considered as the most promising species for biodiesel production owing to high oil content (58%), faster growth rate (24-48 hrs) and high biomass productivity (1214 mg/l/day). Since thermal degradation is associated with a lot of scientific applications, it is necessary to measure the thermal degradation of biodiesel. In this study, the fatty acid composition is detected by gas chromatograph (GC). Then, Thermogravimetric analysis (TGA) experiments are performed at constant heating rates from 10 °C min<sup>-1</sup> under nitrogen and air atmosphere in temperature range from 25 °C to 600 °C. The activation energy is determined by Differential method (Direct Arrhenius method). Results show that Pyrogallol improves the thermal stability of Chlorella protothecoides microalgal biodiesel than pure biodiesel and diesel.

**Keywords:** Microalgal oil; Chlorella protothecoides; Transesterification; TGA; On-



	set temperature; Off-set temperature
 <p><b>Thu Ngo Hong Anh</b> GICECG1608058</p>	<p><b>Removal of Heavy Metal Ions in Water Using Modified Polyamide Thin Film Composite Membranes</b></p> <p><b>Thu Hong Anh Ngo</b> Department of Chemical Technology, VNU University of Science, 334 Nguyen Trai, Thanh Xuan District, Hanoi, Vietnam</p> <p><b>Dung Thi Tran</b> Department of Chemical Technology, VNU University of Science, 334 Nguyen Trai, Thanh Xuan District, Hanoi, Vietnam tranthidung@hus.edu.vn</p> <p><b>ABSTRACT</b></p> <p>Heavy metals in the wastewater can pollute the water resources because they are environmentally persistent, have a high toxicity and a tendency to accumulate in body tissues. Thus, the treatment of wastewaters containing heavy metal ions has attracted much attention because they can economically provide water for industrial production, decrease the wastewater discharge amount and minimize the effluent pollutant concentration. In some methods for removal of heavy metal ions from wastewater, membrane separation is considered as a great promise technique because of their high efficiency, easy operation and space saving. The commercial polyamide thin film composite (TFC-PA) membranes are widely used for the water treatments due to a high permeate flux as well as a great rejection for relatively wide operation of temperature and pH range. However, TFC-PA membranes are sensitive to fouling. The improvement of the fouling resistance of TFC-PA membrane can be achieved through the surface modification techniques. In this work, the surface of TFC-PA membrane has been successfully modified by the UV-photo-induced grafting of poly(ethylene glycol) (PEG) and acrylic acid (AA). The separation performance of the modified membrane has been investigated through the possibility for removal of heavy metal ions such as Ni (II), Cu (II), Fe (III) and Cr (III) in water and in electroplating wastewater. The experimental results indicated that the separation performance of the PEG-grafted and AA-grafted membranes is significantly improved with an increased membrane flux at a great retention. The antifouling property of the modified membrane is also improved with a higher maintained flux ratio and a lower irreversible fouling factor in comparison with those of the unmodified one.</p> <p><b>Keywords:</b> Polyamide thin film composite membrane, surface modification, UV-photo-induced grafting, poly(ethylene glycol), acrylic acid, heavy metal ions, separation performance, antifouling, electroplating wastewater</p>



**Dr. K. Naga Sujatha**  
GICECG1608059

**Performance Analysis of Digital Over Current Relays Under Different Fault Conditions in Radial and Parallel Feeders**

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**ABSTRACT**

The conventional relays like electromechanical relays, static and microprocessor based digital relays are having their own disadvantages. Digital/ numeric relays are replacing to overcome these drawbacks. Digital protection devices are built with integrated functions and operated using digital binary values. Fast operation, high sensitivity, self-monitoring, low maintenance are the characteristics of the digital/ numeric relays and their cost is also relatively low. They offer several advantages in terms of protection, reliability, trouble shooting and fault information.

In this paper, the modelling of Digital Over Current relays has been proposed for power system protection. The performance of the proposed relays was tested by applying different types of fault conditions in radial and parallel feeders and results were analysed. MatLab/Simulink software was used to simulate the proposed protection scheme due to its features like design flexibility and exploration of any physical module.

**Keywords:** Over-Current Relay OCR, Digital Directional Over Current Relay



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**Implementation of Visible Light Communication Based System for Indoor Positioning**

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**ABSTRACT**

The aim of this paper is to determine the indoor positioning through optical wireless communication other than radio frequency. In particular white light emitting diodes (WLEDs) have dual characteristics, illumination and data transmission by visible light communication (VLC) system. This paper measure the circumstances of indoor

	<p>positioning through VLC using a portable transmitter and a receiver. We propose indoor positioning system utilizing VLC, it gain much interest. WLEDs are used as a transmitter for VLC and a potential candidates for localization. Conventionally global positioning system (GPS) has very poor performance in indoor environments. Assisted global positioning system (AGPS) has positioning accuracy in few meter range. WLEDs can be used in small cell area inside the room hence indoor positioning can be measured accurately in centimeter. In this paper a WLEDs based indoor position system is investigated, the position was accurately confine in 11cm with low cost and on the shelf components.</p> <p><b>Keywords:</b> Optical wireless Communications, Indoor positioning, Optical transmitter, Optical Reciever</p>
 <p><b>Chandragiri Radha Charan</b> GICECG1608060</p>	<p><b>Optimized Energy Efficient Solution With Stand Alone Pv System</b></p> <p><b>Chandragiri Radha Charan</b> JNTUH College of Engineering, Jagtial, Nachupally, Karimnagar Telangana State, India crcharan@gmail.com</p> <p><b>A. Jaya Laxmi,</b> JNTUH College of Engineering, Hyderabad Kukatpally, Hyderabad Telangana State, India ajl1994@yahoo.co.in</p> <p><b>P.Sangeetha</b> JNTUH College of Engineering, Jagtial, Nachupally, Karimnagar, Telangana State, India</p> <p><b>ABSTRACT</b></p> <p>Photovoltaic systems are presenting an alternative source for production of electricity in a sustainable way. PV systems are a form of renewable energy systems that are progressively being used for efficient production of electricity. PV systems in the form of Stand Alone systems offer a potential solution to generate clean electricity with minimization of all form of losses. This system consists of PV array, battery, inverter and load. Its performance depends on orientation of PV array, horizon, irradiance, shading, the local climate, wind speed and direction and inverter performance. The I-V characteristics of the system are affected by shading of module and varying irradiance levels. The simulation model of Stand Alone PV System design using PVsyst software to perform the full analysis of PV systems is presented in this paper. The energy output throughout the year was simulated. The system loss diagram represents the efficiency of conversion and total energy output.</p> <p><b>Keywords:</b> Renewable EnergySystems, Photovoltaic system, Batteries,Stand Alone PV system, PV Array, PVsyst software</p>
<p><b>P.Sangeetha</b> GICECG1608061</p>	<p><b>Evaluation of Customer Scattering Impacts on Reliability of Distribution System with DG</b></p> <p><b>P.Sangeetha</b> JNTUH College of Engineering, Jagtial, Nachupally, Karimnagar, Telangana State, India</p>



	<p style="text-align: center;">sangeetha813@gmail.com</p> <p style="text-align: center;"><b>K.Naga Sujatha</b> JNTUH Kukatpally, Hyderabad, Telangana State, India knsjntu@gmail.com</p> <p style="text-align: center;"><b>Chandragiri Radha Charan</b> JNTUH College of Engineering, Jagtial, Nachupally, Karimnagar, Telangana State, India crcharan@gmail.com</p> <p style="text-align: center;"><b>Abstract</b></p> <p>This article presents customer scattering impacts on distribution system reliability. Distributed Generation (DG) as a backup source ensures the reliability of the electric power supply and hence distributed generation is expected to play a key role in the residential, industrial and commercial sectors of the power system. In the proposed work radial system has been implemented and analysed by considering the customer variation in six patterns. At various locations along the feeder the reliability indices were evaluated without DG, and with DG unit. The reliability is measured by reliability indices which include SAIFI, SAIDI, CAIDI and ENS. The proposed algorithm is applied on thirteen load points system. The performance of installed DG and without DG has been observed at various locations and analysed the customer scattering effects the optimal location of DG unit in terms of system reliability. Simulation result analysis also proves that the best DG location for SAIDI and CAIDI improvement varies with the patterns of customer scattering but SAIFI obtained as constant.</p> <p><b>Keywords:</b> SAIDI (System Average Interruption Duration Index), CAIDI (Customer Average Interruption Duration Index), ENS (Energy Not Supplied) and AENS (Average Energy Not Supplied), Distributed Generation, Customer scattering, Distribution system, Reliability</p>
 <p style="text-align: center;"><b>Nagasudha D</b> GICECG1608062</p>	<p style="text-align: center;"><b>Word Retrieval Using Word Spotting for Printed Telugu Documents</b></p> <p style="text-align: center;"><b>Nagasudha D</b> Research Scholar ,Dept of ECE JNTUCEH, Hyderabad nayaniharshi@gmail.com</p> <p style="text-align: center;"><b>Dr. Madhaveelatha Y</b> Dept of ECE MRECW, Hyderabad</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>In this paper, we propose a keyword retrieval system for locating words in printed Telugu document images. Government has initiated various schemes to scan and digitally preserve such documents for future use. Such scanned images of documents are now available to users. Even though the documents are available in their digital format, it is still difficult to search for a single word or phrase as they are scanned images. Traditional optical character recognition techniques (OCR) and other text retrieval systems fail on such type of document images due to various types of noises. Despite several successful works in OCR all over the world, development of OCR tools in Indian languages is still an ongoing process. In such situations word spotting shall be a major help to users to automatically search for a particular word/phrase in millions of such document images. An attempt is made here to design and implement a word spotting technique for printed Telugu documents. Based on the word spotting</p>

	<p>technology, a collection of document images is converted into a collection of word images by word segmentation, and a number of profile based features are extracted to represent word images. Correlation and HMM model are applied for image comparisons. Image to image matching is done by calculating similarities between a query word image and each word image in the collection. The optimal performance of the system is validated.</p> <p>Keywords: Telugu documents, profile based features, OCR, correlation, HMM</p>
<p>V. Baby Shalini GICECG1608063</p>	<p><b>Economic Evaluation Of Grid Connected Hybrid Renewable Energy System</b></p> <p>V. Baby Shalini Assistant Professor, Department of Electrical and Electronics Engineering JNTUHCE Jagtial, Jagtial, Telangana, India shalini815@yahoo.com</p> <p>K.Nagasujatha Associate Professor, Department of Electrical and Electronics Engineering, JNTUH, Telangana, India knsjntuh@gmail.com</p> <p><b>ABSTRACT</b></p> <p>The electrical energy utilization is expanding all over the world and the gap between the demand of electrical power and generation is increasing day by day. In this critical stage of energy crisis, Renewable Energy is one of the most important substitute energy sources in addition to conventional power generation to meet the rising demand of electrical power. To provide cost effective, reliable power solutions and to reduce the greenhouse gas emissions effectively renewable energy resources such as solar, wind, tidal, and geothermal etc are more viable.</p> <p>The design of grid integrated hybrid renewable energy system with battery backup has been proposed in this paper. For this hybrid system, the meteorological data of Solar Radiation, hourly wind speed for Jawaharlal Nehru Technological University, Jagtial (Latitude 18°26' N, longitude is 79°07' E) are taken to meet the primary load of 1769Kwh/day, 202Kw peak load. HOMER is used to optimize the system based upon the Total Net Present Cost. Moreover, the optimization of the proposed system is obtained by varying the sensitivity variables like solar radiation, wind speed etc. Cash flow summary of the Hybrid Renewable Energy System (HRES) is obtained which will be useful for the optimal cost allocation of each individual component present in the system. Comparative analysis also done between the Grid Connected Hybrid Renewable Energy System and Grid Connected System Not Having Renewable Energy Sources</p> <p>Keywords: Renewable Energy, HOMER, Grid System, Solar PV, Wind, Optimization, Net Present Cost (NPC), Emission Analysis</p>
<p>Neeraja GICECG1608064</p>	<p><b>Preparation of An Anti-Corrosive Coating from Waste Pet Bottles to Inhibit the Corrosive Effects of Water</b></p> <p>Dr. K. Sathish Kumar Department of Chemical Engineering, SSN College Of Engineering, Chennai, Tamilnadu, India- 603110 sathishkumark@ssn.edu.in</p> <p>Vignesh Balasubramanian Department of Chemical Engineering, SSN College Of Engineering, Chennai, Tamilnadu</p>

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<p><b>Michel Cotsaftis</b> GICECG1608065</p>	<p><b>Small Scale Ocean Waves Energy Recovery</b></p> <p><b>A.Errasti</b> Undergraduate Students, ECE Paris Engineering School, France errasti@edu.ece.fr</p> <p><b>F.Doffagne</b> Undergraduate Students, ECE Paris Engineering School, France</p> <p><b>O.Foucrier</b> Undergraduate Students, ECE Paris Engineering School, France</p> <p><b>S.Kao</b></p>

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<p>S. Jagadish Kumar GICECG1608066</p>	<p>Current Harmonics Compensation by Using Active Power Filter in Distribution System</p> <p>S. Jagadish Kumar Assistant Professor, Dept. Of EEE, JNTUH College Of Engineering, Jagtial, India <a href="mailto:jagadishkumar1@gmail.com">jagadishkumar1@gmail.com</a></p> <p>G.N. Sreenivas Professor, Dept. Of EEE, JNTUH College Of Engineering Hyderabad, India <a href="mailto:gmsgns.srinivas785@jntuh.ac.in">gmsgns.srinivas785@jntuh.ac.in</a></p> <p><b>ABSTRACT</b></p> <p>To ensure safety, better operation, quality power must be provided for full use of modern appliances like various types of electrical drives used for Industrial applications. This paper deals with a Novel Adaptive Hysteresis Band Current Controller, a new control scheme for an Active Power Filter (APF) to reduce harmonics and to compensate the reactive power of three-phase rectifier. A 3-phase voltage source inverter bridge with a dc bus capacitor is used as an Active Power Filter (APF). The novel adaptive hysteresis band current controller changes the hysteresis bandwidth according to modulation frequency, supply voltage, DC capacitor voltage and slope of the reference compensator current wave. The hysteresis band current controller determines the switching signals of the Active Power Filter, and the algorithm based on an extension of synchronous reference</p>

	<p>frame theory (d-q-0) is used to determine the suitable current reference signals. The simulation results of new Active Power Filter control technique, carried out in MATLAB environment, are presented in this paper and are found quite satisfactory to reduce harmonics and reactive power components from utility current. The APF is found effective to meet IEEE 519 standard recommendations on harmonics levels. <b>Key words:</b> Active Power Filter (APF), d-q-0 reference frame, and adaptive hysteresis band current controller.</p>
<p><b>Ka-Ming Wai</b> GICECG1608067</p>	<p><b>Urbanization Effects on Rainfall and Outdoor Thermal Comfort</b></p> <p><b>Ka-Ming Wai</b> Institute of Future Cities, Chinese University of Hong Kong, Hong Kong SAR. KMWai@cuhk.edu.hk</p> <p><b>Tang Huang Lin</b> Center for Space and Remote Sensing Research, National Central University, Taiwan thlin@csrnr.ncu.edu.tw</p> <p><b>Tanya Z Tan</b> School of Civil and Environmental Engineering, Nanyang Technological University, Singapore ttanya@ntu.edu.sg</p> <p><b>ABSTRACT</b></p> <p>Urban cities are the centers of anthropogenic heat and air pollution. The heat could generate more clouds and rainfall but less attention has been paid by the scientific community and public related to the potential long-term increase in precipitation due to rapid urbanization. We have analyzed recent ten-year precipitation dataset at a rapid urbanized megacity and sub-urban/rural stations nearby in southern China. We show that a statistically significant long-term increasing trend of precipitation exists only at the megacity station but not at all other stations. This indicates that the precipitation increase is a city-scale phenomenon rather than a regional-scale one. We attribute the increase to thermal and dynamical modifications of the tropospheric boundary layer related to the urbanization, which has been confirmed by the results of our WRF-SLUCM simulations. Our results highlight the direct climate impacts due to the rapid urbanization with strong implications to the urban sustainable development and planning for effective adaptation strategies. Our findings are also relevant to the megacities (35 in 2015) in the rest of the world. The cities also emit significant amount of aerosols from stationary and mobile sources. The aerosols could interact with solar radiative flux through scattering and absorption processes. The Physiological Equivalent Temperature (PET), a commonly-use outdoor thermal sensation index, is controlled by the radiative flux and other factors. The PET is thus changed with the aerosol loadings. We used an atmospheric radiation model and a thermal comfort model to evaluate the interaction in Hong Kong. It is concluded that people tends to feel from “hot” to “very hot” during summertime when the aerosol loading reaches their seasonal average levels from background level. It implies aerosol effects adding further burden to the thermal environment apart from the green-house-gas induced global warming in future.</p> <p><b>Keywords:</b> urbanization, numerical models, heat stress, air pollution</p>



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**Microgrids for the Philippines: Enablers and Challenges**

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**ABSTRACT**

Microgrids aim to help attain energy sufficiency goals around the world. They provide rural electrification in remote areas, encourage renewable energy penetration and provide more freedom and flexibility in the power grids. Whether independent or connecting to main grids, these tiny grids help improve power supply reliability and enhance efficiencies as they are closer to the communities they serve. This paper investigates the existence of microgrids in the Philippines, their general characteristics, the potential for integrating renewables and the barriers and issues that come with microgrid implementation in the country. The success factors are uncovered along with the challenges that may hinder future developments. Existing microgrids and those lined up are identified. This study has established some of the barriers and hindrances to microgrid development and implementation. Though the study may be limited by the amount of public data available, this research can potentially provide information and encouragement to the different stakeholders and sectors involved for better cooperation. This will further facilitate microgrids implementation and renewable energy integration.

**Keywords:** Microgrids, barriers to microgrids, renewable energy, electrification, microgrids success factors



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**Reviving Bhamala as a tourist site and develop a floating market in Khanpur Dam**

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**ABSTRACT**

The word humanitarian can be defined as “having concern for or helping to improve the welfare and happiness of people” (www.dictionary.com). So humanitarian architecture basically means architecture designed for those in need. It is “seeking architectural solutions to humanitarian crises and bringing professional design services to communities in need.” (www.nationmultimedia.com)

I anticipate that my project , Reviving Bhamala as a tourist site and develop a floating market in Khanpur Dam which will be revenue generation for local craftsmen of Pakistan and promote local arts and craft of this region will bring Architectural Solution to Community of Haripur in crises.

The research will be originated from the indigenous context and environment of Pakistan. Vernacular Architecture of Pakistan with indigenous materials will be used in the development of the project.

Emphasis shall be placed on adaptation and implementation of research-derived






	<p>knowledge and techniques to a practical humanitarian architecture project in Bhamala.</p> <p>Bhamala Stupa is a ruined Buddhist stupa and National Heritage Site near Haripur, Pakistan. The Stupa is different from other stupas found in Gandhara. The ruins date back to the 4th century CE. The ruins are situated very near to the Khanpur Dam. The stupa is cross shaped and looks like an Aztec Pyramid. Bhamala stupa is an archaeological site and is also known as Bhamala Buddhist Complex.</p> <p>The project will also offer a huge, lively, full of boats selling local handicrafts , food and fruits colourful floating market in Khanpur Dam on the same lines as the floating markets of Bangkok.</p> <p>The size of this will be manageable and the lovely location and interesting choice of food to sample and a lovely location will attract local and international tourists. The market will be very attractive, while walking around in the shade of trees will be a wonderful experience.</p> <p>All strategic actions listed above will provide a research model in developing and reviving Bhamala as a tourist Site and developing Floating market near Khanpur Dam.</p> <p>The Agenda for Revival of Bhamala and floating market for Khanpur Dam will focus on ending poverty in all forms, achieve food security and improved nutrition and promote sustainable agriculture, ensure healthy lives and promote well-being for all at all ages, achieve gender equality and empower all women and girls by promoting their handicraft skills.</p> <p>Ensure availability and sustainable management of water and sanitation for all, ensure access to affordable, reliable, sustainable and clean energy for all, promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.</p> <p>Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation, Reduce inequality , make settlements inclusive, safe, resilient and sustainable, Take urgent action to combat climate change and its impacts. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.</p> <p>I anticipate that this can provide immaculate opportunities for the revival of Bhamala as a tourist attraction and work towards improving the living conditions of the residents of Haripur by promoting local crafts, vernacular architecture and indigenous materials of that region.. Sustainable proposal for Bhamala and Khanpur Dam will be energy efficient on the same lines as humanitarian projects of Thai Experts. The design solution will aim to provide building improvement and infrastructure.</p>
 <p>Gopinath Kalaiarasan GICECG1608053</p>	<p>Characterization and Source Identification of Poly Cyclic Aromatic Hydrocarbons (PAHs) for Coastal Industrial City Mangalore, India</p> <p>Gopinath Kalaiarasan Department of Chemical Engineering, National Institute of Technology – Karnataka, Surathkal, Mangalore, India</p> <p>Raj Mohan Balakrishnan Department of Chemical Engineering, National Institute of Technology – Karnataka, Surathkal, Mangalore, India rajmohanbala@gmail.com</p> <p>Adarsh M</p>

	<p>Department of Chemical Engineering, National Institute of Technology – Karnataka, Surathkal, Mangalore, India</p> <p><b>ABSTRACT</b></p> <p>PM10 samples were collected from a Traffic site (Town hall) and Industrial site (KSPCB) of Mangalore, India for a study period of three months (October, November and December) during 2014. This is the first known work for source identification of PAHs (PM10) in coastal industrial city Mangalore. The samples were collected, processed and analysed using fluorescence spectrophotometer which yielded seven Poly Cyclic Aromatic Hydrocarbons (PAHs) namely Fluorene (Flu), Acenaphthene (Ace), Chrysene (Chr), Benz(a)anthracene (B(a)A), Benzo(a)pyrene (B(a)P), Benzo(b)fluoranthene (B(b)F), Indeno (1,2,3-c,d) and pyrene (Ind). Quarterly average of TPAHs concentration of industrial site varied from 12 ng/m<sup>3</sup> to 109 ng/m<sup>3</sup> with an average of about 70.2 ng/m<sup>3</sup> whereas TPAHs concentration of traffic site varied from 39 ng/m<sup>3</sup> to 252 ng/m<sup>3</sup> with an average of 109 ng/m<sup>3</sup>. Further it was observed that the TPAH concentrations showed increasing trend TPAH<sub>Oct</sub>&lt;TPAH<sub>Nov</sub>&lt;TPAH<sub>Dec</sub> due to meteorological factors such as decrease in temperature and low wind speeds resulting in low atmospheric mixing during winter. Indecisive rain during the month of October has also decreased the PAHs concentration in Mangalore. Concurrently TPAH concentrations at traffic site were 1.8 times higher than industrial site in November and successively 1.4 times higher during October and December. Source apportionment using Principal Component Analysis (PCA) assisted by varimax rotation yielded two principal components with the variance of 66.21% and 14.38% respectively. The PCA studies revealed that the sources contributing PAHs were emissions from Diesel/Gasoline vehicles at traffic site and emissions from combustion of different types of fuels from the industrial site. <b>Keywords:</b> Emissions, Polycyclic Aromatic Hydrocarbons (PAHs), Total Polycyclic Aromatic Hydrocarbons (TPAHs), Principal Component Analysis (PCA)</p>
<p>Tzu-Ping LIN GICECG1608054</p>	<p>The Potential of Urban Greenery on the Mitigation of Urban Energy Consumptions in Urban Areas</p> <p>Tzu-Ping Lin Department of Architecture, National Cheng Kung University, 1 University Road, Tainan 701, Taiwan lin678@gmail.com</p> <p>Feng-Yi Lin Department of Architecture, National Cheng Kung University, 1 University Road, Tainan 701, Taiwan</p> <p>Pei-Ru Wu Department of Architecture, National Cheng Kung University, 1 University Road, Tainan 701, Taiwan</p> <p>Chien-Ting Lin Department of Architecture, National Cheng Kung University, 1 University Road, Tainan 701, Taiwan</p> <p><b>ABSTRACT</b></p> <p>Due to climate changes and the development of urban area, the energy demand in urban area is increasing, especially the air-conditioning in hot climate. Therefore, it is important to improve the energy efficiency of buildings in hot-humid Taiwan.</p>





	<p>Therefore, this study is focused on Tainan metropolitan area, Taiwan. Visualization the spatial relationship of energy consumption, the results are presented in GIS. Energy consumption hotspots in Tainan metropolitan area concentrated in residential and commercial dense area with dense high-rise buildings. Furthermore, the greentechology such as urban greenery solutions is evaluated to mitigate the urban heat island and energy consumption in urban area. The results indicate the urban greenery is helpful for reducing the air temperature and cutoff the energy consumption of air-conditioning. The results can be applied for future urban planning and architectural design for less energy consumptions in urban areas. <b>KEYWORDS:</b> greenery, urban energy, mitigation</p>
 <p><b>Dr CW Daniels</b> GICICRST1608051</p>	<p><b>Phytochemistry of Gethyllis multifolia (Kukumakranka), a South African geophyte with medicinal potential</b></p> <p><b>C.W. Daniels</b> Department of Horticultural Sciences, Cape Peninsula University of Technology, P.O. Box 1906, Bellville 7535, South Africa danielsc@cput.ac.za</p> <p><b>F. Rautenbach</b> Oxidative Stress Research Centre, Faculty of Health and Wellness Sciences, Cape Peninsula University of Technology, P.O. Box 1906, Bellville 7535, South Africa</p> <p><b>J.L. Marnewick</b> Oxidative Stress Research Centre, Faculty of Health and Wellness Sciences, Cape Peninsula University of Technology, P.O. Box 1906, Bellville 7535, South Africa</p> <p><b>A.J. Valentine</b> Department of Botany and Zoology, University of Stellenbosch, Private Bag X1, Matieland 7602, Stellenbosch, South Africa</p> <p><b>O. J. Babajide</b> South African Herbal Science and Medicine Institute, University of the Western Cape, Private Bag X17, Bellville 7535, South Africa</p> <p><b>W.T. Mabusela</b> South African Herbal Science and Medicine Institute, University of the Western Cape, Private Bag X17, Bellville 7535, South Africa</p> <p><b>ABSTRACT</b></p> <p><i>Gethyllis multifolia</i> (Amaryllidaceae) is a South African geophyte with medicinal properties. This research investigated the effect of drought and shade on the antioxidant production, as well as the isolation of natural compounds from certain plant parts. The total polyphenol, flavonol/ flavone and flavanone contents, oxygen radical absorbance capacity (ORAC), ferric reducing antioxidant power (FRAP) and radical cation scavenging ability (ABTS) were measured in different plant parts under photo- and drought stress. A significantly (<math>P &lt; 0.05</math>) higher total polyphenol content was observed in the roots under the photo- and drought stresses when compared to the control. An increased antioxidant capacity was observed in the root system of <i>G. multifolia</i> where the FRAP, ORAC and ABTS were found to be significantly (<math>P &lt; 0.05</math>) higher during drought stress when compared to the control. Phytochemical investigation of the leaves, bulbs and roots of <i>G. multifolia</i> revealed the presence of tannins, flavonoids, phenolics, saponins, glycosides (phenolic and</p>

	<p>terpenoid) as well as essential oils, while the test for alkaloids was negative. Further in depth studies on the roots of <i>G. multifolia</i> led to the isolation of three known flavonoids, of which one was also isolated as its endogenously acetylated derivative. Their structures were elucidated by chemical and spectroscopic methods as 2,3-dihydro-7-hydroxy-2-phenyl-4H-1-benzopyran-4-one (1), (1-[2,4-dihydroxyphenyl]-3-phenylpropan-1-one) (2), 2,3-dihydro-5,7-dihydroxy-2-phenyl-4H-1-benzopyran-4-one or pinocembrin (3) and 5,7-diacetoxy-2,3-dihydro-2-phenyl-4H-1-benzopyran-4-one (4). This investigation indicated how environmental conditions can be manipulated to enhance the antioxidant properties of certain plant parts for future cultivation of this species and the isolation of the four natural compounds elucidated its medicinal potential.</p> <p><b>Key words:</b> Amaryllidaceae; drought stress; flavonols; FRAP; photo-stress; polyphenols.</p>
 <p><b>Hend Mandour</b> GICICRST1608052</p>	<p><b>Genetic analysis an in vitro selection for drought tolerance in wheat (<i>Triticum aestivum</i> L.)</b></p> <p><b>Hend Mandour</b> National Research Centre, Dokki, Giza, Egypt hanoda_roky@yahoo.com hendmandour144@gmail.com</p> <p><b>ABSTRACT</b></p> <p>Selection for drought tolerance of fifteen wheat genotypes (five parents and their ten F1 hybrids) was performed under laboratory .Three different callus induction media were used to determine the optimum hormone balance for callus induction from mature embryos of wheat genotypes and also to study the genetic response of the studied wheat genotypes to callus induction. MS media supplemented with different concentrations of poly ethylene glycol (PEG) were used to evaluate the obtained calli for drought tolerance. Then the drought stressed calli were then transferred to plant regeneration medium for studying their ability to regenerate.</p> <p>M2 medium (2mg/l 2,4D+300 mg/l casein hydrolysate) gave the highest callus induction frequency (85.5%) followed by M1 (2mg/l 2,4D) medium (85%) and M3 (2mg/l 2,4D +4 mg/l AgNo3) medium (81.6%). The differences between the three callus induction media were significant for all characters except callus induction frequency (CIF %) and M2 medium was the best media for callus induction.</p> <p>Regeneration was obtained in all genotypes under 0, 5 and 10% PEG, and in most genotypes under 15% PEG, but was completely absent under 20% PEG.</p> <p>Data obtained revealed that the parental cultivars, Giza168 and Sids13 and their hybrid (Giza168 xSids13) were the most drought tolerant genotypes, while the parent Misr1 was the most sensitive to drought.</p> <p>A set of ISSR markers for drought tolerance and (BSA) approach were used in molecular studies. Five tolerant molecular markers appeared in positive molecular markers for drought tolerance.</p>
 <p><b>Atume Emmanuel Terhemen</b></p>	<p><b>Boiling Point Determination Using Formular Method</b></p> <p><b>Atume Emmanuel Terhemen</b> University of Jos, Plateau state, Nigeria atumeemmanuel@gmail.com</p> <p><b>ABSTRACT</b></p> <p>The boiling points of n-alkanes were determined using formular method and compared with experimental results, this method depends on three major factors</p>

GICICRST1608054	<p>which includes; the molar mass of a compound, the energy that the compound possesses and the energy that the compound absorbs from its surrounding, the formula gave 99% accuracy. This method is highly favored at very low entropy. It can be applicable in the petroleum industry, agrochemical industry, reactor design process and proof for the existence of a conventional inductive effect in relatively neutral molecules.</p> <p><b>Key words:</b> Boiling point determination, Atome's formula, Inductive pressure, internal molecular energy, External energy, Atome's hypothesis</p>
 <p>Radhika chelamalla GICICRST1608055</p>	<p><b>Molecular docking studies and ADMET predictions of pyrimidine coumarin scaffolds as potential IDO inhibitors</b></p> <p><b>Radhika Chelamalla</b> Centre for Pharmaceutical Sciences, Jawaharlal Nehru Technological University, Kukatpally, Hyderabad-500085, TS, India cradhika8@gmail.com</p> <p><b>Ajitha Makula</b> Centre for Pharmaceutical Sciences, Jawaharlal Nehru Technological University, Kukatpally, Hyderabad-500085, TS, India</p> <p><b>ABSTRACT</b></p> <p>Indoleamine 2,3-dioxygenase (IDO) is emerging as an important new therapeutic drug target for the treatment of cancer. IDO catalyzes the rate-limiting step of tryptophan degradation through the kynurenine pathway. Reduction in local tryptophan concentration and the production of immunomodulatory tryptophan metabolites contribute to the immunosuppressive effects of IDO. Presence of IDO on dendritic cells in tumor-draining lymph nodes leading to the activation of T cells results in formation of immunosuppressive microenvironment for the survival of tumor cells, shows the importance of IDO as a novel anticancer immunotherapy drug target. Pyrimidine has the unique ability to act through many different mechanisms and its multiple biological activities make it an ideal therapeutic agent in treating cancer. In this effort directed towards the discovery of novel, potent IDO inhibitors for the treatment of cancer. In the present study a library of pyrimidine derivatives has been designed and evaluated for their anti-cancer activity targeting IDO using various computational approaches. Twenty new pyrimidine series of compounds were designed and docking studies were performed. All of them have found to be successfully docked inside the active binding domain of IDO with a binding energy in a range of -4.59 to -9.53 Kcal/mol with predicted IC50 value range of 4.72 micromolar to 456.19 nanomolar. On the other hand, calculated 2D-QSAR molecular descriptor properties of the compounds showed promising ADME parameters and found to be in compliance with Lipinski's rule of five. Among all the twenty compounds tested, compound 14 (N'-(6-chloro-2-oxo-chromene-3-carbonyl)-4-(4-methoxyphenyl)-6-methyl-2-thioxo-3,4-dihydro-1H-pyrimidine-5-carbohydrazide) was found to be the best lead like molecule with a binding energy of -9.53 kcal/mol. Conclusively, newly designed compound 14 of the present study has shown promising anti-cancer potential worth considering for further evaluations.</p> <p><b>Keywords:</b> IDO domain, pyrimidine, coumarin, docking, ADME, QSAR, anti-cancer.</p>



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GICICRST1608056

**Converging Technologies for A Sustainable Agriculture Production: Some Perspectives for the Management of Brinjal Shoot and fruit borer**

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**ABSTRACT**

Agriculture in India has to be a key instrument for producing not only more food but also more income and jobs. Therefore the characteristics of technology have an important role in farmer's adoption decision and to assess how crops will respond to simultaneous changes to the full range of biotic and abiotic stresses. The responses to these challenges will require advances in crop research methodologies. For a sustainable agricultural production, hunger problems can be address with the use of converging current available technologies emphasizing agro ecological practises like integrated pest management (IPM), integrated natural resource management (INRM), and integrated resistance management, use of Biotechnology and ecoagriculture systems. Agricultural biotechnology has given both, commercial production of "bio pesticides" and the making of GM crops, Bt Brinjal being the first vegetable for Indian Agricultural sector for the management of brinjal/eggplant shoot and fruit borer which is still a controversial issue and under debate in Indian agricultural science. Since IPM promotes a diversified approach our research aims at successful on farm trials of IPM modules including local tolerant varieties, newer botanicals, microbial pesticides and sex pheromones under semi arid conditions. Thus in the current scenario of agricultural sustainability along with biodiversity conservation use of a single mortality agent "Bt gene" may lead to mono culture. Therefore rational use of biotechnological inputs as part of IPM strategy can be helpful in long-term solutions for complex farming systems in a profitable manner

Rita Gupta  
GICICRST1608057

**Organoantimony Complexes of Schiff Bases: Synthesis, Characterization and Pharmacological Studies.**


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**ABSTRACT**

Bioorganometallic chemistry is dedicated to the study of biological applications of organometallic compounds with a view to design new medicinal drugs offering better performance than those already known. In recent years chemistry of organoantimony derivatives continue to attract the attention not only for the wide structural diversities but also for biological importance in antimicrobial properties. Studies were conducted in which a series of organoantimony (III) and organoantimony (V) derivatives of schiff's bases of the type  $\text{Ph}_2\text{Sb}[\text{OC}_6\text{H}_4\text{C}(\text{H})\text{NC}(\text{R})\text{COOH}]$  and  $\text{Ph}_3\text{Sb}[\text{OC}_6\text{H}_4\text{C}(\text{H})\text{NC}(\text{R})\text{COOH}]_2$  (where  $\text{R} = -\text{H}_2, -\text{H}_2\text{CH}_2, -\text{HCH}_2\text{C}_6\text{H}_5$ ) were synthesized by the reactions of  $\text{Ph}_2\text{SbCl}$  and  $\text{Ph}_3\text{SbCl}_2$  with the sodium salt of Schiff base in 1:1 and 1:2 molar ratios, respectively in anhydrous benzene solution. Due precautions were taken to handle health hazard chemicals. For this purpose all the excess solvent was removed quantitatively under reduced pressure without allowing them to pollute the environment. All these newly synthesized compounds have been characterized by their elemental analysis and molecular weight measurements. Probable structures of these compounds have been proposed on the bases of spectral studies (I.R, 1H and 13C NMR). Schiff base and its

	<p>correspondence organoantimony (III) and –antimony(V) compounds have also been screened for anti bacterial ,antifungal and antioxidant activities. The results revealed that these newly synthesized compounds show enhanced potential activity as antimicrobial, antioxidant and anti-platelet agents. These synthesized compounds can be a new hope in clinical research and can be used as new class of antimicrobial, antioxidant and anti-platelet agents with potential for clinical use.</p>
<p><b>Khosro Afzali</b> GICICRST1608058</p>	<p><b>Particularity study of architecture of handmade underground village of Maymand in Iran</b></p> <p><b>Khosro Afzali</b> School of Technical Engineering, Dept. Of Architecture, Islamic Azad University, Shoushtar Branch, Iran khosro.afzali@gmail.com</p> <p><b>ABSTRACT</b></p> <p>Maymand is an ancient and very famous village consists of a number of amazing natural and manmade underground living spaces and caves, with more than 12000 years old and is accounted as one of the main national heritage. The village is located in the south-eastern of Iran in Kerman province. It is one of the four Iranian villages registered in UNESCO. In 2005, Maymand was awarded the Melina Mercury international prize for the safe-guarding and management of its cultural landscape. The old houses of Maymand Village are carved like caverns inside the mountain and had corridors and pillars. The houses are made of four or five stories. The cave dwelling units have been made by burrowing into the hillside's soft sedimentary rock deposited in layers during the Mesozoic age. Sedimentary rock is formed by a sea or glacier carrying and depositing as sediment eroded rock from elsewhere as a strata. The concrete-like consistency of the Meymand's sedimentary rock is soft enough to be shaped by manual labour while still being hard enough to support the roofs of the cave units. The houses of the village are caved in the heart of the mountain and the rooms and patios of corridors and columns displaying a social rural architecture. The village has a present peak population of between 130 and 150 people, many of whom are shepherds, living in the village's caves during the winter. When the population is at its highest and migrating to higher pastures in the summer, leaving about 60 residents in the village. The living condition in Maymand is harsh due to the aridity of the land, high temperature in summer and very cold winters. In this research, the architecture and structure of this underground caved village has been extensively studied by literature review and field research.</p> <p><b>Key words:</b> Maymand, architecture, handmade, village, cave</p>
<p><b>Dr Neelam Gupta</b> GICICRST1608061</p>	<p><b>Ground Water Level Scarcity in Jaipur (Rajasthan), India Due to Urbanization and Industrilation</b></p> <p><b>Dr Neelam Gupta</b> Department of Physics, B.B.D. Government P.G. College, Chimanpura (Jaipur), INDIA neelamguptajpr@gmail.com</p> <p><b>ABSTRACT</b></p> <p>Increasing pressure of all living beings and industrialization has threatened the water reservoir in and around urban areas. Use of fertilizers water is highly polluted with different harmful contaminants in Natural water resources are being contaminated due to weathering of rocks &amp; leaching of soil, mining processing etc.</p>

	<p>Protection of surface water reservoir like rivers, streams, ponds and lakes etc in urban areas like Jaipur (Capital of Rajasthan) has become a very difficult task for urban planner and administrators. Uncontrolled urbanization and the growing population pressure are the essential challenges for water management in urbanized regions of the emerging and developing countries. In present analysis physico-chemical parameter of drinking water such as color, pH, hardness, TDS, residual chlorine, dissolved oxygen, electrical conductivity, Free CO<sub>2</sub> have been analyzed. The present paper analyses that due to growth in urbanization and population resulting in lowering of ground water statics. Further due to urbanization changes in land use behavior also risks recharging of ground water. Significant water level table depletion has raised serious concerns over the future development and sustainable development.</p>
<p>Yu Cheong Chon GICICRST1608063</p>	<p>Analysis of the effective diversification entry mode in the pharmaceutical industry</p> <p>Yu Cheong Chon Division of Technology Foresight, KISTEP, South Korea ycchon@kistep.re.kr</p> <p><b>ABSTRACT</b></p> <p>Diversification strategy such as strategic alliance is one of the voluntary arrangements between firms involving exchange, sharing, or co-development of products, technologies, or services. Diversification makes firms to speed up their technological development. Especially in the Pharmaceutical industry, diversification has been inevitable to expand firms' technological ability and performance. Many researchers have investigated the relationship between diversification entry mode and firms' performance from 1980s. The purpose of this study is to examine the relationship between diversification entry mode and performance. This study assumes that different types in entry mode would make different amounts of performance. To examine the hypotheses, Medtrack's database which includes pharmaceutical companies' products, financial information, research and development activities, partnership, alliance and M&amp;A would be used. From the analytical results, the relationship between the type of entry mode and performance could be investigated. Also, the importance of mode to efficiently increase firms' performance in pharmaceutical industry could be explained.</p>
 <p>Dhanashri P. Patil GICICRST1608064</p>	<p>Modeling of Energy Consumption in foundries by Integrating Renewable Energy Sources: Kolhapur Foundry Sector</p> <p>Dhanashri P. Patil department of technology, Shivaji University, Kolhapur, India patildhanashrip@gmail.com</p> <p>Nilkanth N. Shinde Mahesh M. Wagh</p> <p><b>ABSTRACT</b></p> <p>Energy consumption pattern in industrial sector significantly affects the efficiency of energy system in industries. Increasing demand, scarce availability of resources with limited environmental impact are outlining aspects of today's energy problem. Modeling of energy consumption relies on two major factor i.e energy cost and CO<sub>2</sub> emission. Objectives of paper are to analyse the energy consumption pattern in Kolhapur foundry sector and check the feasibility of renewable energy for Kolhapur</p>


	<p>region, modeling for minimization of energy cost and minimization of CO2 impact. Genetic algorithm multi-objective optimization is carried out by using MATLAB to solve these two conflicting objectives. Pareto optimal solutions display tradeoff information between minimization of total energy cost and CO2 emission. Such tradeoff information is very helpful to a higher level decision-maker in selecting a design with other considerations. Index Terms— Energy cost, Genetic algorithm, MATLAB, optimization</p>
<p>Hae-Woo Lee GICICRST1608065</p>	<p><b>Effect Of Welding Heat Inputon Microstructure And Texture Of Inconel 625 Weld Overlay Studied Using Electron Backscatter Diffraction Method</b></p> <p style="text-align: center;"><b>Joon-Suk Kim</b> Department of Metallurgical Engineering, College of Engineering, Dong-A University, Busan, R. Korea, 49315</p> <p style="text-align: center;"><b>Hae-Woo Lee</b> Department of Metallurgical Engineering, College of Engineering, Dong-A University, Busan, R. Korea, 49315 hwlee@dau.ac.kr</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The grain size and the texture of three specimens prepared at different heat inputs were determined using optical microscopy and the electron backscatter diffraction method of scanning electron microscopy. Each specimen was equally divided into FLZ (fusion line zone), CDZ (columnar dendrite zone), and SZ (surface zone) according to the location of the weld. Fine dendrites were observed in the FLZ, coarse dendrites in CDZ, and dendrites grew perpendicular to FLZ and CDZ. As the heat input increased, the melted zone in the vicinity of FLZ widened due to the higher Fe content. A lower image quality value was observed for FLZ compared to the other zones. The results of grain size measurement in each zone showed that the grain size of SZ became larger as the heat input increased. From the inverse pole figure (IPF) map in normal and orthogonal directions (ND and RD), as the heat input increased, a specific orientation was formed. However, a dominant [001] direction was observed in the RD IPF map. Key words: Inconel, EBSD, IPF, IQ, grain size, dendrite</p>
 <p><b>Daryl V. Pascua</b> GICICRST1608066</p>	<p><b>Hydrological Modeling of Sapang Buho River Basin Using Integrated Flood Analysis System</b></p> <p style="text-align: center;"><b>Daryl V. Pascua</b> Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines daryl.pascua@gmail.com</p> <p style="text-align: center;"><b>Armando N. Espino Jr.</b> Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines</p> <p style="text-align: center;"><b>Emmanuel V. Sicat</b> Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines</p> <p style="text-align: center;"><b>Victorino T. Taylan</b> Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The study was conducted to apply the Integrated Flood Analysis System (IFAS)</p>

	<p>hydrologic model in determining the discharge of Sapang Buho river basin. Specifically, it aimed to calibrate and identify which IFAS parameters are sensitive to influence the shape and volume of the flood hydrograph, and to validate and show application of the IFAS model. Sensitivity analysis revealed that HIGD (initial water height of aquifer tank), HCGD (water height where the slow unsaturated subsurface flow occurs), AGD (baseflow coefficient), AUD (slow unsaturated subsurface flow regulation coefficient), and RRID (initial water level in the river course) are the sensitive parameters on river baseflow. For the rising part of the flood, HIGD, FALFX (rapid unsaturated subsurface flow regulation coefficient), HCGD, RLCOF (meander coefficient), STS (saturated moisture content), HFMXD (maximum water height), HFMND (height where rapid unsaturated subsurface flow occurs), SNF (surface roughness coefficient), RBS (coefficient of the resume' law), HMXSD (subsurface tank height), HISDO (initial water height of subsurface tank), HFOD (minimum height for infiltration to start), and SKF (vertical hydraulic conductivity) are the sensitive parameters. For the peak flow, HIGD, HCGD, STS, FALFX, HISDO, HMXSD, SKD (vertical saturated hydraulic conductivity), AUD, SKF, and SNF are the sensitive parameters. For the set part of the flood, HIGD, HCGD, STS, HISDO, HMXSD, AUD, STW (moisture content at field capacity), FALFX, SKD, RLCOF, and HFMXD are the sensitive parameters. For the total volume of the flood, HIGD, HCGD, HISDO, STW, STS, HMXSD, and AGD are the sensitive parameters. Model calibration using parameters in the final Calibration resulted to NSE of 92.52%, PBIAS of -8.68%, and RSR of 0.27. The model validation resulted to NSE of 83.78%, PBIAS of -13.34%, and RSR of 0.16. The sample application of IFAS model simulation resulted to NSE of 78.75%, PBIAS of -18.40%, and RSR of 0.46.</p> <p><b>Keywords</b>—Flood simulation, hydrological modeling, model calibration and validation, sensitivity analysis.</p>
<p><b>Hyun Jin Oh</b> GICICRST1608067</p>	<p><b>Fabrication of Non-Spherical Polymeric Particles and Its Application</b></p> <p><b>Hyun Jin Oh</b> School of Applied Chemical Engineering, Major in Polymer Science and Engineering, Kyungpook National University, Daegu, KS002 Republic of Korea</p> <p><b>Se Jeong Hwang</b> School of Applied Chemical Engineering, Major in Polymer Science and Engineering, Kyungpook National University, Daegu, KS002 Republic of Korea</p> <p><b>Ju Hyang Park</b> School of Applied Chemical Engineering, Major in Polymer Science and Engineering, Kyungpook National University, Daegu, KS002 Republic of Korea</p> <p><b>Dong Choon Hyun</b> Department of Polymer Science Engineering, Kyungpook National University, Daegu, KS002, Republic of Korea dong.hyun@knu.ac.kr</p> <p><b>ABSTRACT</b></p> <p>This paper describes a fabrication of nano or micro sized polymer particles are available for bio-imaging, drug-delivery and so on. The process contains monolayer self-assembly of polystyrene particles, molding on the negative photoresist(SU-8), PDMS replication, imprint on the PVP solution. Hexagonally packed monolayers prepared by rubbing and were used as mold for preparing patterned SU-8 mater.</p>



	<p>The morphological size of SU-8 master was determined by diameter of particles and thickness of SU-8. And then PDMS replica was prepared and used as mold for patterned PVP template. Consequently it was used for fabricating polymer particles and performs for surfactant when dissolving in water also. These particles could be used by functional application such as magnetic polymer particle for bio-imaging, drug delivery or heterogeneous polymer particle and so on.  <b>Keywords: Monolayer Self-assembly, Replica, Bio-imaging, Drug delivery</b></p>
	<p style="text-align: center;"><b>Multi-Agent Drug Delivery Using Polymeric Hollow Particles</b></p> <p style="text-align: center;"><b>Hyun Jin Oh</b>  School of Applied Chemical Engineering, Major in Polymer Science and Engineering, Kyungpook National University, Daegu, KS002 Republic of Korea</p> <p style="text-align: center;"><b>Se Jeong Hwang</b>  School of Applied Chemical Engineering, Major in Polymer Science and Engineering, Kyungpook National University, Daegu, KS002 Republic of Korea</p> <p style="text-align: center;"><b>Ju Hyang Park</b>  School of Applied Chemical Engineering, Major in Polymer Science and Engineering, Kyungpook National University, Daegu, KS002 Republic of Korea</p> <p style="text-align: center;"><b>Dong Choon Hyun</b>  Department of Polymer Science Engineering, Kyungpook National University, Daegu, KS002, Republic of Korea  dong.hyun@knu.ac.kr</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>This study introduces a simple system for multi-agent delivery. The system consists of a biodegradable polymer particle with a hollow inner structure, together with a hole on its surface that can be completely or partially sealed via thermal annealing. A hydrophobic dye, Nile-red, entrapped within the shell of hollow particles presents a sustained release behavior while methylene blue, a hydrophilic model agent, encapsulated in the hollow inner structure shows a fast release behavior. The release profiles of the probes can be further independently controlled by encapsulating methylene blue-loaded polymer nanoparticles, instead of free dye, in the hollow particle with a small hole on its surface.  <b>Keywords: Monolayer Self-assembly, Replica, Bio-imaging, Drug delivery</b></p>
<p><b>Pooja Sharma</b>  <b>GICICRST1608070</b></p>	<p style="text-align: center;"><b>Viscous Dissipation Effects on MHD Flow with Variable Suction and Constant Heat Source</b></p> <p style="text-align: center;"><b>Pooja Sharma</b>  Department of Mathematics &amp; Statistics, Manipal University, Jaipur  pooja_2383@yahoo.co.in</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The aim of the present study is to investigate the steady two dimensional flow of a viscous incompressible electrically conducting fluid over an infinite, porous, non-conducting flat hot plate in the presence of transverse magnetic field with variable suction, constant heat source and viscous dissipation. The effect of various parameters on the velocity and temperature profiles are derived, discussed and shown through graphs. The coefficient of heat transfer in terms of the Nusselt</p>

	<p>number at the flat plate is also calculated. It is observed that the trend of the change in the temperature in the boundary layer becomes steeper near the wall as suction increases. However the heat transfer parameter increases steadily with the non-dimensional coordinate to an asymptotic value.</p>
<p>Beenish Basharat GICICRST1608071</p>	<p><b>Oxidative Stress Leads to the Death of an Organism by Damaging Vital Biomolecules</b></p> <p style="text-align: center;">Beenish Basharat University of Agriculture University, Faisalabad abeenish10@yahoo.com</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Oxidative stress leads to the death of an organism by damaging vital biomolecules. For protection from the oxidative stress, every organism has a defensive system called antioxidant defense system. Catalase enzyme is an important part of this system that degrades oxidative radicals. The comparative assessment of catalase activity in gills, kidney and liver of <i>Labeo rohita</i> was the purpose of this study. The fish were collected from the Fish farms, Department of Zoology, Wildlife and Fisheries, University of Agriculture Faisalabad. Fish were dissected and the organs viz. gills, kidney and liver were extracted. The extracted organs were homogenized in phosphate buffer (pH 7.0). The homogenized tissues were filtered with the help of filter paper. The filtrate homogenized material was centrifuged at 10,000 rpm for 10 minutes. The supernatants and residues were separated and stored at 4°C until measure the activity of catalase enzyme at 240 nm with the help of spectrophotometer. The inferences of present study revealed higher activity of catalase in liver tissues (128±0.3 UmL-1) and minimum in gill tissues (105.6±0.5 UmL-1). Statistical analysis showed significant differences (p≤0.05) among different body tissues catalase activity.</p>
 <p>K C Sharda GICICRST1608073</p>	<p><b>Ecological Sanitation And Its Benefits: An Experimental Demonstration To Raise Awareness And Livelihood In Central Nepal</b></p> <p style="text-align: center;">K C Sharda Graduate School of Global Environmental Studies, Kyoto University, Japan shrdkc@gmail.com</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Ecological sanitation can be defined as water conserving and nutrient recycling system for use of human urine and composted fecal matter in agriculture. In Nepal, every year 180 thousand ton of chemical fertilizer were imported. Ecological sanitation would count a lot to utilize locally available resources, to regenerate soil fertility, and to save national currency. The study was carried out at Makawanpur, Nepal from March – August, 2016 to test the efficacy of human urine for improving crop performance and to estimate the feasibility of ecological sanitation. Five eco-san toilets were constructed and questionnaire survey was done. Villagers were asked about socio-economic parameters, farming practices, awareness of ecological sanitation and fertilizer value of urine. Eighty three percent respondents were engaged in agriculture growing mainly vegetables may raise the feasibility of ecological sanitation. Their concern on water deficiency in dry season, high demand of chemical fertilizer, sanitation awareness need to be solved. In the field experiment, cauliflower was cultivated to compare the fertilizer value of urine with chemical fertilizer and no fertilizer with three replications. Urine fertilized plots produced similar yields compared to chemical fertilizer and higher yields than without</p>


	<p>fertilizer. To be able to generalize this conclusion, it is important to conduct experiments with different seasonal crops</p>
 <p>Mazhar Abbas GICICRST1608074</p>	<p>An insight to the key feasibility indices in the Wind Energy Harvesting Technology</p> <p>Mazhar Abbas Korea University of Science and Technology isphani111@keri.re.kr</p> <p>Kim Eung Sang Korea Electrotechnology Research Institute, Korea eskim@keri.re.kr</p> <p><b>ABSTRACT</b></p> <p>Design and Deployment of Wind Energy Harvesting Technology is an ongoing challenge which needs multiple expertise to make a decision about feasibility. So far the majors into which this technology is divided just to ease the study are: Wind Resources, Tests and Measurements, Economy, Turbine technology, Aerodynamics, Materials, Structural Mechanics and Electrical systems. Every section in this technology has some key feasibility indices which have been the most starring topics in the comity of Research. Most of the research articles have discussed about the core feasibility indicators related to only one section of this technology such as material section or mechanical section or any other section. Contrary to the past articles, this paper takes a move to explore all the key feasibility indices in the Design and Deployment of this technology in parallel. This way a reader can understand this green technology in a big picture and take a right sequence to understand the relation between different sections. This paper will develop case studies based on the assumed but appropriate data. The evaluation of case studies will further ease the understanding to insight of this green demanding technology.</p> <p><b>Keywords:</b> Annual Energy Production, Mean wind speed, Wind Turbulence, wind thrust, Rotor speed</p>
<p>Rocky Marius Q. de Ramos GICICRST1608077</p>	<p>Cradle to Gate Life Cycle Assessment of Secondary Mangrove Forest in Bintuni Bay, West Papua, Indonesia</p> <p>Rocky Marius Q. de Ramos Engineering Graduate Program, School of Engineering, University of San Carlos, Talamban, Cebu City 6000 Philippines Department of Industrial Engineering, School of Engineering and Architecture, Ateneo De Davao University, Davao City 8000 Philippines rmqderamos@gmail.com</p> <p>Michael Lochinvar S. Abundo Energy Research Institute, Nanyang Technological University, 50 Nanyang Ave, 639798Singapore michael.abundo@ntu.edu.sg</p> <p>Evelyn B. Taboada BioProcess Engineering and Research Center, Department of Chemical Engineering, University of San Carlos, Talamban, Cebu City 6000 Philippines evelynbtaboada@gmail.com</p> <p><b>ABSTRACT</b></p> <p>In this work, the cradle to gate plus transport life cycle assessment is conducted in</p>

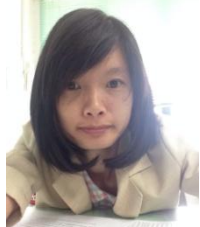
	<p>order to assess the impact of mangrove woodchip production in Bintuni bay, West Papua Indonesia to the environment. The cradle to gate plus transport life cycle assessment includes the analysis of non-renewable energy use (NRE), global warming potential or carbon footprint, acidification potential and ozone creation potential of mangrove logging, processing and shipment. Using 1 m<sup>3</sup> of as the functional unit, mangrove woodchips has the lowest NRE, carbon footprint, acidification potential and ozone creation potential compared to other wood products. Mangrove processing incur less fuel because it is delivered in bulk to the processing area via barges in comparison to other wood products that are delivered by trucks and mangrove woodchips are transported without drying, while other wood products are kiln dried before being delivered to customers. The current shipping of mangrove woodchips to customers has the greatest environmental impact because of the use of bunker fuel. The processing of mangrove woodchips use diesel exclusively for fuel in its power source. Forest residues from logging can be a source of renewable fuel and may also be another source of new products.</p> <p><b>Keywords:</b> Life Cycle Assessment plus Transport, Carbon Footprint, Non-Renewable Energy, Mangroves,</p>
<p>Rozida Mohd Khalid GICICRST1608078</p>	<p><b>Secondary Metabolites from Some Microorganism</b></p> <p>Rozida Mohd Khalid School Of Chemical Sciences And Food Technology, Faculty Of Science And Technology, UniversitiKebangsaan Malaysia, Selangor, Malaysia rozidakhalid@ukm.edu.my, rozi_khalid@yahoo.com</p> <p><b>ABSTRACT</b></p> <p>Microbial gene expressions of secondary metabolites are usually influenced by its surrounding environment. Thus, many studies manipulate microbial culture conditions to induce production of new metabolites. Here, <i>Mycosphaerellagraminicola</i> and <i>Hypoxylonrickii</i> (fungi), <i>Glaciozymaantarctica</i> (yeast) and <i>Bacilluslehnensis</i> (bacteria) were grown at different culture conditions and/or induced with epigenetic modifiers for production of new metabolites. Results show that some culture conditions are much more conducive for gene expression and that the efficacy of epigenetic modifiers to induce gene expression varies amongst microorganisms.</p> <p><i>Mycosphaerellagraminicola</i>, <i>Hypoxylonrickii</i>, <i>Glaciozymaantarctica</i>, <i>Bacillus lehnensis</i>, microbial secondary metabolites</p>
 <p>Rizafizah Othaman GICICRST1608080</p>	<p><b>Nanocrystalline Cellulose (NCC) Aerogel for Carbon Dioxide Capture</b></p> <p>Rizafizah Othaman School of Chemical Sciences and Food Technology, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia Polymer Research Center, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia rizafizah@ukm.edu.my</p> <p>Nurul Hanisah Mohd School of Chemical Sciences and Food Technology, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia</p>

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<p><b>Imran Ullah</b> <b>GICICRST1608081</b></p>	<p><b>MHD Free Convection Flow of Casson Fluid over a Permeable Nonlinearly Stretching Sheet with Chemical Reaction</b></p>



	<p style="text-align: center;"><b>Imran Ullah</b> Department of Mathematical Sciences, Faculty of Science, Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Johor, Malaysia ullahimran14@gmail.com</p> <p style="text-align: center;"><b>Ilyas Khan</b> Basic Sciences Department, College of Engineering Majmaah University, P.O. Box 66, Majmaah 11952, Saudi Arabia ilyaskhanqau@yahoo.com</p> <p style="text-align: center;"><b>Sharidan Shafie</b> Department of Mathematical Sciences, Faculty of Science, Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Johor, Malaysia .sharidan@utm.my</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The problem of heat and mass transfer free convection flow of Casson fluid over a porous non-linearly stretching sheet in the presence of chemical reaction is investigated. Moreover the effect of magnetic field is also considered. The governing partial differential equations are transformed into ordinary differential equations by make use of suitable transformations and then solved numerically by Keller-box method. The results for skin friction, reduced Nusselt number and Sherwood number are obtained and compared with previous results of the existing literature. The results are also reflected in good agreement. It is noted that concentration of Casson fluid reduces rapidly by increasing Schmidt number and chemical parameter. Furthermore, thermal buoyancy and mass convective parameters enhance the rate of heat transfer whereas it reduces with increase of chemical reaction parameter. <b>Keywords:</b> MHD; Casson fluid; Non-linearly stretching sheet; Suction/Blowing; Free convection</p>
 <p><b>Jae Lee Kai Wei</b> GICICRST1608084</p>	<p style="text-align: center;"><b>Mobile Applications for children undergoing MRI.</b></p> <p style="text-align: center;"><b>Dr Franklin Anariba</b> franklin_anariba@sutd.edu.sg</p> <p style="text-align: center;"><b>Gabrielle Quek Wan Juan</b> gabrielle_quek@mymail.sutd.edu.sg</p> <p style="text-align: center;"><b>Jae Lee Kai Wei</b> jae_lee@mymail.sutd.edu.sg</p> <p style="text-align: center;"><b>Wong Ching Mun</b> chingmun_wong@mymail.sutd.edu.sg</p> <p style="text-align: center;"><b>Dr Tang Phua Hwee</b> tang.phua.hwee@singhealth.com.sg</p> <p style="text-align: center;"><b>Seah Ai Cheng Tina</b> Tina.Seah.AC@kkh.com.sg</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p><b>It is a constant challenge for practitioners and MR technologists to get young</b></p>

	<p>children to cooperate and lie still for a one hour scan to obtain good quality images. Our study aims to establish the effectiveness of using mobile applications to increase the confidence of the children by preparing them for their MRI scan and to evaluate if this increase in confidence results in increased compliance of the children during their scans.</p> <p>A randomized controlled trial involving 77 children was conducted. Children were randomly assigned into a control group where the children undergo no intervention and a group shown a video of a cartoon character undergoing an MRI scan followed by an interactive mobile application where the child encouraged a panda to undergo an MRI scan. A short questionnaire comprising of 3 items to assess the children's understanding of the procedure and their level of confidence in keeping still was administered once to the control group and before and after the intervention for the other group.</p> <p>Results showed that the demographic profile of the children in each group was similar. Mean age for the control group was 12.6 years and for the group with both cartoon video and interactive mobile application was 12.5 years. In the control group consisting of 38 children, 17 children (44.7%) were aware they were in the hospital for a scan, 11 (28.9%) of them were confident in keeping still for the scan. In the group that was shown the cartoon followed by the interactive mobile application, consisting of 39 children, 37 children (94.9%) were aware they were in the hospital for a scan and 19 (48.7%) of them were confident in keeping still for the scan before the intervention. After viewing the cartoon and interactive mobile application, 38 children (97.4%) were aware that they were in the hospital for a scan and 33 (84.6%) of them were confident in keeping still for the scan. There was a 2.5% increase in awareness and a 35.9% increase in confidence for the children that was shown both the cartoon and the interactive mobile application.</p> <p>It is demonstrated that an interactive mobile application has the ability to increase the awareness and confidence of children coming for MRI scans. Hence we conclude that interactive mobile applications have the potential to provide a superior medical experience for children.</p>
 <p>Mr. Molla Basir Ahamed GICICRST1608053</p>	<p><b>Rational function of a meromorphic function sharing a small function with its Differential Polynomials</b></p> <p>Abhijit Banerjee Prof. Abhijit Banerjee, Deppt. of Mathematics, University of Kalyani, West Bengal, 741235, INDIA abanerjeekal@gmail.com</p> <p>Molla Basir Ahamed Mr. Molla Basir Ahamed, Deppt. of Mathematics, KGTM (Bagdogra College), West Bengal, 734014 INDIA bsrhmd117@gmail.com</p> <p><b>ABSTRACT</b></p> <p>In the paper we have mainly dealt with the relation between a generalized differential polynomial and a rational function <math>R(f)</math> of a non-constant non-entire meromorphic function <math>f</math> sharing a small function <math>a \equiv a(z) \neq 0, \infty</math>. Our results will extend a recent results in [1], [2] and [3] in the direction of Brućk Conjecture. We have exhibited some examples which shows that the result of this paper may or may not be true for non-constant entire functions and conditions obtained in the theorems cannot be removed. Other examples have also substantiate our certain claims.</p>



Tepupsorn Saensuk  
GICICRST1608062

**Antibacterial activity of Edible Mushrooms at The KhaoKra-dong Volcano Forest Park on Samed Sub District, Muang District, Buriram Province**

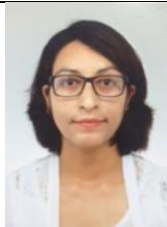
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**Abstract**

The antimicrobial properties of ethanol, hot and room temperature extracts of some mushroom species (*Amanita princeps*, *Russula emetic*, and *Geastrumsaccatum*) on some Gram negativebacteria (*Escherichia coli*), Gram positive bacteria (*Bacillus cereus*, *Staphylococcus aureus*) and yeast (*Candida albicans*) were investigated. Antimicrobial activity was performed by agar disc diffusion. The ethanol extracts of *A. princeps* inhibited growth of *E. coli*, *B. cereus* and *S. aureus*. Ethanolic extract of *A. princeps* showed wide spectrum of antimicrobial effect againststest organisms. The hot water extract of *R. emetic* which showed zone of inhibition (20.70 mm). The hot water extract of *G. saccatum* showed antimicrobial activity against *C. albicans* (22.78 mm). Ethanol and hot water extracts of most of the mushroom species contained more bioactive substance than cold water extract. The significance of antimicrobial activity of mushroom extracts was compared with the standard antibiotics (gentamicin, 5 µg/disc) using chi-square. This study suggest that *A. princeps* possessed broad-spectrum of activity against microbial isolates used.

**Key word : Antimicrobial, Edible Mushrooms, Mushroom extract**



K C Sharda  
GICICRST1608073

**Ecological Sanitation And Its Benefits: An Experimental Demonstration To Raise Awareness And Livelihood In Central Nepal**

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**ABSTRACT**

Ecological sanitation can be defined as water conserving and nutrient recycling system for use of human urine and composted fecal matter in agriculture. In Nepal, every year 180 thousand ton of chemical fertilizer were imported. Ecological sanitation would count a lot to utilize locally available resources, to regenerate soil fertility, and to save national currency. The study was carried out at Makawanpur, Nepal from March – August, 2016 to test the efficacy of human urine for improving crop performance and to estimate the feasibility of ecological sanitation. Five eco-san toilets were constructed and questionnaire survey was done. Villagers were asked about socio-economic parameters, farming practices, awareness of ecological sanitation and fertilizer value of urine. Eighty three percent respondents were engaged in agriculture growing mainly vegetables may raise the feasibility of ecological sanitation. Their concern on water deficiency in dry season, high demand of chemical fertilizer, sanitation awareness need to be solved. In the field experiment, cauliflower was cultivated to compare the fertilizer value of urine with chemical fertilizer and no fertilizer with three replications. Urine fertilized plots produced similar yields compared to chemical fertilizer and higher yields than without fertilizer. To be able to generalize this conclusion, it is important to conduct experiments with different seasonal crops.





<p><b>Babak Khalifeh Soltan</b> GICECG1608071</p>	<p><b>Building Energy Systems Operation Optimization with Ice Storage – A Real Time Approach</b></p> <p><b>Babak Khalifeh Soltan</b> PhD Candidate , Engineering, Central Institute of Technology, PERTH</p> <p><b>ABSTRACT</b></p> <p>Energy consumption in building energy systems with ice storage is in tight relationship with the operation logic of the associated HVAC system. Furthermore, engineering calculation norms describe design conditions as the best operating mode for ice storage air conditioning. Since performance of ice storage air conditioning sub-systems are susceptible to environmental variations as well as operational priorities, dynamic operation optimization of these systems with proper controllers is desirable from both sustainability and business perspective. This in turn leads to an increment in heat transfer rate and ultimately, to an overall improvement in the efficiency of the building energy system.</p> <p>In this article the dynamic behavior of energy system with ice storage in a typical building under certain optimization strategies has been assessed. The BEMWIS (Building Energy Management with Ice Storage System) has been fitted to analyze automatically collected data during daily operation of the energy system and load balancing via stored energy as ice, and to properly respond to the variable inputs. The knowledge based control system, uses data bases containing equipment operation data, as well as corresponding mathematical models for the overall energy consumption. The optimization methodology development has been based on empirical experiences gained while running ice storage air conditioning. The optimization methodology applies load prediction according to the calculations made by decision making system, which records, shifts, and crosses out unnecessary energy consumption.</p>
 <p><b>Nelson Nunes Tenorio Junior</b> GICICRST1608072</p>	<p><b>Tool Based On Knowledge Management Process: An Interview Protocol to Gather Functional Requirements from Software Industry Experts</b></p> <p><b>Nelson Tenório Jr</b> Researcher from Instituto Cesumar de Ciência, Tecnologia e Inovação (ICETI), UniCesumar, Maringá, Paraná, Brazil <a href="mailto:nelson.tenorio@unicesumar.edu.br">nelson.tenorio@unicesumar.edu.br</a></p> <p><b>Danieli Pinto</b> Student in Masters , Unicesumar, Maringá, Brasil <a href="mailto:daniene@gmail.com">daniene@gmail.com</a></p> <p><b>Amanda Ferrarezi Vidotti</b> Discente, Unicesumar, Maringá, Brasil <a href="mailto:amanda_vidoti13@hotmail.com">amanda_vidoti13@hotmail.com</a></p> <p><b>Mariana Santos de Oliveira</b> Discente, Unicesumar, Maringá, Brasil <a href="mailto:mariana_santosoliveira@hotmail.com">mariana_santosoliveira@hotmail.com</a></p> <p><b>Gisele Caroline Urbano</b> Discente, Unicesumar, Maringá, Brasil <a href="mailto:gisele_urbano@hotmail.com">gisele_urbano@hotmail.com</a></p>

	<p style="text-align: center;"><b>Flávio Bortolozzi</b> Researcher from Instituto Cesumar de Ciência, Tecnologia e Inovação (ICETI), UniCesumar, Maringá, Paraná, Brazil flavio.bortolozzi @unicesumar.edu.br</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The company's knowledge is composed of different individual pieces of knowledge. In the software industry, the individuals use personal technologies to communicate each other project issues which generate a part of the organizational knowledge. However, using those tools in that way the software industry faces the knowledge fragmentation problem which creates difficulty in utilizing KM processes (e.g. capture, store, and recover) in their decision-making. This research proposed an interview protocol to gathering functional requirements in order to develop a KM tool concept to avoid knowledge fragmentation within the software industry. The result achieved was an interview protocol, guided by KM process mapping, in order to interview software industry experts to gather requirements for a KM tool concept. <b>Keywords</b> bibliographic research, questionnaire, information technology.</p>
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20-21 October 2016, Hong Kong

» 6th International Conference on Researches in Science and Technology

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- » 7th International Conference on Researches in Science and Technology  
(ICRST), 10-11 Nov 2016, Singapore
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20-21 Dec 2016, Dubai
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(ICRST), 20-21 Dec 2016, Dubai
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29-30 Dec 2016, Bangkok, Thailand
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(ICRST), 29-30 Dec 2016, Bangkok, Thailand
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21-22 Feb 2017, Dubai
- » 10th International Conference on Researches in Science and Technology  
(ICRST), 21-22 Feb 2017, Dubai
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