



**Global Research &  
Development Services**

**CONFERENCE PROCEEDINGS**

**15th International Conference on Researches in Science and Technology  
(ICRST), 23-24 June 2017, Kuala Lumpur**

**23-24 June 2017**

Conference Venue

University of Malaya, Rumah Kelab PAUM Clubhouse (Persatuan Alumni  
Universiti Malaya), Kuala Lumpur, Malaysia

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**Global Research &  
Development Services**

**KEYNOTE SPEAKER**



**Dr. Md. Aminur Rahman**

**Senior Associate Professor, Laboratory of Marine Biotechnology,  
Institute of Bioscience, Universiti Putra Malaysia (UPM), Selangor  
Darul Ehsan, Malaysia**



**Dr. Md Saidin Wahab**

**Faculty of Mechanical and Manufacturing Engineering, Universiti  
Tun Hussein Onn Malaysia (UTHM), Malaysia**

**KEYNOTE SPEAKER**



**Sampath Emani**  
**Universiti Teknologi PETRONAS, Malaysia**



Dr. Md. Aminur Rahman

**Analysis of Global Sea Cucumber Fisheries: Their Culture Potential, Biomedical Application, Effective Management and Extinction Risks**

**Dr. Md. Aminur Rahman**

Senior Associate Professor, Laboratory of Marine Biotechnology, Institute of Bioscience, Universiti Putra Malaysia (UPM), Selangor Darul Ehsan, Malaysia

**Abstract**

Sea cucumber (Echinodermata: Holothuroidea) is a high-valued marine invertebrate, usually found in the shallow benthic areas and deep seas across the world and has significant biological, ecological, aquacultural, nutritional and pharmaceutical values. They have high economic value coupled with increasing global production and trade. The principal products of sea cucumbers, familiarly known as “bêche-de-mer”, or “gamat”, have long been using for food and folk medicine in the peoples of Asia and Middle East. Nutritionally, sea cucumbers have an exciting profile of valuable nutrients such as Vitamin A, Vitamin B1, Vitamin B2, Vitamin B3, and minerals, specifically calcium, magnesium, iron and zinc. A number of distinctive biological and pharmacological activities including anti-angiogenic, anticancer, anticoagulant, anti-hypertension, anti-inflammatory, antimicrobial, antioxidant, antithrombotic, antitumor and wound healing have also been attributed to various species of sea cucumbers. Therapeutic properties and medicinal benefits of sea cucumbers can be linked to the presence of a wide array of bioactive compounds, especially triterpene glycosides (saponins), chondroitin sulfates, glycosaminoglycan, sulfated polysaccharides, sterols (glycosides and sulfates), phenolics, cerberosides, lectins, peptides, glycoprotein, glycosphingolipids and essential fatty acids. We accumulated global aquaculture production, harvestings, economic data, and country-specific assessment and management reports to synthesize global trends in sea cucumber fisheries, evaluate potential drivers, and test for local and global exploitation patterns. Although some sea cucumber fisheries have existed for centuries, catch trends of most individual fisheries followed boom-and-bust patterns since the 1950s, declining nearly as quickly as they expanded. New fisheries expanded five to six times faster in 1990 compared to 1960 and at an increasing distance from Asia, encompassing a global fishery by the 1990s. Global sea cucumber production was correlated to the Japanese yen at a leading lag. Regional assessments revealed that population declines from overfishing occurred in 81% of sea cucumber fisheries, average harvested body size declined in 35%, harvesters moved from near- to off-shore regions in 51% and from high- to low-value species in 76%. Thirty-eight per cent of sea cucumber fisheries remained unregulated, and illegal catches were of concern in half. These results suggest that development patterns of sea cucumber fisheries are largely predictable, often unsustainable and frequently too rapid for effective management responses. We discuss potential ecosystem and human community consequences and urge for better monitoring and reporting of catch and abundance, proper scientific stock assessment and consideration of international trade regulations to ensure long-term and sustainable harvesting of sea cucumbers worldwide.

Sea cucumbers represent an important income source to coastal communities in many Pacific islands, but are now worth only a fraction of historical values. Sea cucumbers have been harvested for hundreds of years for trade with Asia and were probably one of the first real ‘exports’ from the Pacific islands. Unfortunately, the increase in demand and price, combined with the development of cash economies and

	<p>growing coastal populations in many islands, has led to widespread overfishing of the resource across much of this region. There is a high level of interest in adoption of aquaculture techniques to restore production levels, but different capacity levels require implementation of different techniques. Some Pacific island countries and territories have completed successful research trials of hatchery and release techniques, and now have capacity to scale up this activity. Factors that work in favour of successful aquaculture include pristine marine environments, long familiarity with sea cucumbers as a commodity, and traditional marine tenure systems that in some places can provide a basis for management of released sea cucumbers. Challenges still remain include lack of technical capacity, unproven effectiveness of sea cucumber releases, poaching and effective conservation strategies. <b>Keywords:</b> Sea cucumber, Beche-de-mer, Overfishing, Biomedicine, Aquaculture, Management, Extension risks</p>
 <p><b>Mohamad Nurul Azman Mohammad Taib GICECG1704051</b></p>	<p><b>Preparation of Thermally Stable and Highly Crystallinity of Nano Cellulose</b></p> <p><b>Mohamad Nurul Azman Mohammad Taib</b> Nanotechnology And Catalysis Research Centre(Nanocat),University Of Malaya , Kuala Lumpur, Malaysia</p> <p><b>Wageeh Abdulhadi Yehya</b> Nanotechnology And Catalysis Research Centre(Nanocat),University Of Malaya , Kuala Lumpur, Malaysia</p> <p><b>Sharifah Bee O. A. Abdul Hamid</b> Nanotechnology And Catalysis Research Centre(Nanocat),University Of Malaya , Kuala Lumpur, Malaysia</p> <p><b>Nurhidayatullaili Muhd Julkapli</b> Nanotechnology &amp; Catalysis Research Centre (NANOCAT), Level 3, Bock A, IPS Building, University of Malaya, 50603 Kuala Lumpur, Malaysia</p> <p><b>Abstract</b></p> <p>In this study, two different nano cellulose have been prepared; one have been treated with acetic anhydride at 30°C for 1,2 and 3 hours the other have been treated with 1, 2 and 3 hours for 40°C. The results have been compared for thermal stability which were conducted using TGA and DSC. Crystallinity index was investigated and compared by XRD results. It's showed that the acetylation treatment by using acetic anhydride at 40°C was better in terms of thermal stability and but have lower crystallinity index when compared with the same treatment at 30°C. The results revealed that the thermal stability of nanocellulose can be achieved by acetylation treatment at higher temperature better than at lower temperature (near room temperature) and impacted on the crystallinity of NCC produced. This results can be used for further application in thermal stable materials such as electronic products and composite materials. <b>Keywords:</b> Acetylation; Nanocellulose; thermal stability; crystallinity</p>
<p><b>Khanji HARIJAN GICECG1704053</b></p>	<p><b>Modelling And Forecasting The Diffusion Of Grid Connected Solar Pv Systems In Pakistan</b></p> <p><b>Khanji HARIJAN</b> Department of Mechanical Engineering, Mehran University of Engineering and</p>

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**Abstract**

Pakistan is facing severe load shedding problem due to demand supply gap of about 5-8 GW. This power shortage problem is costing around 2.5 billion US \$ per annum to the nation's economy. Also, about 0.4 million local people are losing their jobs per year due to this demand supply gap of power. Oil, gas, hydropower and nuclear power are the main electricity generation sources. Fossil fuels, hydel and nuclear power have 64.2%, 31.1% and 4.7% shares respectively in the total power generation in Pakistan. The coal has only 0.1% share in total electricity generation in the country. Recently, six wind power projects of 308.2 MW cumulative capacity and one solar PV project of 100 MW capacity have started commercial operation and are supplying electricity to the national grid. Pakistan's energy sector heavily depends on the imported oil and gas as the indigenous production and reserves of oil and gas are limited. More than half of the Pakistan's annual foreign exchange is used for importing inexpensive fossil fuels. Fossil fuels based power plants also pollutes the environment.

Fortunately, the country receives 5-7 kWh/m<sup>2</sup>/day of solar insolation. The estimated potential of grid connected PV plants in terms of installed capacity is about 1600 GW. This vast renewable energy potential can be exploited for generation of electric power using solar PV technology. A priori knowledge of the likely diffusion of solar PV systems for grid connected electricity generation is very important for policy interventions and planning in Pakistan.

This paper presents the forecasts of installed capacity of solar PV systems for grid-connected electricity generation in Pakistan. The logistic model and analogous approach are used for forecasting the diffusion of PV systems in the country. The solar PV diffusion model is developed and its parameters are estimated for three different scenarios based on some assumptions. It is projected that about 921, 1636 and 3060 MW of grid connected solar PV systems could be added to the national grid in Pakistan up to 2030, under Standard Scenario (SS), Moderate Scenario (MS) and Optimistic Scenario (OS) respectively. These projected results of solar PV systems installation in Pakistan indicate that only 1.23, 2.2 and 4.1% of the maximum assumed potential of solar PV plants for grid power supply could be harnessed by the year 2030. The use of grid connected solar PV plants would help to overcome power shortage and reduce the overdependence on hydropower, the adverse environmental effects of fossil power plants and the dangers of nuclear power plants in Pakistan.

**Keywords:** Electricity Generation, Solar Energy, PV systems, Grid Connected



Dr. Ricky P. Laureta

Household Adaptation Strategies In Mitigating The Effects Of Natural Risks And  
Hazards In Partido

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**Abstract**

This study is focused on the household adaptation strategies in mitigating the effects of natural risks and hazards in Partido. Areas covered in the study are Nato, Sagñay,


<p>GICECG1704054</p>	<p>Camarines Sur; ,Patitinan, Sagñay, Camarines Sur;, Sta. Maria, Presentacion, Camarines Sur; ,and Maangas, Presentacion, Camarines Sur r ,which are considered geologically hazardous and vulnerable areas.Key Informant Interview ( KII), Focused Group Discussion (FGD) and Participatory Rural Appraisal (PRA) were used as method of data gathering. The researchers wasere able to identify the household adaptation strategies in mitigating the effects of natural risks and hazards. Likewise, this study revealed the Local Government Unit (LGU)planned intervention to address such hazards. Further, this study looked into the comparison of the adaptation strategies of men and women across sites along with the identified risks and hazards. Findings revealed that residents in the sites most commonly secure their houses and prepare for evacuation as adaptive strategies. Local officials and the Barangay Disaster Risk Reduction Management Council (BDRRMC) also do the mitigation, preparedness, response and recovery especially when typhoons devastate the area. Findings revealed that typhoon is the most hazardous risk encountered by residents, hence, along with it comes other hazards like landslide, flooding, drought, La Nina and even storm surge. Keywords: Climate Change, Adaptation Strategies, Mitigation,Risks and Hazards, PRA (Participatory Rural Appraisal), Partido</p>
<p> F. Chigondo GICECG1704055</p>	<p><b>Biosorption Of Chromium (Vi) Ions Using Polyaniline Coated Maize Tassels</b></p> <p><b>F. Chigondo</b> Department of Chemical Technology, Midlands State University, Zimbabwe</p> <p><b>G. Chitabati</b> Department of Chemical Technology, Midlands State University, Zimbabwe</p> <p><b>Abstract</b></p> <p>Hexavalent chromium is toxic and is widely used in many industries hence efficient and economical methods must be explored to remove the chromium (VI) from the environment. The removal of Cr (VI) from aqueous solutions onto polyaniline coated maize tassel was studied in batch mode at varying initial metal concentrations, adsorbent doses, pH and contact times. The residual Cr (VI) concentrations before and after adsorption were analyzed by Ultraviolet–visible spectroscopy. FTIR analysis of the polyaniline coated maize tassel showed the presence of C=C, C=N, C-H, C-N and N-H groups. Adsorption conditions were deduced to be pH of 2, adsorbent dosage 1g/L, Cr(VI) initial concentration of 40mg/L contact time of 150 minutes and agitation speed of 140rpm. Data obtained fitted best to the Langmuir isotherm (R2 = 0.972) compared to the Freundlich isotherm (R2 0.671). The maximum adsorption capacity was found to be 125mg/L. Correlation coefficients for pseudo first order and pseudo second order were 0.952 and 0.971 respectively. The adsorption process followed the pseudo-second order kinetic model. The studied polyaniline coated maize tassel can therefore be used as a promising adsorbent for the removal of Cr (VI) ion from aqueous solution. Keywords: polyaniline coated maize tassels, adsorption, hexavalent chromium.</p>
<p>Tarar M.A. GICECG1704055</p>	<p><b>Two In One Sustainable Development</b></p> <p><b>Tarar M.A.</b> Department of Mechanical, Materials and Manufacturing Engineering, University of Nottingham Malaysia campus, Selangor, Malaysia</p>

	<p style="text-align: center;"><b>Chin C.M.M</b> Department of Mechanical, Materials and Manufacturing Engineering, University of Nottingham Malaysia campus, Selangor, Malaysia</p> <p style="text-align: center;"><b>K.Y Tshai</b> Department of Mechanical, Materials and Manufacturing Engineering, University of Nottingham Malaysia campus, Selangor, Malaysia</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The Worldwide global environmental and climatic changes triggered pressure on economic and environmental sustainability. The countries are seeking ways of alternative energy resources to sustain in addition to maintain environment “Green”. Many countries find various alternative solutions to face upcoming predicted environmental and resources threats. From secondary resources, this research found the one solution to both of threats from scarce energy resources and environmental changes. This one solution is combining green roof technology with solar energy generation for sustainable development, it is known as “BioSolar” roofs. In this way maximum utilization of heat can be availed to generate electric energy and mean while also roof plays a role of radiation barrier.</p> <p>This extension of existing roof with installed solar panels work on principles of smart growth and improves urban environment where clean air and space also limited. It is found in many countries like Europe, Switzerland, Austria, Germany, Singapore etc which had successful green roof and solar energy generation combined projects. Further research and awareness is required to promote such green infrastructure all around the world for combating global warming issues.</p> <p><b>Keywords:</b> Green roof technology, solar energy generation; Bio solar roof, sustainability.</p>
<p><b>Elgendy Kh.</b> <b>GICECG1704057</b></p>	<p style="text-align: center;"><b>Decreasing the level of some heavy metals in different water samples using a natural Okra latex</b></p> <p style="text-align: center;"><b>Elgendy Kh.</b> Chemistry Department, Faculty of Science, Zagazig University, Zagazig, Egypt</p> <p style="text-align: center;"><b>Abd Elaleem D.</b> Chemistry Department, Faculty of Science, Zagazig University, Zagazig, Egypt</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Latex from Okra plant (<i>Abelmoschus esculentus</i>) was selected due to it’s low cost, safe substance and it has been found that it has a great effect on decreasing the level of various heavy metals and metalloids such as ( Pb, Zn, Ni, Cr, Cd, Hg, Fe ) in both ground and surface water.</p> <p>The role of the latex in decreasing the level of heavy metals due to the latex may have the affinity or adsorption capacity for heavy metal ions to form metal complexes or chelate due to presence of functional groups including ( Carbonyl, Hydroxyl, Amino and amide .....etc. ). Latex from Okra plant has the potential to be used as an effective, non-toxic, economical and an efficient biosorbent for removal of heavy metals from water samples.</p>



	<p>In this study, a simple , sensitive and accurate samples were prepared, followed by determination of their concentration by atomic absorption spectrometry and the adsorption capacity was observed to be in the following order: Hg &gt; Pb &gt; Zn &gt; Cd &gt; Cr &gt; Ni &gt; Fe .</p> <p>Various Physico-chemical parameters such as pH of the sample solution, initial concentration of the metal ions, amount of latex and temperature were evaluated, also the effect of time and the effect of diverse ions were studied .The metals ions were removed by a percentage ranged between 11.49% to 90.65% .</p> <p>Keywords: Okra plant, Heavy Metals, pH, Initial concentration, Temperature, Atomic Absorption Spectrophotometer.</p>
<p><b>Dr. Khaled Elgendy</b> GICECG1704058</p>	<p>Decreasing the level of some heavy metals in different water samples using a natural Okra latex</p> <p><b>Elgendy Kh.</b> Chemistry Department, Faculty of Science, Zagazig University, Zagazig, Egypt</p> <p><b>Abd Elaleem D.</b> Chemistry Department, Faculty of Science, Zagazig University, Zagazig, Egypt</p> <p><b>Abstract</b></p> <p>Latex from Okra plant (<i>Abelmoschus esculentus</i>) was selected due to its low cost, safe substance and it has been found that it has a great effect on decreasing the level of various heavy metals and metalloids such as ( Pb, Zn, Ni, Cr, Cd, Hg, Fe ) in both ground and surface water.</p> <p>The role of the latex in decreasing the level of heavy metals due to the latex may have the affinity or adsorption capacity for heavy metal ions to form metal complexes or chelate due to presence of functional groups including ( Carbonyl, Hydroxyl, Amino and amide .....etc. ). Latex from Okra plant has the potential to be used as an effective, non-toxic, economical and an efficient biosorbent for removal of heavy metals from water samples.</p> <p>In this study, a simple , sensitive and accurate samples were prepared, followed by determination of their concentration by atomic absorption spectrometry and the adsorption capacity was observed to be in the following order: Hg &gt; Pb &gt; Zn &gt; Cd &gt; Cr &gt; Ni &gt; Fe .</p> <p>Various Physico-chemical parameters such as pH of the sample solution, initial concentration of the metal ions, amount of latex and temperature were evaluated, also the effect of time and the effect of diverse ions were studied .The metals ions were removed by a percentage ranged between 11.49% to 90.65% .</p> <p>Keywords: Okra plant, Heavy Metals, pH, Initial concentration, Temperature, Atomic Absorption Spectrophotometer.</p>
 <p><b>Muhammad Mutasim Billah Tufail</b> GICECG1704059</p>	<p>Novel approach of quantifying energy security in terms of economic, environmental and supply risk factors</p> <p><b>Muhammad Mutasim Billah Tufail</b> School of technology management and logistics, University Utara Malaysia</p> <p><b>Jafini Azhan Bin Ibrahim</b> School of technology management and logistics, University Utara Malaysia</p> <p><b>Mustakim bin Melan</b></p>

	<p style="text-align: center;">School of technology management and logistics, University Utara Malaysia</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The rising global demand of energy and political instability has raised the issue of energy security more than ever before. Depleting reservoirs and environmental degradation encourage policy makers to review intended action plans for sustainable energy generation. Fluctuating oil prices and unforeseen political events has emerges a need of secure supplies policies. This study will incorporate three key integrated energy dimensions in terms of cost to evaluate the total exposure. Affordability, acceptability and availability of adequate supply are the factors to evaluate for sustainable economic growth, potential environmental harm and social stability. Energy experts and policy makers around the globe are looking for the effective tool to measure the impact of supply disruption on energy generation process. High level of security incurred extra cost; However opportunity loss due to supply disruption has never been evaluated in terms of monetary unit. This study will focus on the evaluation of potential loss cause due to unavailability of supplies for power generation system. Holistic approach will be applied to measure the combine impact of fuels specifically used in power generation process. Besides the traditional approach of unit power generation cost this paper encompasses other cost parameters which indirectly affects the cost of generation in the form of carbon tax penalty and the excessive cost of secure and reliable power generation resources. <b>Keywords: Energy Security, LCOE, Carbon Tax, Energy Supply Risk</b></p>
<p>Nur Fatin Fatehah Samad GICECG1704060</p>	<p style="text-align: center;"><b>Removal of Brilliant Green Dye from Aqueous Solution by using Banana leave as Adsorbent</b></p> <p style="text-align: center;">Nur Fatin Fatehah binti Samad Faculty Of Chemical Engineering, University Teknologi Mara, Shah Alam, Malaysia</p> <p style="text-align: center;">Sherif Abdul Bari Ali (Dr)</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Brilliant green dye is cationic dyes that are soluble in the water and commonly used for paper printing, veterinary medicine, textiles, cosmetic and food coloring. It is toxicity that affect to human health like irritation which causing vomiting, nausea and diarrhea. It also causes water pollution that directly affect the aquatic life by prevent light penetrating into the water. This study is focus to enhance the efficiency of removal brilliant green (BG) dye by using banana leaf as adsorbent and to determine the variables that affect the adsorption capacity. The banana leaves have been dried and grinded until become a powder. The parameters of the experiment are dye effect on the pH, effect of the initial dye concentration, effect of the contact time and effect of adsorbent dosage. The sample mixture of BG and banana leave were collected and analyzed by using UV-Vis spectrophotometer and FTIR instrument. The obtained data were analyzed to determine the percentage removal, adsorption capacity and adsorption isotherm. As a result, banana leave powder was hydroxyl group which functional group of alcohol. The optimum pH of solution was at pH 7 with the percentage removal of 98.98%. The solution reached equilibrium state in 180 minutes with adsorption capacity range of 9.7455 mg/g to 49.4976 mg/g. The optimum concentration of the percentage removal is at 98.90% to 98.99% at initial concentration of 50 to 250 mg/L. The percentage removal of the solution with different adsorbent dosage in the range of 0.5 to 2.5 g is 96.97% to 98.60%. The</p>

	<p>correlation coefficient of Langmuir and Freundlich isotherm of BG on banana leave was 0.715 and 0.995 respectively. Therefore, banana leave has a potential to act as adsorbent in dye removal process and can be considered as low cost adsorbent material including banana leave waste. Keyword: Adsorbent, Adsorption, Banana leave, Brilliant green dye, Isotherm, Percentage removal</p>
<p>Nur Amira Dewi Zulkifli Selvakummar GICECG1704061</p>	<p><b>Kinetics Study Of TiO<sub>2</sub>-Catalyzed And Zeolite Zsm5-Catalyzed Palm Kernel Oil In-Situ Epoxidation</b></p> <p>Nur Amira Dewi Zulkifli Selvakummar Faculty of Chemical Engineering, Universiti Teknologi Mara</p> <p><b>Abstract</b></p> <p>In-situ epoxidation as known as as an advanced chemical modification of plant oils to produce intermediate product namely epoxide. Epoxide act as raw material for other chemical processes. Several conditions had been conducted in order to obtain an optimum condition of an efficient catalyst between TiO<sub>2</sub> and Zeolite ZSM-5 in catalyzing the in situ epoxidation under reaction temperatures of 45°C, 55°C and 65°C. In-situ epoxidation of palm kernel oil was carried out by adding palm kernel oil together with formic acid as oxygen carrier, hydrogen peroxide as oxygen donor and solid catalyst either TiO<sub>2</sub> or Zeolite ZSM-5 catalyst in one-pot synthesis. The reaction is carried out until highest relative conversion oxirane percentage (RCO%) was obtained. Zeolite ZSM-5 is proven to be the efficient catalyst with highest conversion of unsaturation bond to epoxide which is 46% and having a stability duration under two minutes within twenty minutes of reaction time. Kinetic of this in-situ epoxidation catalyzed by Zeolite ZSM-5 is being modelled by using Langmuir-Hinshelwood approach whereby the reaction is assume to be free from mass transfer limitation by conducting at high agitation speed The optimum speed that indicated no obvious changes in RCO% was 850rpm. Surface reaction is said to be the controlling step in the formation of performic acid in this in-situ epoxidation of palm kernel oil. Based on the, kinetic estimation and assumptions, the activation energy for in-situ epoxidation of palm kernel oil catalyzed by Zeolite ZSM-5 is achieve. Keywords— palm kernel oil, in-situ epoxidation, TiO<sub>2</sub>-catalyzed, zeolite (ZSM-5)-catalyzed, heterogeneous reaction, kinetic, Langmuir-Hinshelwood.</p>
 <p>Nurul Atikah Mohd Iskak GICECG1704052</p>	<p><b>Production of Highly Crystalline Nanocrystalline Cellulose Using Ultrasonication Coupled with Ionic Liquids Hydrolysis</b></p> <p>Nurul Atikah Mohd Iskak Nanotechnology and Catalysis Research Center (NANOCAT), Level 3, Block A, IPS Building, Universiti Malaya, 50603 Kuala Lumpur, Malaysia</p> <p>Nurhidayatullaili Muhd Julkapli Nanotechnology and Catalysis Research Center (NANOCAT), Level 3, Block A, IPS Building, Universiti Malaya, 50603 Kuala Lumpur, Malaysia</p> <p>Sharifah Bee Abd Hamid Nanotechnology and Catalysis Research Center (NANOCAT), Level 3, Block A, IPS Building, Universiti Malaya, 50603 Kuala Lumpur, Malaysia</p> <p><b>Abstract</b></p>

	<p>Catalytic ionic liquids hydrolysis in producing nanocrystalline cellulose (NCC) has been implanted as an alternative to conventional solvents. Despite the advantages of ionic liquids as a “green” solvent, there are still limited studies on the production of NCC at different variables. In this study, the effect of cellulose to ionic liquids’ ratio was studied. It was found that NCC with 76% crystallinity index was produced at 4% (w/w) cellulose to ionic liquids’ ratio. Meanwhile, 10% (w/w) of cellulose to ionic liquids’ ratio generated highest yield of NCC, which was 86%. NCC with 13 nm diameter was also produced in this study. In conclusion, the properties of NCC were affected by the cellulose to ionic liquids’ ratio.</p> <p><b>Keywords:</b> crystallinity, catalytic, diameter, length, alternative</p>
<p>NseAbasi NsikakAbasi Etim GICICRST170451</p>	<p><b>Meat Quality Attributes Of West African Dwarf Rams Administered With Aqueous African Marigold Plant (<i>Aspilia Africana</i>) Extract</b></p> <p>Nse Abasi Nsikak Abasi Etim Department of Animal Science, Akwa Ibom State University, Obio Akpa Campus, Akwa Ibom State, Nigeria</p> <p><b>ABSTRACT</b></p> <p>This study was conducted to determine the sensory and chemical attributes of West African Dwarf rams administered with aqueous <i>Aspilia africana</i> extract. Twenty four (24) rams aged 6-9 months with average weight of 4.65kg were used for the study. The experiment was in a Completely Randomized Design (CRD) of four (4) treatment groups with six (6) rams per treatment. Each treatment was replicated 3 times with 2 rams per replicate. Rams in treatment 1 (control) received 10ml of distilled water, T2 were administered with aqueous <i>Aspilia africana</i> extract at 1000mg/kg body weight, T3 received 2000mg/kg BW and T4 received 3000mg/kg BW. Rams in all the treatment groups were fed 2kg of forages and 500g of the same concentrate diet daily. The extract was administered for 64 days after which four (4) rams per treatment group were slaughtered for meat quality evaluation. Results for proximate composition (%) of meat from the loin revealed that the values obtained increased with increase in the dosages of the extract. Highest significant mean values were recorded for T4; 29.91, 37.55, 10.34 and 4.56 while the lowest mean values of 25.58, 32.58, 9.06 and 4.37 were recorded for T1 (control group) for dry matter, crude protein, fat and ash, respectively. Panelist rated the meat to be similar in colour, while values for flavor, texture, juiciness, tenderness and overall acceptability significantly increased with increase in the dosages of the extract and lowest values were obtained for T1. Meat pH varied significantly; T4 had the highest mean value (5.79) while T1 had the lowest (5.41). The high and significant increase in sensory and chemical attributes of meat from rams administered with aqueous <i>Aspilia africana</i> extract is an indication that <i>Aspilia africana</i> could improve meat qualities and its overall acceptability.</p> <p><b>Keywords:</b> Forage, mutton, protein, sensory evaluation.</p>
<p>Munawirah Mohamad GICICRST170452</p>	<p><b>Experimental Analysis Of Lift Enhancement On Naca 23015 Airfoil Shapes By Utilizing Compress Flow Control Method</b></p> <p>Munawirah Mohamad Department of Aerospace, Malaysian Institute of Aviation Technology, Universiti Kuala Lumpur, Malaysia</p> <p><b>ABSTRACT</b></p>

Aerodynamic design on airfoil was studied to obtain the enhancement of the lift for airfoil. The project includes investigation of compress flow control method that to be applied to the NACA 23015. The experimental analysis will be conducted on baseline airfoil and airfoil with compress flow control of the same dimension. Flow control method will be supply from compressor through supply hose that attaches to the airfoil to inject the compress airflow at upper surface of airfoil (injection slot). The injected air flow along the upper surface will mixes with free stream flow resulting improve in performance; increase in lift and decrease in drag. The testing will conducted at Wind Tunnel aerodynamic laboratory. Five different pressures with 5, 10, 15, 20 and 25 psi and air speed 3, 6,9,12 and 15 m/s were studied for this project to determine lift enhancement for NACA 23015 airfoil shape. The various angles of attack from 0° to 24° was setup to investigate the maximum performance of airfoil can withstand of highest of AOA before stall. As a result, the maximum lift enhances 29.71% on NACA 23015 with compress flow control method at pressure 25psi with speed of 15m/s. The stall margin increase when increasing in pressure applied to the airfoil; baseline aifoil stall at 14°, airfoil with 5psi stall at 20° and airfoil with 25psi stall at 22°. NACA 23015 with compress flow control method reducing in weight about 4.27% and also reduced the fuel consumption 3.2% compared to baseline airfoil.



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**Speed Control of a Switched Reluctance Motor Using PID Controller for PV based Water Pumping Applications**

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**Abstract**

This manuscript presents a photovoltaic (PV) served water pumping scheme engaging a Switched Reluctance Motor (SRM) system drive. The SRM drive generates the electronic based commutation at essential frequency proposes a condensed loss during swapping in a mid-point power converter and expressively improves the efficacy of whole projected scheme. The SRM operates in a speed which is regulated by changing the DC-bus source voltage which belongs to the mid-point power converter section. Pear current (I) and voltage (V) stress on power apparatus containing switching pressure of Cuk mode power converter are similarly decreased in CCM operation. The cuk power converter (CC) enables the constant and even input side and delivery currents towards SRM drive through an infinite section aimed at maximum power point (MPP) tracking condition. The proposed scheme, exposed to actively atmospheric situations is modeled and simulated by utilizing Simulink background.

**Keywords: Cuk Converter, Control, PV, Pumping system, SRM motor**



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**Isolation And Identification Of Fungi Associated With Tigernut Milk Drink (Kunun Aya) In Dutse, Jigawa State**

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**Abstract**

The study was carried out to isolate and identify the types of fungi associated with Tigernut milk Drink "Kunun Aya". The samples of kunun aya were collected from five different areas within Dutse town. These include; Yalwawa, Fagoji, Gida dubu, Yan tifa, and Takur site. The experiment was carried out on fresh and spoilt samples, where the fresh samples were used for the first experiment, and the same samples were kept for three days to spoil and used for the second experiment. The serial dilution method was adopted for the experiments. The species of fungi isolated and identified were; *Aspergillus flavus*, *Aspergillus niger*, *Penicillium* species and *Saccharomyces cerevisiae*. The results showed that, the population of fungi were higher in spoilt samples than in the fresh ones.

**Keywords;** fungi, tigernut, Kunun Aya, Dutse



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**Working in the Crime Scene: Experiences of Forensic Investigators**

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**Abstract**

As the Philippines modernize into the standards of global industrialization, certain aspects of the Philippines' lifestyle do not cope with the increasing quality expected of progressing countries. With the rapid industrialization that is plaguing the world, a large segment of the reason for the slow evolution of the Philippines is due to the country's standards and quality of service in the subject of law and order, specifically in the field of forensics. Certain misconceptions arose from the ignorance of Filipinos in the field of forensic science. This phenomenological study aims to shed a light into the life of a forensic investigator. The three (3) key participants were taken from the National Bureau of Investigation (NBI). The key participants were chosen as all of whom had firsthand experiences in forensic investigation. The data collected from an In-depth interview were transcribed from audio data to textual data to create codes and themes on the lived experiences of forensic investigators. The results of the research were used in creating concrete codes and themes for the lived experiences of forensic investigators in the Philippines. This study will help eradicate

	<p>misconceptions about forensic investigators and increase the awareness of Filipinos in the field of forensic science. Keywords: Forensic Investigators, Forensic Science, Live Experiences, Phenomenology</p>
<p>Madeha Arif GICICRST1704057</p>	<p><b>Impact of Communication on Change Management: Building a Framework for Change Management in Global Software Development</b></p> <p><b>Madeha Arif</b> College of E&amp; ME (CEME), National University of Science and Technology, NUST, Islamabad, Pakistan</p> <p><b>Farwa Kazmi</b> College of E&amp; ME (CEME), National University of Science and Technology, NUST, Islamabad, Pakistan</p> <p><b>Ayesha Saeed</b> College of E&amp; ME (CEME), National University of Science and Technology, NUST, Islamabad, Pakistan</p> <p><b>Wasi Haider Butt</b> College of E&amp; ME (CEME), National University of Science and Technology, NUST, Islamabad, Pakistan</p> <p><b>Abstract</b> Software industry is moving towards globalization and adopting Global Software Development for enhancing their business and process benefits. Successful requirements management leads to a successful project completion. Requirement change is unavoidable activity and we have to deal with it during our project development. In distributed teams communicating requirement changes are even more tedious and challenging. This paper presents a framework that provides the efficient approach for dealing with communication of requirements change management in distributed teams. Framework used formal languages to remove the ambiguity in the requirement change. The proposed model is compared with the traditional model and the comparison results shows that the requirement change understanding of developers is improved through the proposed framework. Keywords— Global Software Development (GSD), Requirement Change Management (RCM), Change Control Board (CCB), Conventional Form (CF), Standard Form (SF), Unified Modeling Language (UML).</p>
 <p><b>Dr. V. VARIJA</b> GICICRST1704060</p>	<p><b>Information And Communication Technology Through Tourism Development</b></p> <p><b>Dr. V. VARIJA, Asst. Professor</b> Dept. of History &amp; Archaeology, Yogi Vemana University, Kadapa, Andhra Pradesh, India</p> <p><b>Dr. V. RAMABRAHMAM Asst. Prof</b> Dept. of History &amp; Archaeology, Yogi Vemana University, Kadapa, Andhra Pradesh, India</p> <p><b>Miss. P. USHA GAYATRI, Asst. Prof</b> Dept. of CSE, MVSR ENG College, Hyderabad, Telangana, India</p>

	<p style="text-align: center;"><b>ABSTRACT</b></p> <p>Tourism is travel for recreational, leisure or business purposes. Information and Communication Technology is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications.</p> <p>Information Technologies prefer prevail in all functions of strategic and optional management. As information is the lifeblood of tourism, Its provide both opportunities and challenges for the industry. The Internet revolutionizes flexibility in both consumer choice and service delivery processes.</p> <p>The overall goal of this research is to understand the impact of the use of transmedia storytelling techniques in the tourism sector worldwide, particularly in Porto's tourism industry and at the same time to develop a technological product that can be adapted to tourism in other parts of the world.). As</p> <p><b>Keywords:</b> Tourism, Information and Communication Technology, Consumer, Strategies</p>
<p>Wenjing Wang GICICRST1704062</p>	<p>Novel amine impregnated graphene/SBA-15 composite with good stability for CO<sub>2</sub> capture</p> <p style="text-align: center;">Wenjing Wang The University of Queensland, Australia</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Carbon dioxide (CO<sub>2</sub>) is the major greenhouse gas that makes the largest contribution to global warming. Worldwide research activities have focused on developing different types of physical and chemical adsorbents for CO<sub>2</sub> capture. Amine functionalized mesoporous silica combining the merits of physisorption and chemisorption is one of the most promising materials for CO<sub>2</sub> capture. However, due to the low thermal conductivity of mesoporous silica coupled with high adsorption heat of chemisorption, the thermal stability and cycle stability are severe issues that should be considered for practical CO<sub>2</sub> capture. The introduction of graphene with superior properties, large theoretical specific surface area of 2630 m<sup>2</sup> g<sup>-1</sup> and excellent thermal conductivities, could be an effective way to solve the problem of stability. SBA-15 is a mesoporous silica, which has well-ordered hexagonal mesopore structure. However, to the best of our knowledge, the feasibility of graphene introduction to SBA-15 for CO<sub>2</sub> capture need further explore. In this work, novel nanocomposites of graphene(G) /SBA-15/hyperbranched polymer(HBP) were synthesized and tested as CO<sub>2</sub> adsorbent. A capacity of up to 1.50 mmol g<sup>-1</sup> was obtained by G/SBA-15/HBP (50), indicating the presence of graphene within the system increased the capacity of conventional SBA-15/HBP to adsorb CO<sub>2</sub> by 51.51%. SEM images and N<sub>2</sub> sorption analyse indicate the introduction of graphene reduced the agglomeration and HBP could disperse more evenly into G/SBA-15. What's more, G/SBA-15/HBP (50) was relatively stable for 10 thermal cycles. The presence of graphene in the nanocomposite efficiently stabilizes HBP, improving cycle stability and adsorbent longevity.</p> <p><b>Keywords:</b> CO<sub>2</sub> capture, mesoporous silica, graphene, amine functionalization</p>
<p>Tarar M.A. GICICRST1704064</p>	<p style="text-align: center;">Need Lean And Green Manufacturing</p> <p style="text-align: center;">Tarar M.A. Department of Mechanical, Materials and Manufacturing Engineering, University of</p>





	<p>Nottingham Malaysia campus, Selangor, Malaysia</p> <p><b>Chin C.M.M</b> Department of Mechanical, Materials and Manufacturing Engineering, University of Nottingham Malaysia campus, Selangor, Malaysia</p> <p><b>K.Y Tshaia</b> Department of Mechanical, Materials and Manufacturing Engineering, University of Nottingham Malaysia campus, Selangor, Malaysia</p> <p><b>Abstract</b> Worldwide manufacturing industries are facing scarce resources, dynamic technology change, and environmental issues. Manufacturing industries are seeking different continuous improvement methods to encompass competition and sustain in global market. Lean and Green are two different management philosophies, one focus process improvement and other concerned about environment protection and preservation. Lean manufacturing developed by Toyota Production system when found scarce resources after World War II. Lean manufacturing focus to add value to the product, by process improvement within limited resources. It identifies value adding activities and waste in process. Green manufacturing integrated with Lean to remove waste of processes which impacts environment adversely. The literature review showed that it is possible to implement lean which Push green outcomes and improves also environmental performance. It is found that the Lean and Green in common both focus on wastes, utilising limited resources efficiently, and achieving customer satisfaction. Their integration reflects optimistic outcomes, so integrating both philosophies initiate innovative research direction and practical implications of integrated approach. <b>Keywords:</b> Lean manufacturing, Green manufacturing, sustainability.</p>
<p><b>Abdul Ghaffar</b> <b>GICICRST1704065</b></p>	<p><b>Statistical Analysis of Extended Thurstone Model under Bayesian Principle</b></p> <p><b>Abdul Ghaffar</b> Higher Education Department Punjab, Lahore, Pakistan Department of Statistics, Government Postgraduate College, Sahiwal Punjab, Pakistan, Sahiwal, Pakistan</p> <p><b>Abstract</b> A paired comparison analysis is the simplest way to make comparative judgments between objects where objects may be goods, services or skills. For a set of problems, this technique helps to choose the most important problem to solve first and/or provides the solution that will be the most effective. Apart from psychology and sports, the paired comparison methods have vast application in the field of medicine, project management, voting system and performance appraisal (also known as employee performance) etc. In the present study, a contribution to the paired comparison modeling is made by introducing a tie effect in the Thurstone-Mosteller model for paired comparison. The preferences are recorded by a balanced paired comparison experiment. Each of the preference probabilities contain two objects <math>i</math> and <math>j</math>, which have worth parameters. The prior information for worth parameter is assumed and Bayesian analysis is carried out. Bayesian method updates the prior information with the results of</p>


	<p>experiment and provides updated information about objects. The extended model is illustrated using a real data set taken from Davidson (1970). The data set consists of different brands of chocolates. The data set is used partially for Bayesian analysis. First, the three brands of chocolate are used and they are ranked as brand 3 → brand 2 → brand 1. Secondly, the four brands of chocolate are considered and ranked as: brand 2 → brand 3 → brand 4 → brands 1. Noninformative (uniform and Jeffreys) priors are compared with each other's. Also the proposed model is compared with the Glenn-David model.</p>
<p>Syed Ghayas GICICRST1704066</p>	<p><b>Evaluation Of Mobile Interfaces Using Usability Inspection Method</b></p> <p>Syed Ghayas Department of Management Information System, A Sharqiyah University, Oman</p> <p><b>Abstract</b></p> <p>Mobile applications are gaining much reputation because of the significance of mobile phones; such are value added services, entertainment applications and cameras. However, these mobile phones user interfaces have limitations in terms of usability, like poor design and complex design of interface. Mobile devices applications such as those for smart phones offer a lot of benefits to the mobile phones users. Various age group users have been reported to have difficulty in learning to use the application interfaces of these devices. Evaluating the usability of mobile phone applications designed is a mandatory step in order to address the limitations and issues of mobile applications. Usability evaluation of mobile phone applications should be fitted to the variety of mobile applications used by people. Each of application each have their specific features. Current paper presenting a mobile phone applications interface usability evaluation using usability inspection method. The criteria of usability evaluation is described and also practiced in order to evaluate the usability of mobile application.</p> <p><b>Keywords- Mobile phones, User Interfaces, Mobile Human Computer interactions</b></p>
<p>Mehdi Ghasemi GICICRST1704067</p>	<p><b>Investigating the impact of information communication technology development in local community lifestyle changes</b></p> <p>Mehdi Ghasemi Ph.D. Student of Rural Development, Department of Extension, Communication and Rural Development, University of Zanjan, Iran</p> <p>Mohammad Badsar Assistant Professor, Department of Extension, Communication and Rural Development, University of Zanjan, Iran</p> <p><b>Abstract</b></p> <p>The useful effect of ICT on the quality of life and rural economy is now extensively renowned. ICT in union with other forms of communications have the potential to reach the rural communities as well thereby empowering them to participate in the social and economic development of the country. This study has been conducted with the aim of investigating the role of information communication technology development in lifestyle changes of local community. The population of this study was including all villagers of Zanjan Township (486,495 persons), which based on Cochran's formula 140 respondents was determined as sample size. Face and content validity of the questionnaire had been confirmed by panel of experts and key</p>

	<p>informant before the pre-test stage. The reliability of instrument was assessed by conducting a pilot study among 30 samples out of the original sample. The reliability of instrument for the all sections based on Cronbach's alpha coefficients value (more than .70) shows acceptable level of internal consistency. Data analysis was performed by using SPSS20 and AMOS20 software. The descriptive result showed that 96.4% of respondent had access to TV and 91.4% to mobile phone. The structural model result showed that level of ICT influence (<math>\beta = .436</math>) and level of ICTs tools usage by respondent (<math>\beta = .206</math>) had a positive and significant effects on their life style. Key Words: ICT, Life Style, Local Communities, Rural Development</p>
<p>Jaffar btoosh GICICRST1704068</p>	<p>Variation Orders Causes in Construction Buildings Projects in Jordan</p> <p>Jaffar btoosh Civil Engineering, Zarqa University, Jordan</p> <p>Abstract</p> <p>Generally, by review causes and issues related to V.O in construction projects, the aim of this paper is to investigate the real cause of variation orders in its root stage, This paper investigates the most significant causes contribute to the variation orders in the construction of building projects in Jordan ,data was collected from questionnaire survey which is based on the literature reviews. The data were analyzed by using mean score method and rank to formulate the findings. The results from questionnaire survey revealed three most significant causes variation orders which are:</p> <ol style="list-style-type: none"> <li>1) Errors and omission in design</li> <li>2) delay in completion and increase project cost</li> <li>3) Change in specification by owners</li> </ol> <p>The finding concluded that employer us the main originator of the variation orders and suggested that owner should have adequate planning and recourses before initiating a project in order to avoid variation order during the construction stage.</p>
<p>Pooja Gupta GICICRST1704070</p>	<p>Implementation of Digital Controller using Series based expansion for Magnetic Levitation System</p> <p>Pooja Gupta School Of Electronics Engineering, KIIT University, Bhubaneswar, India</p> <p>Vijay Kumar Verma School of Electronics Engineering, KIIT University, Patia, Bhubaneswar</p> <p>Abstract</p> <p>This paper emphasizes on stabilizing the non-linear and unstable Magnetic Levitation system with a digital controller that employs the series based expansion method of a pulse transfer function. The paper aims at providing improved transient performance to the magnetic levitation “Maglev” systems. The non-linear Maglev system is initially linearized. The known transfer function for the Maglev system is emphasized and then we move towards finding the desired transfer function for the digital controller by using the concept of series expansion. The design algorithm of the controller takes into account the desired close loop response and the unit pulse response of the Maglev model. This paper demonstrates the effectiveness of the designed controller using a Maglev ball system where the step tracking capabilities of the ball is monitored and the results are compared with the same system when it is</p>

	<p>deprived of a controller. Keywords: Digital controller, Plant, Maglev, Series expansion.</p>
<p>Khairudin Zulkhairi GICICRST1704071</p>	<p>Development of High Speed Mixer</p> <p>Khairudin Zulkhairi Mechanical Engineering Department, Politeknik Sultan Salahuddin Abdul Aziz Shah, Selangor, Malaysia</p> <p>Ibrahim Norhayati M.Sahak Z. Rohaiza</p> <p>Abstract This study focuses on designing and developing a paint mixer that is suitable for small and medium industries. The paint mixer is designed to mix and blend the paint ingredient in an efficient way to improve the production rate as well as quality. The paint mixer equipped with high shear blade powered by electric motor is able to mix the paint ingredient up to 200 liter for 4 hours. Therefore, the productivity increases from 30 liter a day up to 400 liter in 8 hours. The paint ingredient is fully dissolved in shorter time as compared to manually mixing process. The mixing process also reduces energy consumption by mixing a large quantity of paint ingredient.</p>
<p>Alka Mishra GICICRST1704075</p>	<p>Ethnobotanical study on medicinal plants used by the local communities in Achanakmar Amarkantak Biosphere Reserve, Central India</p> <p>Alka Mishra Department of Rural Technology, Guru Ghasidas Central University, Bilaspur, CG India-495 001</p> <p>Nisha Parihar Department of Rural Technology, Guru Ghasidas Central University, Bilaspur, CG India-495 001</p> <p>S. L. Swamy Department of Forestry, Indira Gandhi Agricultural University, Raipur, CG India- 492006</p> <p>Abstract An ethno-botanical survey was conducted in Achanakmar Amarkantak Biosphere Reserve (AABR) of central India to document the indigenous knowledge and utilization pattern of medicinal plants for primary health care of local communities mainly comprised of Baigas, Gonds, Oraons and Pradhans. Data collection was done by participatory rural appraisal (PRA) and focus group discussion methods. The different age groups, gender and communities were considered in collecting the data and gathering information on traditional knowledge. The ethno-botanical survey revealed that A sum total of 86 medicinal flora in different life forms represented by 45 families are recorded in Sal forests. Out of which 31 species occurred in tree layer represented by 18 families. Similarly, it was observed that 24 species belonging to 19 families in shrub layer, 15 species representing 11 families in herbaceous layer and 16 species belonging to 10 families as climbers in Sal forest. The rank order of species by first six families is: Leguminosae □ Acanthaceae □ Combretaceae □ Anacardiaceae □ Apocynaceae □ Rubiaceae. There are traditional healers Baiga Vaidis practicing in</p>

	<p>study area for curing diseases and various ailments. The traditional healers are well acquainted with indigenous medicines and using almost 46 species belonging to 28 families for preparing crude drugs and administering the drugs to patients suffering from diseases. The plant preparations and crude drugs were used for curing a variety of diseases like diarrhea, wounds, fever, cough, cold, jaundice, snake and scorpion bite, infections, malaria, filarial, digestive problems etc. The study also documented a list of ten rare, endangered and threatened (RET) medicinal flora, which require special attention for their protection and conservation. The study further suggests that there is potential scope for exploiting lesser known medicinal flora by detailed pharmacological investigations to design and synthesize novel drugs.</p> <p><b>Keywords:</b> Baiga, Conservation, Endangered species, Indigenous Knowledge, Primary health care</p>
<p>Liza Setyaning Pertiwi GICICRST1704076</p>	<p><b>Moment of dependent risk of Aggregate Life Insurance Claims</b></p> <p>Liza Setyaning Pertiwi Study programme of mathematics, Bandung Institute of Technology, Bandung, Indonesia</p> <p>Fachrurrozi</p> <p><b>ABSTRACT</b></p> <p>This paper demonstrates the calculation of the moments of the distribution of aggregate life insurance claims by formulating the moment functions generally, assuming that each record represents a dependent Binomial generally with its own known probability of a claim, <math>q</math>. discrete distributions matching the first three or four moments are identified.</p> <p><b>Keywords:</b> Dependent Risk, Binomial Distribution, Insurance Claims.</p>
 <p>Premenose Jeevaretnambabu Enose GICICRST1704073</p>	<p><b>Advancements in the HVAC industry – Smart Air Conditioners &amp; the Internet of Things</b></p> <p>Premenose Jeevaretnambabu Enose Director of Mechanical Engineering, Lennox India Technology Centre, Chennai, India</p> <p><b>Abstract</b></p> <p>With decades of traditional air-conditioners in the market, the industry is getting advancements so quickly in the past few years with the introduction of smart sensors, algorithms and the Internet of things (IoT).</p> <p>Traditionally air-conditioners are operated using remotes or thermostats to control the temperature and in a best case scenario, an added humidity control. Today's thermostats not only know the temperature of the room, it also know whether we are in the room or not through sensors, it know the outside weather condition through the internet cloud connecting via the home internet and also can learn what is your pattern of usage in different weather conditions and adapt to it automatically, thanks to the Big Data and Intelligent Algorithms that work in the backend. An advanced air-conditioner can use your mobile GPS to automatically switch ON and OFF depends on the vicinity of your location from the home. The smart, technically called meta-heuristic control algorithms are the backbone of the smartness together with the internet big data makes today's air-conditioners sophisticated IoT equipment.</p>

	<p>This presentation covers the latest developments and the backend science of different algorithms and methods and its working principle over the internet cloud on smart air-conditioners. It also covers some of the future opportunities and applications of the IoT and smart equipment applications in the air-conditioning space that could be potentially a research topic for students in the university community. It also demonstrates some of the live examples of such air-conditioners and its working principles to showcase practical feasibility and commercial viability in addition to energy savings that lead to a future green planet.</p>
 <p><b>Muhammad Murtadha Ramadhan</b> GICICRST1704079</p>	<p><b>Classification Model for Hotspot Sequences as Indicator for Peatland Fires using Data Mining Approach</b></p> <p><b>Muhammad Murtadha Ramadhan</b> Computer Science Department, Faculty of Natural Science and Mathematics, Bogor Agricultural University, Indonesia</p> <p><b>Imas Sukaesih Sitanggang</b> Computer Science Department, Faculty of Natural Science and Mathematics, Bogor Agricultural University, Indonesia</p> <p><b>Larasati Puji Anzani</b> Computer Science Department, Faculty of Natural Science and Mathematics, Bogor Agricultural University, Indonesia</p> <p><b>Abstract</b></p> <p>One action which can be taken to avoid forest and land fires is to predict where forest and land fires are likely to happen. This can be done by predicting the hotspot as one of forest fires indicators. A hotspot that appears in a sequence for 2 – 5 days can be a strong indicator of forest fires. This study used data mining approach which is classification to predict hotspot appearance in peatlands in Sumatra in 2014 and 2015. The classification algorithms used are C5.0 and Random Forest which are categorized in Decision Tree model. C5.0 additionally results a rule-based model. Accuracy of the decision tree model and the rule-based model from C5.0 and Random Forest on the dataset of 2014 is 96.8%, 96.0%, and 85.6%, respectively. Accuracy of the decision tree model and the rule-based model from C5.0 and Random Forest on the dataset of 2015 is 97.1%, 96.6%, and 75.6%, respectively. The attributes that appear from the hotspot classification model are peatlands depth and peatlands type. Hotspots in sequence are most predicted to happen on peatland that have characteristics such as type of peatlands hemist, saprists or fibrists, peatland depth is shallow, medium or deep, and can happen in every type of land use that are used for plantation or other purposes.</p> <p><b>Keywords:</b> C5.0, classification, data mining, forest and land fires, hotspots, Random Forest</p>
	<p><b>Sustainable development attitude: a study on perception among private &amp; public higher learning institutions student in Malaysia</b></p> <p><b>Nadzirah Zainordin</b> Lecturer, University College of Technology Sarawak, Sibul, Sarawak, Malaysia</p> <p><b>Wahida Wahi</b> Lecturer, University College of Technology Sarawak, Sibul, Sarawak, Malaysia</p>

<p><b>Nadzirah Zainordin</b> GICICRST1704054</p>	<p style="text-align: center;"><b>Magdalen Petrus</b> Lecturer, University College of Technology Sarawak, Sibul, Sarawak, Malaysia</p> <p style="text-align: center;"><b>Chieng Tiong Koh</b> Lecturer, University College of Technology Sarawak, Sibul, Sarawak, Malaysia</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The importance of sustainable development can be seen in many universities in Malaysia in establishing the syllabus and also an awareness on the concept itself among their students. The purposes of this study is to evaluate student's perception on sustainable development concept and knowledge. The quantitative method has been choose where there are 300 numbers of questionnaire has been distributed and test to the respondents which actually there were comes from selected private and also public higher institutions. The overall findings reveal that even they are come from two different types of intuition but they are actually having the same perception towards sustainable development concept practising in their intuition. The weaknesses found in this study is a challenge to their intuition to provide clear picture on sustainable development concept and how they can react to achieve and well-implemented this concept in their institutions.</p> <p><b>Keywords:</b> Sustainable development, university's student, higher intuition.</p>
 <p><b>Sergey Borisenok</b> GICICRST1704061</p>	<p style="text-align: center;"><b>Tracking of Arbitrary Regimes for Spiking and Bursting in the Hodgkin-Huxley Neuron</b></p> <p style="text-align: center;"><b>Sergey Borisenok</b> Department of Electrical and Electronics Engineering, School of Engineering, Abdullah Gül University, Kocasinan - 38080 Kayseri, Turkey</p> <p style="text-align: center;"><b>Zeynep Şenel</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>We propose here efficient mathematical tracking control algorithms to design the spiking or bursting behavior in the four dimensional dynamical system modeling biological neurons represented by the Hodgkin-Huxley (HH) differential equations. The stimulating external electrical current serves as a control signal, while the membrane action potential is the target output. We use two alternative feedback algorithms, Fradkov's speed gradient and Kolesnikov's 'synergetic' target attractor control, to produce random spiking or bursting regimes in the model and to track the action potential of the system. Both algorithms demonstrate high efficiency and robustness for controlling HH dynamics. For virtually any initial condition we are able to form a single spike at the chosen moment of time, the train with any number of spikes, the arbitrary burst, and also to switch between regular and chaotic regimes of bursting. Two approaches developed here could be used effectively for the purposes of neuro-informatics and for modeling neural dysfunctions like epileptiform or other abnormal behavior in Hodgkin-Huxley neuron clusters. This work has been supported by the TÜBİTAK project 116F049 "Controlling Spiking and Bursting Dynamics in Hodgkin-Huxley Neurons".</p> <p><b>Keywords:</b> Hodgkin-Huxley neuron, tracking control algorithms</p>
<p><b>Ahmed M Khudhur</b> GICICRST1704077</p>	<p style="text-align: center;"><b>Enhancement into the dissipative stochastic mechanics based neuron model under input current pulses</b></p>

	<p style="text-align: center;"><b>Ahmed M Khudhur</b> Faculty of Eng. Tech., Malaysia Engineering Technology, Pahang 26300, Malaysia</p> <p style="text-align: center;"><b>Yasir H Naif</b> Faculty of Eng. Tech., Malaysia Engineering Technology, Pahang 26300, Malaysia</p> <p style="text-align: center;"><b>Ahmed N Abdalla</b> Faculty of Eng. Tech., Malaysia Engineering Technology, Pahang 26300, Malaysia</p> <p style="text-align: center;"><b>Abstract</b></p> <p>It has been recently argued and experimentally shown that ion channel noise in neurons may have results that are profound the neuron's dynamical behavior. Most profoundly, ion channel noise was seen become able to cause spontaneous firing and resonance that is stochastic. An approach that is physical the description of neuronal dynamics under the influence of ion channel noise has been recently proposed through the utilization of dissipative stochastic mechanics. It introduced a computational neuron model channel noise that is incorporating. The most feature that is distinctive of model could be the existence of so-called the renormalization terms therein. This model experimentally displays compatible noise- induced transitions among its dynamical states and gives the Rose-Hindmarsh model of the neuron in the limitation that is deterministic. The dissipative stochastic mechanics based neuron model will be studied when the input present to the neuron is an input pulse and noisy in this paper. Data of firing efficiency, latency, and jitter will undoubtedly be examined for various stimulus pulses. In particular, the role played by the existence of the renormalization term shall be focused on in the examination. In addition, the investigation shows that the use of noise in the inputs can improve the spiking rates as well as the coherence that is spike, especially in the existence of the renormalization terms.</p> <p><b>Keywords:</b> Hodgkin Huxley, ion channel noise, neuronal dynamic, rose-hind marsh model, stochastic ion channels.</p>
<p><b>Zulaihatu Hamidu</b> GICICRST1704078</p>	<p style="text-align: center;"><b>Examining the Factor Responsible For The Variation In Accessibility To Health Care Facilities - Ghana</b></p> <p style="text-align: center;"><b>Zulaihatu Hamidu</b> Graduate School of Natural and Applied Sciences, City and regional planning, Dokuz Eylül University, Tinaztepe Campus, 35160, Izmir, Turkey</p> <p style="text-align: center;"><b>Prof Dr Mert Cubukcu</b> City and regional Department, Architecture Faculty Dokuz Eylül University, Tinaztepe Campus, 35160, Izmir, Turkey</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>One of the current issues of discussions in recent times is on rapid population growth in the coming years and its accompanied consequence that are expected to take place in urban cities of developing counties and not in rural communities. Rapid population growth often occurs with is accompanied consequences rendering parts of cities not conducive for a living. To cap this accompanied consequence of population growth, analysts came out with a good number of critical socio-economic issues that needs to be addressed ahead of the expected growth. These include,</p>



adequate and decent housing, sanitation, adequate hospitals and schools, energy, jobs and different sources of income, sufficient open space for recreations etc. Among these critical socio-economic issues is adequate and accessible hospital, which many suggest should be given the greatest attention, for health is so important that it is sometimes equated to wealth of the people. Literature reviewed portrays that most researches on measuring accessibility to health care, concentrated on only socio-economic factors of the inhabitants and distance related factors without much assessment of the spatial structure. This necessitated this research that is to examine the factors responsible for the variations to health care facilities in a urban city of Tamale in Ghana, using online data from Arcmap GIS as well as data from the Tamale municipal planning unit and Health Directorate, the data was analyzed by using methods of spatial Analysis such as SANAT (spatial analysis along network and on the network), Network Analyst and Network Centrality index. The result revealed that spatial structure of the built environment of a city affects the accessibility levels of households to health care facility. This was because closeness of health facility to the city centre and a major principal road made some facilities more accessible than others using a walking distance of 500m.  
Keywords: Variations, Spatial structure, Accessibility and Health care facilities, GIS, Tamale (Ghana)

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## List of Conferences

<http://www.wasrti.org/conference.php>

- » 16th International Conference on Envirotech, Cleantech & Greentech (ECG), 14-15 July 2017, Bali, Indonesia
- » 16th International Conference on Researches in Science & Technology (ICRST), 14-15 July 2017, Bali, Indonesia
- » 17th International Conference on Envirotech, Cleantech & Greentech (ECG), 21-22 July 2017, Bangkok, Thailand

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15th International Conference on Researches in Science and Technology (ICRST), 23-24 June 2017, Kuala Lumpur  
University of Malaya, Rumah Kelab PAUM Clubhouse (Persatuan Alumni Universiti Malaya), Kuala Lumpur, Malaysia

- » 17th International Conference on Researches in Science & Technology (ICRST), 21-22 July 2017, Bangkok, Thailand
- » 19th International Conference on Researches in Science & Technology (ICRST), 27-28 July 2017, Barcelona, Spain
- » 21st International Conference on Researches in Science & Technology (ICRST), 08-09 September 2017, Bali, Indonesia
- » 22nd International Conference on Researches in Science & Technology (ICRST), 13-14 Sept 2017, London, UK
- » 23rd International Conference on Researches in Science and Technology (ICRST), 12-13 Oct 2017, Dubai, UAE
- » 24th International Conference on Researches in Science and Technology (ICRST), 10-11 Nov 2017, Singapore
- » 25th International Conference on Researches in Science and Technology (ICRST), 17-18 Nov 2017, Kuala Lumpur
- » 26th International Conference on Researches in Science and Technology (ICRST), 22-23 Dec 2017, Dubai
- » 27th International Conference on Researches in Science & Technology (ICRST), 29-30 Dec 2017, Bangkok, Thailand
- » ICRST (2017) XIIth International Conference on Researches in Science & Technology, 24-25 Nov 2017, Thailand
- » ICRST (2018) IIIrd International Conference on Researches in Science & Technology, 20-21 Feb 2018, Dubai