

**CONFERENCE PROCEEDINGS**



**Scientific and Technical Research Association**

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Science & Technology, 29-30 June, Pattaya, Thailand**

29- 30 June 2018

Conference Venue  
Avani Pattaya Resort & Spa, Beach Road, Pattaya, Thailand

## **KEYNOTE SPEAKER**



**Prof. (Dr.) U C Jha**  
**Professor of Mechanical Engineering, Lovely Professional University (LPU),**  
**IndiaM.Tech (IIT), Ph.D (NIT), Around 20 Years Exp.**

A distinguished academician, Prof. Jha is an alumnus of IIT, Madras. Prof. Jha is a former Director of CII Technology Centre and he has also served as the “Campus Director”, “Principal”, “Acting Director”, Vice Principal, “HOD” and “Head – R & D” in reputed educational groups. In his honour & a token of international recognition, he is in the Editorial Board of Eleven International Journals in which Nine are published from abroad. He has also visited Yale (Yale University, USA – An Ivy League University) – Great Lakes Research centre, University of Colombo (Sri Lanka), Tribhuvan University Kathmandu (Nepal) & Kasetsart University (Thailand) for Chairing the session or presentation of research paper.

His outstanding achievements have earned him a position in “Who's Who in the World” USA, 26th Anniversary Edition 2008, 28th Edition 2010, 29th Edition 2011, pearl edition 2012, 2013, 2014 & 2015, which is a prestigious international publication of the most noteworthy individuals in their respective field and careers around the globe. He is an active researcher and has been recognised for his contribution to education. He has around 20 years of teaching, research, consultancy & industrial experience and has published & presented over 100 (Hundred) papers at International / National conferences & journals. He is in the Editorial Advisory Board of Journal of Management Development (Emerald, UK), Journal of Technology Management & Innovation (Chile, South America), Contemporary Management Research (Taiwan), International Journal of Applied Engineering Research & in Editorial Review Board of Journal of Information, Knowledge & Management (USA), International Journal of Modern Engineering (USA) .

He has been selected for several international awards : notable among them are the International Einstein Award for Scientific Achievement 2010, 2000 Outstanding Intellectuals of 21st Century 2009/2010, International Scientist of the Year 2010 given by the International Biographical Centre, ENGLAND; and International Profiles of Accomplished Leaders 2010 and 2008 Man of the Year award representing India given by the by American Biographical Institute, Inc., USA. He has received Certificate of Participation from NASA, USA (for LRO “Send your Name to the Moon” Project)

**Keynote Topic: Implementation of Green Manufacturing in Indian/ Global Industries**



Dr Muttappa Bagali  
GICICRST1807051

**HR Education in B-schools Rigour, Relevance, Students Perception and Future Perspectives**

**Dr Muttappa Bagali**  
Centre For Human Resources And Higher Education, Star Up,  
Bangalore, India

**Abstract**

This paper is an attempt to understand the significance of HR education in India for its structured revision. The University structure of traditional model of imparting management education and in turn training tomorrow's business leaders has been rendered redundant. The process of privatization and globalization demands drastic changes in the traditional teaching-learning approach, but also stress a need for introduction of new age employability based knowledge, skill enhancements and attitude development, which have more economic value. This present study tries to explore the current issues of HR management education of B-schools, especially the issue of HR subjects being termed as redundant. A questionnaire has been developed and used to collect the data from the HR students of various b-schools in Karnataka State. A total of 238 students studying in twenty-three institutions, as in State Universities, Central University, Technical University, National Institute of Technology, Private University and Autonomous Institutions were covered. The data was analyzed using statistical tools such as Frequency & Percentage, Coefficient of Correlation and Chi Square. HR subjects such as HR skills, HR Development, Human Assest management, Training and Development, Performance Appraisal and Counselling, Strategic HR, were termed as redundant, as opined by State run and Deemed University student population; HR subjects such as OD, Management of Change were termed redundant as opined by NITK based students. There exists a critical and crucial requirement to shape the HR education in accordance with the changes at the national and international levels of both the industry and the academia to bring about effective competitiveness and sustained employability amongst the work force in India in the near future.

**Key Words:** B-schools; Rigour; Relevance; Global Management Education; HR Education

Anil Kumar  
GICICRST1807052

**Surface Quality Improvement In Electrical Discharge Machined Tungsten Carbide Through Electrolysis Process**

**Anil Kumar**  
Beant College Of Engineering & Technology Gurdaspur, Punjab, India

**Sangamdeep Singh**  
Sri Sai College Of Engineering & Technology, Badhani, Punjab, India

**Abstract**

Electrical discharge machining (EDM) is widely used for machining difficult to machine materials. Tungsten carbide is one such material used in industry for making tools and dies. Surface defects like recast layer, micro-craters and cracks are produced after electrical discharge machining leading to decrease in surface quality. Post machining operations become necessary for removal of the damaged surface layer to restore surface properties. However, this extends the machining time and increases the cost of production. A relatively new advancement in this direction is to perform electrolysis process after EDM with a view to enhance surface quality of the machined surface. The focus of the present study is to evaluate the performance the electrolysis process after EDM by varying current and pulse on time keeping all other

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|  | <p>parameters constant. The performance is evaluated in the form of surface roughness (Ra) and recast layer. It was observed that both surface finish and recast layer thickness are highly improved through the electrolysis process.</p> <p><b>Keywords:</b> Electrical Discharge Machining (EDM), Electrolysis process, Surface roughness (Ra), Recast layer</p>  |
| <p style="text-align: center;"><b>Dr. Naveen Beri</b><br/> <b>GICICRST1807053</b></p>            | <p style="text-align: center;"><b>Experimental Evaluation Of Electrode Profiles On Electric Discharge Machining Performance On AISI D2 Steel</b></p> <p style="text-align: center;"><b>Naveen Beri</b><br/> <b>Beant College Of Engineering &amp; Technology Gurdaspur, Punjab, India</b></p> <p style="text-align: center;"><b>Sourav Mahajan</b><br/> <b>Sri Sai College Engineering &amp; Technology, Badhani, Punjab, India</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Electro discharge machining is one of the non-traditional machining procedures used to produce a better-machined surface with high surface finish on difficult to machine materials. The objective of present research work is to study the influence of different electrode profile on surface quality during electric discharge machining. Best parametric setting is obtained using multiple response technique with AISI D2 die steel as work material and copper as an electrode. The input parameters selected in the present work are peak current, duty cycle, pulse on time and polarity. Taguchi Methodology was used to obtain the best parametric setting for material removal rate, surface roughness, and tool wear rate. Their after machining is performed at best parametric setting as proposed by multi-objective optimization using different electrode profile i.e. concave, convex, and flat bottom. Machined surface quality is evaluated in term of material removal rate (MRR), tool wear rate (TWR), surface roughness (Ra) and recast layer. It was found that 7mm (radius) concave bottom surface of the electrode resulted in the generation of minimum surface roughness and recast layer.</p> <p><b>Keywords:</b> Electro discharge machining, Taguchi Methodology, Machined surface quality, MRR, TWR, Surface Roughness</p> |
| <p style="text-align: center;"><b>Narges Darvish Talkhonchek</b><br/> <b>GICICRST1807054</b></p> | <p style="text-align: center;"><b>Recognizing The Physical Role And Impact Of Iranian Garden On Iranian Arts; (A Case Study Of Carpet)</b></p> <p style="text-align: center;"><b>Narges Darvish Talkhonchek</b><br/> <b>PHD Student In Department Of Art And Architecture, South Tehran Branch, Islamic Azad University, Tehran, Iran.</b></p> <p style="text-align: center;"><b>Dr. Hadi Ghodusifar</b><br/> <b>Assistant Professor, Faculty Member Of Islamic Azad University, South Tehran Branch</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Crisis in the relationship between man and nature along with population density in the present age have caused the emergence of stressful environments. Nature is effective in responding to human needs including the need for peace and self-prosperity and enhancing the mental health of individuals and groups and the appropriate presence of nature in living environments reduces many of mental, physical and social illnesses in communities. In this regard, architects, organizers and city planners have proposed the idea of designing home, healing and public gardens in cities for citizens in order to meet the need and be related to nature. Iranian garden like architecture, poetry, painting, music and other branches of Iranian art has some subtleties within the framework of tradition and principles and is of the highest ranking in the unity of diversity. In creating Iranian gardens, the</p>   |

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|   | <p>verdancy of trees and plants, dynamics and joyful presence of water, the attractive sound of birds, pleasant air, beauty and the ultimate savings and efficiency with their all aspects are considered. Iranian garden in other Persian arts such as carpets, handicrafts, miniature, prose and verse literature and also music has displayed a design of garden or its mindset in itself. And this display is manifested in the most practical art forms such as rug and carpet weaving to the most subjective and fantastic sound of music.</p> <p><b>Keywords:</b> Iranian garden, architecture, carpet, Persian arts, creation of garden</p>   |
| <div style="text-align: center;">  <p><b>Yuli Yetri</b><br/>GICICRST1807055</p> </div> | <p style="text-align: center;"><b>Physical And Mechanical Properties Of Particle Board From Cacao Peels Waste And Bagasse</b></p> <p style="text-align: center;"><b>Yuli Yetri</b><br/>Mechanical Engineering, Politeknik Negeri padang (Padang State Polytechnic),Indonesia</p> <p style="text-align: center;"><b>Abstract</b></p> <p>This research is to know the best material treatment of physical and mechanical properties of particle board. In this research two variations of material treatment were used, namely the effect of composition ratio of materials and the number of adhesives. The composition variation of the ingredients between cacao peels and bagasse that was used 100: 0%, 75: 25%, 50: 50%. The isocyanate adhesive content used was 12%, 14%, and 16%. The length of the bagasse fiber used is 3 cm. Parameters measured were moisture content, density, water absorption, fracture toughness, parallel compressive strength of the surface and internal stickiness. The best particle board is a particle board with a composition ratio of 50:50% with 16% adhesive content. The results showed that the resulting physical properties met JIS A 5908 (2003), SNI 03-2105-2006, and FAO (1996) standards. However, in the mechanical properties test there are some particle board MOR values that do not meet the standards. Based on the percentage of particle board density, the resulting particle board includes the type of medium density particle board up to high density particle board.</p> <p><b>Keywords:</b> cacao peels, bagasse, isocyanate adhesive, particle board</p> |
| <div style="text-align: center;"> <p><b>Napon Butrach</b><br/>GICICRST1807056</p> </div>  | <p style="text-align: center;"><b>Characterization of Anatase and Rutile Phase of TiO<sub>2</sub> Nanostructure with Different Thermal Annealing</b></p> <p style="text-align: center;"><b>Napon Butrach</b><br/>Sathollamark Rd. Warinchamrap, Department of Physics, Faculty of Science, Ubon Ratchathani University,34190 Thailand</p> <p style="text-align: center;"><b>Orathai Thumthan</b><br/>Sathollamark Rd. Warinchamrap, Department of Physics, Faculty of Science, Ubon Ratchathani University,34190 Thailand</p> <p style="text-align: center;"><b>Suttinart Noothongkaew</b><br/>Sathollamark Rd. Warinchamrap, Department of Physics, Faculty of Science, Ubon Ratchathani University,34190 Thailand</p> <p style="text-align: center;"><b>Abstract</b></p> <p>TiO<sub>2</sub> nanotubes (NTs) were prepared by anodization of Ti foil. The TiO<sub>2</sub> NT films were annealed at the temperature range of 500°C to 900°C for 2 h. The morphology, elemental compositions, and crystallization of TiO<sub>2</sub> NTs were analyzed by field emission scanning electron microscopy (FE-SEM), X-ray diffraction (XRD), Raman spectra, and X-ray spectroscopy (XPS), respectively. XRD and Raman spectra results confirm the presence of the anatase phase for TiO<sub>2</sub> NT films which were annealed at 500°C to 700°C. Furthermore, it found</p>   |

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|  | <p>that anatase to rutile phase transition occurred at temperature above 700 °C<br/> <b>Keywords:</b> : Titanium dioxide, Nanotubes, Thermal annealing, Anodization</p>   |
| <p><b>Prachrakool Koking</b><br/>GICICRST1807057</p>   | <p style="text-align: center;"><b>Effect Of DI Water Content On The Growth Of Tio2 Nanotubes Synthesized By Anodization Process</b></p> <p style="text-align: center;"><b>Prachrakool Koking</b><br/>Department Of Physics, Faculty Of Science, Ubon Ratchathani University,34190 Thailand</p> <p style="text-align: center;"><b>Orathai Thumthan</b><br/>Department Of Physics, Faculty Of Science, Ubon Ratchathani University,34190 Thailand</p> <p style="text-align: center;"><b>Suttinart Noothongkaew</b><br/>Department Of Physics, Faculty Of Science, Ubon Ratchathani University,34190 Thailand</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Vertically aligned TiO<sub>2</sub> nanotubes (NTs) were fabricated by anodization of Ti foil in ethylene glycol solutions containing different concentration of DI water. The morphology, elemental composition, and crystallization of TiO<sub>2</sub> nanostructures were analyzed by field emission scanning electron microscopy (FE-SEM), X-ray diffraction (XRD), Raman spectra, and X-ray spectroscopy (XPS), respectively. The size of diameter and length tubes could be controlled by varying concentration of DI water. Furthermore, we found that TiO<sub>2</sub> NTs in DI water 12 wt. % was suitable for further applications in UV photodetector due to its good surface and long tube. TiO<sub>2</sub> NTs has a high potential for UV photodetectors with the possibility to fine-tune properties, and it is worth of further investigation.<br/> <b>Keywords:</b> Titanium dioxide, nanotubes, anodization.</p>  |
|  <p><b>Dr. Madhukumar R</b><br/>GICICRST1807058</p> | <p style="text-align: center;"><b>Optical and Mechanical Properties of PVA/SA thin film using Solution Casting method</b></p> <p style="text-align: center;"><b>Dr. Madhukumar R</b><br/>Assistant Professor, Department of Studies In Physics, Shridevi Post Graduate center, Tumkur, Karnataka 572 106, India</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The optical and mechanical properties of PVA/SA films. In order to study the response of PVA/SA based on polymer composite films. Polymer-based films of were prepared by solution casting technique at room temperature. The prepared samples were characterized by UV-Visible spectrophotometer (UV-Vis) and universal testing machine (UTM) to study the optical and mechanical properties. The recorded spectra have has been The recorded UV-Vis absorption and transmission spectra have been used to determine the optical band gap (E<sub>g</sub>), refractive index (n), extinction coefficient (k), optical conductivity (σ<sub>opt</sub>) and dielectric constants (ε*) of PVA/SA films. Reduction in optical band gap and increase in refractive index with increasing concentration were observed. It is also found that there is an increase in dielectric constants with increasing photon energy. The obtained results reveal that the refractive index of the PVA/SA films may be efficiently changed. Mechanical properties of the samples were carried out using Universal Testing Machine (UTM) Lloyd Instruments – LRX model (UK) with gauge length 50mm at room temperature. The mechanical properties like tensile strength (Ts), Young’s modulus (MPa) increases with</p> |

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|  | <p>increase in concentration.<br/>Keywords: UV-Vis, optical properties, optical band gap, mechanical properties.</p>   |
|  <p>Yesappa L<br/>GICICRST1807059</p> | <p>Electron Beam irradiation effect on Structure, Morphology and, Optical Properties PVDF HFP/PEO Blend polymer electrolyte films</p> <p>Yesappa L<br/>Department of Physics, Mangalore University, Mangalagangothri - 574199, India</p> <p>Niranjana M<br/>Department of Physics, Mangalore University, Mangalagangothri - 574199, India</p> <p>Ashokkumar SP<br/>Department of Physics, Mangalore University, Mangalagangothri - 574199, India</p> <p>Vijeth H<br/>Department of Physics, Mangalore University, Mangalagangothri - 574199, India</p> <p>Vandana M<br/>Department of Physics, Mangalore University, Mangalagangothri - 574199, India</p> <p>Basappa M<br/>Department of Physics, Mangalore University, Mangalagangothri - 574199, India</p> <p>Jishnu Dwivedi<br/>Head, Industrial Accelerators Division RRCAT, Indore -452013, India</p> <p>V C Petwal<br/>Head, Industrial Accelerators Division RRCAT, Indore -452013, India</p> <p>Ganesh Sanjeev<br/>Department of Physics, Mangalore University, Mangalagangothri - 574199, India</p> <p>Devendrappa H<br/>Department of Physics, Mangalore University, Mangalagangothri - 574199, India</p> <p><b>Abstract</b><br/>The effect of 8 MeV electron beam (EB) energy on the poly (vinylidene fluoride-co-hexafluoropropylene) (PVDF-HFP)/polyethylene oxide (PEO) (w/w 90:10- PHP10) polymer blend electrolyte film prepared by solution casting method using DMF as solvent. The change in structure, morphology and, optical properties as a function of absorbed EB doses at 40, 80, and 120 kGy were studied. The radiation effect can be results into two ways- degradation (chain scission) and chain link (crosslinking) which are confirmed by the FT-IR analysis. The band at 1401 cm<sup>-1</sup> corresponding to the -CH<sub>2</sub>- bending or scission mode is shifts to 1397 cm<sup>-1</sup> after 120 kGy EB dose is due to the intermolecular interactions and the changes of macromolecular chain by breaking of bonds upon irradiation. The XRD patterns show the varied peak intensity at 2θ=19.750 and 38.180 in irradiated polymer blend electrolyte films and decreases the crystallinity from 60.03 to 23.42 % at 120 kGy EB dose is confirms the increased amorphousity, which was</p> |

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|  | <p>supported by the surface morphology studies decreasing the size of spherulites with dose. The increase in optical absorption and red shift was observed in the irradiated film. The optical band gaps (Eg), Urbach energy were estimated and found to be decreased, but the number of carbon atoms in cluster increased with the EB dose. The obtained results notice that physical properties of polymer blend electrolytes can be improved by EB irradiation to use in different potential applications.</p>  |
| <div style="text-align: center;">  <p><b>Roni Marudut Situmorang</b><br/> <b>GICICRST1807060</b></p> </div> | <p style="text-align: center;"><b>Development Of Volcansmart Early Warning Systems As An Early Warning Application Of The Eruption Of Merapi's Volcanic Using The Geographic Information System</b></p> <p style="text-align: center;"><b>Roni Marudut Situmorang</b><br/>         Departemen Of Geography Education, Faculty Of Social Science, Ysu</p> <p style="text-align: center;"><b>Singgih Bekt Worsito</b><br/>         Departemen Of Mechatronica Engineering Education. Faculty Of Engineering, Ysu</p> <p style="text-align: center;"><b>Anjasmoro Adi Nugroho</b><br/>         Departemen Of Informatica Engineering, Faculty Of Engineering, Ysu</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Based on statistical data, land surface temperature can be the main parameters in the prediction of eruption of Merapi (Noviar et al, 2006). The eruption of Merapi in 2010 resulted in the victim's death as much as 347 people with the most victims in the Regency of Sleman i.e. 246 inhabitants, this is due to the slope of Merapi community as long as it doesn't get info quickly when the eruption will occur. This problem caused the latest information came a result of information coming not directly acquired community. Rescue many souls before the eruption happens very needed, therefore the necessary information that can be used in the community directly, through application of pre disaster mitigation of the eruption volcanic activity report in Android applications. This research use mixed method, i.e: (1) Research and Development to create Volcansmart EWS report by the method of linear Sequential Model, and (2) quantitative research to implement Volcansmart VEWS with GIS analysis form scoring and overlay. The results of this research are: made Volcansmart EWS and the implementation Volcansmart VEWS at the disaster-prone region of region Sleman using GIS analysis. Measurement of land surface periodically through these applications can improve community preparedness in her daily activities in the area of fasies Proximal of the Merapi's Volcanic and determine the right time to evacuate citizens quickly.</p> <p><b>Keywords: Volcanic Early Warning Systems (VEWS), Volcansmart, Land Surface Temperature, GIS</b></p> |
| <p style="text-align: center;"><b>Roselyn Joyce Labsan</b><br/> <b>GICICRST1807061</b></p>   | <p style="text-align: center;"><b>A Liter Lighter: Implementing the Liter of Light Project</b></p> <p style="text-align: center;"><b>Roselyn Joyce Labsan</b><br/>         Senior High Student of Science, Technology, Engineering and Mathematics (STEM),Lorma Colleges Senior High School, La Union, Philippines</p> <p style="text-align: center;"><b>Trisha Joy Marzo</b><br/>         Senior High Student of Science, Technology, Engineering and Mathematics (STEM),Lorma Colleges Senior High School, La Union, Philippines</p> <p style="text-align: center;"><b>Jamine Dale Agustin</b></p>   |

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|   | <p style="text-align: center;"><b>Senior High Student of Science, Technology, Engineering and Mathematics (STEM),Lorma Colleges Senior High School, La Union, Philippines</b></p> <p style="text-align: center;"><b>Kimalin Satud</b><br/><b>Senior High Student of Science, Technology, Engineering and Mathematics (STEM),Lorma Colleges Senior High School, La Union, Philippines</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>The Liter of Light project has been gradually immersing through its limelight since April 2011. It is an international project movement first launched by Iliac Diaz from the Philippines who innovated the use of a plastic liter bottle as a light source during the day. And with the backup electricity source of solar panels to light up a high-powered LED light, the product could be used as a bulb at night for such a low cost. This study aimed to reduce the electricity consumption of the residents and to provide light source in case of power interruptions, calamities, and emergencies. Moreover, it is aimed to determine the impact of Liter Lighter regarding the electricity consumption and usage of the product by the respondents and to determine the effectiveness of the Liter Lighter in terms of its longevity and luminosity. In this qualitative action research, the researchers installed the product in a residence at Barangay Ili Sur, San Juan, La Union and conducted semi-structured interview with the residents to identify the impact of the product. Before the installation, the researchers interviewed the respondents regarding their last month's electric bill. After the product was installed and observed for several days, the researchers conducted a post-interview to the respondents regarding their usage of the product. Results show that the residents are willing to use the product as their everyday light source and during emergency cases and even recommended other ways to use the product. There was also a reduction on their electric consumption basing from their previous monthly electric bill.</p> <p><b>Keywords: light, electric consumption, bottle, solar, Liter of Light</b></p> |
|  <p style="text-align: center;"><b>Wiqar Hussain Shah</b><br/><b>GICICRST1807062</b></p> | <p style="text-align: center;"><b>Enhancement of thermoelectric property in Sb doped Tl10-xSbxTe6 nano-structural system</b></p> <p style="text-align: center;"><b>Wiqar Hussain Shah</b><br/><b>Department of Physics, Faculty of Basic and Applied Sciences, International Islamic University, Islamabad, Pakistan</b></p> <p style="text-align: center;"><b>Akif Safeen</b><br/><b>Department of Physics, Abdul Wali Khan University, Mardan, Pakistan</b></p> <p style="text-align: center;"><b>Kashif Safeen</b><br/><b>Department of Physics, Abdul Wali Khan University, Mardan, Pakistan</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Thallium antimony telluride Tl10-xSbxTe6 with different concentration of Sb (x = 1, 1.25, 1.50, 1.75, 2) were prepared by solid state reaction and then the nano-particles from the ingot by ball milling and hot-pressing. From XRD peaks we found that, increasing the ratio of 'x' the particle size will be decreased. SEM images showed surface morphology of our samples and EDX result show the elemental composition of the constituent elements of Tl10-xSbxTe6. We showed that with increasing the Sb content, the electrical conductivity decreased while the Seebeck coefficient was increased. The contrary</p>  |

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|   | <p>behavior of Seebeck co-efficient and electrical conductivity give rise to enhancement in power factor. Our study allows envisaging the application of Tl10-xSbxTe6 as thermoelectric material.<br/> <b>Keywords:</b> Sn doping in Tellurium Telluride nano-materials, electron holes competition, effect on Sn doping on Seebeck co-efficient and electrical conductivity, effects on Power factor,</p>  |
| <p><b>Shahrul Suhaimi Ab. Shokor</b><br/> <b>GICICRST1807064</b></p>  | <p style="text-align: center;"><b>A Stakeholder View Of Critical Success Factors For Biogas-Electricity Implementation At Cattle Farms In Malaysia</b></p> <p style="text-align: center;"><b>Shahrul Suhaimi Ab. Shokor</b><br/> <b>Institute of Energy Policy &amp; Research, Universiti Tenaga Nasional, Malaysia</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Malaysia has great potential for biogas production from cattle manure waste. According to the Department of Statistics Malaysia, in 2014 there were 760 thousand head of cattle in Malaysia. In addition, the potential for electricity generation from the manure of these cattle could be up to 100 Megawatt. However, the practice of generating electricity from animal manure is considered as an uncommon practice in Malaysia and this study is designed to explore the reasons behind this situation. <b>Objective:</b> This study aims to identify the drivers and barriers that exist for biogas stakeholders in Malaysia in regard to the implementation of biogas-electricity projects. <b>Results:</b> The study identified several factors that can be considered as critical factors for the successful implementation of biogas-electricity projects in Malaysia. <b>Conclusion:</b> This study provides some new insights into biogas-electricity implementation for the cattle farming industry in Malaysia. <b>Keywords:</b> Biogas, electricity, manure waste</p>   |
|  <p style="text-align: center;"><b>Dr.Punit Saraswat</b><br/> <b>GICICRST1807065</b></p> | <p style="text-align: center;"><b>An Assessment Of Environmental Noise Pollution Of Jodhpur, Rajasthan, India</b></p> <p style="text-align: center;"><b>Dr.Punit Saraswat</b><br/> <b>Associate Professor, Head, Department Of Zoology &amp; Environmental .Sciences Lachoo Memorial College Of Science &amp; Technology (Autonomous) Jodhpur (Rajasthan), India</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Jodhpur, situated on the edge of the Thar Desert at an altitude of 216 meters above mean sea level is the second largest city of Rajasthan, India. In recent years Jodhpur have expanded exponentially with increase in population, industries, vehicles etc. and this growth has created the problems like noise, air and waste pollution to name a few. Noise pollution is one of the problems which are not being addressed seriously and hence the present study was undertaken. The noise levels Leq dB (A) were monitored at three sites namely Shastri Nagar (Lachoo memorial College of Science and Technology-LMC), Basni Phase I, and AIIMS main gate road site, grouped as Residential, Industrial and silence zone area respectively. The monthly observations were recorded during morning hour (8-10AM), noon hours ( 12-2PM), and evening hour (5-7 PM ) using sound level meter (Envirotech Instruments) model SLM 100, taking the readings at an interval of 1min, from December 2017 to April 2018. L10, L90 and noise climate (NC) were also calculated to assess the gravity of noise environment. The maximum noise level recorded at Shastri Nagar,(LMC) site was 87.0dB in January 2018 (8-10 AM), at Basni Phase I site was 97.2dB in December 2017 (8-10 AM), and was recorded 91.6dB in April 2018 (5-7 PM) at AIIMS main gate road site. The average noise level were found to be more than prescribed limits set by Central Pollution control Board (CPCB 2000) at all the three</p> |

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|  | <p>sites for all the five months and all the three recording hours (8-10AM, 12-2PM, and 5-7 PM), except at Basni Phase I site when it was observed to be slightly below (CPCB limit 75 dB - observed level 73.67 dB) the prescribed limits, in February 2018 (12-2 PM). The present study can be fruitful in devising effective methods to curb this problem.</p> <p><b>Key words:</b> Jodhpur, noise, sound level meter, L10, L90.</p>  |
| <p style="text-align: center;"><b>Danisovic, L</b><br/> <b>GICICRST1807066</b></p>   | <p style="text-align: center;"><b>Generation of iPSCs via a non-integrative method using human dental pulp-derived stem cells</b></p> <p style="text-align: center;"><b>Danisovic, L</b><br/> <b>Institute of Medical Biology, Genetics and Clinical Genetics, Comenius University, Bratislava, Slovakia</b></p> <p style="text-align: center;"><b>Bevizova, K</b><br/> <b>Institute of Medical Biology, Genetics and Clinical Genetics, Comenius University, Bratislava, Slovakia</b></p> <p style="text-align: center;"><b>Mazreku, M</b><br/> <b>Institute of Medical Biology, Genetics and Clinical Genetics, Comenius University, Bratislava, Slovakia</b></p> <p style="text-align: center;"><b>Harsanyi, S.</b><br/> <b>Institute of Medical Biology, Genetics and Clinical Genetics, Comenius University, Bratislava, Slovakia</b></p> <p style="text-align: center;"><b>Nicodemou., A.</b><br/> <b>Institute of Medical Biology, Genetics and Clinical Genetics, Comenius University, Bratislava, Slovakia</b></p> <p style="text-align: center;"><b>Csobonyeiova, M.</b><br/> <b>Institute of Medical Biology, Genetics and Clinical Genetics, Comenius University, Bratislava, Slovakia</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>A novel approach for stem cell generation is the attempt to induce conversion of the somatic cells into pluripotent stem cells so called induced pluripotent stem cells (iPSCs) by introducing specific transcription factors. iPSCs have two essential cell characteristics, they are pluripotent and possess long term cell-renewal capacity. Additionally, iPSCs can be derived from patient-specific somatic cells, thus bypassing ethical and immunological issues. The main goal of our study was to reprogram human dental pulp-derived stem cells by method using lipid nano-particle technology in combination with Epi 5 reprogramming vectors. The obtained iPSCs were characterized by several sophisticated methods of molecular biology and microscopy. Distinct colonies of iPSCs started to appear by day 23 after reprogramming. The presence of iPSCs colonies was shown by alkaline phosphatase (AP) live staining. After manual picking the colonies and their subsequent passaging, they did not lose the ability to form embryoid bodies; they were strongly positive for AP, Tra-1-60, and SSEA-5. The obtained iPSCs expressed pluripotency markers Oct4, Sox2 and Nanog, and the expression levels of chondrogenic, osteogenic and adipogenic markers were significantly higher in comparison to control. In summary, we have demonstrated that dental pulp-derived stem cells can be reprogrammed into iPSCs and after further analysis concerns on their biological safety they may be used as patient-specific cells in regenerative medicine.</p> <p><b>Supported by grants APVV No. 14-0032 and VEGA No. 1/0153/15.</b></p> |
| <p style="text-align: center;"><b>Zuber M. Patel</b><br/> <b>GICICRST1807067</b></p> | <p style="text-align: center;"><b>Device Driver for 3-axis Accelerometer based on ARM Cortex-M0+ Processor</b></p>   |

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|  | <p style="text-align: center;"><b>Zuber M. Patel</b><br/>Dept. of Electronics Engg., SVNIT, Suratindia.</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The use of accelerometers in aerial vehicles is crucial for measuring tilt (inclination) in order to control hovering. In this work, the driver software for 3-axis accelerometer device is developed based on the platform of ARM cortex M0+ processor. This driver software reads the values of acceleration of all 3 axes and computes roll, pitch and yaw tilt angles. This driver software is then integrated to open source freeRTOS operating system and then complete system using freeRTOS is tested by making system call from application software.</p> <p><b>Keywords :</b> Accelerometer, ARM cortex M0+, Device Driver, Quad copter, RTOS</p>   |
| <div style="text-align: center;">  <p><b>Nurwarrohman Andre Sasongko</b><br/>GICICRST1807068</p> </div> | <p style="text-align: center;"><b>Synthesis and Characterization of Nano Magnetic Materials Fe<sub>3</sub>O<sub>4</sub> from Corrosion Iron</b></p> <p style="text-align: center;"><b>Nurwarrohman Andre Sasongko</b><br/>Department of Chemistry, Diponegoro University, Indonesia</p> <p style="text-align: center;"><b>Nanda Al Faizahb</b><br/>Department of Chemistry, Diponegoro University, Indonesia</p> <p style="text-align: center;"><b>Hani Ma'rifahb</b><br/>Department of Chemistry, Diponegoro University, Indonesia</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Corrosion iron (Fe) which occur in nature can produce iron oxide Fe<sub>3</sub>O<sub>4</sub>. Metal oxide Fe<sub>3</sub>O<sub>4</sub> is the most powerful magnetic properties . Phase of magnetite (Fe<sub>3</sub>O<sub>4</sub>) on iron oxide has a good magnetic properties and the highest than at any other phase such as Fe<sub>2</sub>O<sub>3</sub>. As long as corrosion iron yet much exploited and processed further. research to harness Fe<sub>3</sub>O<sub>4</sub> material as the magnetic material can increase the value of selling. Magnetic Fe<sub>3</sub>O<sub>4</sub> material can be used in many applications such as metals adsorbtion, and microwaves. Nano-technology is the making and use of the material in a very small size. If the material is Fe<sub>3</sub>O<sub>4</sub> made size nanometer will have the distinction of material compared to the macro. Fe<sub>3</sub>O<sub>4</sub> has ferimagnetik properties of nano-sized and has a broad application opportunities. One of the advantage is its feromagnetic properties can adsorb electromagnetic wave. HEM (High Energy Milling) is the physical method to make nano Fe<sub>3</sub>O<sub>4</sub>. Making material nano particle in this way achieve under 10 nm. In this paper has been studied synthesis and characterization Fe<sub>3</sub>O<sub>4</sub> use HEM and variations temperature 300, 400, 500 o C. The data show that the higher temperature in the calcsination process produce a better magnetic properties</p> <p><b>Keywords:</b> Corrosion Iron, High Energy Milling, Material magnetit, nano Fe<sub>3</sub>O<sub>4</sub>.</p> |
| <p><b>Raymond Y.K. Lau</b><br/>GICICRST1807069</p>   | <p style="text-align: center;"><b>Toward a Data Science Approach for Teaching Data Science Courses</b></p> <p style="text-align: center;"><b>Raymond Y.K. Lau</b><br/>Department of Information Systems, City University of Hong Kong<br/>Kowloon, Tat Chee Avenue, Hong Kong SAR</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Data science is an interdisciplinary field that unifies multiple sub-fields such as statistics, data analysis, knowledge discovery, machine learning, artificial intelligence (AI), and so on in order to explore and analyze various phenomenon by using a data-driven approach. In particular, it</p>   |

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|   | <p>employs a systematic and scientific methodology and utilizes interdisciplinary methods, processes, algorithms, and systems to discover actionable knowledge from raw data with a variety formats such as texts, images, video, and audio. Researchers believe that data science has become the forth paradigm of scientific approaches of problem solving after the development of classical scientific research methods, namely empirical, theoretical, and computational several century ago. There is a general belief that the emerge of more sophisticated computational systems and methods (e.g., deep learning) and the availability of big data at a much lower cost have revolutionarized the underlying thinking of scientific methods for problem solving. Accordingly, top universities around the world has launched or intend to launch new data science programmes in recent year although there is not a general consensus of what should be the main curriculum of a typical data science programme nor the corresponding teaching method.</p> <p>The main objectives of our research are to investigate into the curriculum design of a data science programme and an effective teaching method for data science courses. The research methodology we employed is mainly an action research approach, that is, an investigator actively participate in a real research environment e.g., an organization, while simultaneously perform the planned research activities. For our case, we had been involved in the design of a new data science programme at the college level of our university. More specifically, by using the Constructivist Grounded theory (CGT) research method, we analyzed the codes, concepts, and categories of concepts explored by various stakeholders of a data science curriculum design team. Through the discovery of a grounded theory, we better understand what are the core concepts of a data science programme. These prototypical concepts then become the foundation of developing the new curriculum of a data science programme. On the other hand, we also employed the action research approach to uncover the practical teaching method for data science related courses. The author has been the course designer and the instructor of a new social media analytics course at the post-graduate level. The research outcomes have been obtained through the experimental approach of designing various data science units and the corresponding instructional methods (e.g., data-driven problem-solving exercises, learning by doing instructional method, data-driven peer assessment method, data-driven instructor-student joint assessment method, data-driven concept map generation, and so on) of the social media analytics course. At the end, we uncover a set of data science oriented instructional methods that seem to lead to improved student satisfaction via a formal questionnaire-based teaching evaluation. In sum, we have successful completed our research objectives by uncovering data science based instructional methods for teaching data science courses.</p> <p><b>Keywords:</b> Data Science, Data Analytics, Grounded Theory, Curriculum Design</p> |
|  <p><b>Ragil Adi Nugroho</b><br/>GICICRST1807070</p> | <p style="text-align: center;"><b>Seawater Desalination Using Distillation Method Based On Convex Lens And Ag Doped Zno Thin Film To Improve Freshwater Productivity And Quality</b></p> <p style="text-align: center;"><b>Ragil Adi Nugroho</b><br/>Physics Department, Faculty of Science and Mathematics, Diponegoro University Jl. H. Prof. Sudarto, SH, Tembalang, Semarang, Central Java-Indonesia</p> <p style="text-align: center;"><b>Hani Ma'rufah</b><br/>Physics Department, Faculty of Science and Mathematics, Diponegoro University Jl. H. Prof. Sudarto, SH, Tembalang, Semarang, Central</p>  |

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|   | <p style="text-align: center;"><b>Java-Indonesia</b></p> <p style="text-align: center;"><b>Lana Milatul Khusna</b><br/> <b>Physics Department, Faculty of Science and Mathematics, Diponegoro University Jl. H. Prof. Sudarto, SH, Tembalang, Semarang, Central Java-Indonesia</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Water is the most important need to support human life activity. Lack of clean water supply quantitatively because of 97% water in earth is seawater with 35% salinity. Water with high salinity is certainly not consumable. One effort that can be done to overcome the clean water crisis in the coastal areas is through desalination of seawater to produce water with low salinity. Some of the desalination methods that ever existed were MSF (Multi Stage Flash Distillation) and Reverse Osmosis. But both of these methods have high investment cost. Therefore, a cheaper, and easier method to apply such as distillation is required. Distillation is done by drying the seawater under the sun which triggers the evaporation of water that evaporates and condenses to obtain fresh water. In this research, distillation system is combined with convex lens and Ag doped ZnO thin film. Convex lens is a lens that can focus heat and sunlight after passing through the lens. The use of convex lens in the distillation system can speed up the evaporation process of seawater. The distillation system is made of glass and aluminium. Ag doped ZnO thin film was synthesized from AgNO<sub>3</sub> and ZnCH<sub>3</sub>COOH by sol-gel method. Based on photocatalyst activity, when the Ag doped ZnO thin film is exposed with visible light, it will form a superoxide compound that can degrades pollutant such as heavy metals, eliminating harmful microbes and bacteria. This material also has a hydrophilicity that makes the water absorbed by the material coated with thin film. With this characteristic, it can make the water more easily move on the glass due to the influence of gravity. Tests carried out include characterization of a thin layer of Ag doped ZnO, evaporation rate and water quality. From this technology it can increase the freshwater productivity and quality from seawater desalination process with distillation method.</b></p> <p><b>Keywords : distillation, Ag doped ZnO thin film, Photocatalyst, Convex lens.</b></p> |
| <p style="text-align: center;"><b>Ragil Adi Nugroho</b><br/> <b>GICICRST1807071</b></p> | <p style="text-align: center;"><b>Seawater Desalination Using Distillation Method Based On Convex Lens And Ag Doped Zno Thin Film To Improve Freshwater Productivity And Quality</b></p> <p style="text-align: center;"><b>Ragil Adi Nugroho</b><br/> <b>Physics Department, Faculty of Science and Mathematics, Diponegoro University</b></p> <p style="text-align: center;"><b>Hani Ma'rufah</b><br/> <b>Physics Department, Faculty of Science and Mathematics, Diponegoro University</b></p> <p style="text-align: center;"><b>Lana Milatul Khusna</b><br/> <b>Physics Department, Faculty of Science and Mathematics, Diponegoro University</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Water is the most important need to support human life activity. Lack of clean water supply quantitatively because of 97% water in earth is seawater with 35% salinity. Water with high salinity is certainly not consumable. One effort that can be done to overcome the clean water crisis in the coastal areas is through desalination of seawater to produce</b></p>   |

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|   | <p>water with low salinity. Some of the desalination methods that ever existed were MSF (Multi Stage Flash Distillation) and Reverse Osmosis. But both of these methods have high investment cost. Therefore, a cheaper, and easier method to apply such as distillation is required. Distillation is done by drying the seawater under the sun which triggers the evaporation of water that evaporates and condenses to obtain fresh water. In this research, distillation system is combined with convex lens and Ag doped ZnO thin film. Convex lens is a lens that can focus heat and sunlight after passing through the lens. The use of convex lens in the distillation system can speed up the evaporation process of seawater. The distillation system is made of glass and aluminium. Ag doped ZnO thin film was synthesized from AgNO<sub>3</sub> and ZnCH<sub>3</sub>COOH by sol-gel method. Based on photocatalyst activity, when the Ag doped ZnO thin film is exposed with visible light, it will form a superoxide compound that can degrades pollutant such as heavy metals, eliminating harmful microbes and bacteria. This material also has a hydrophilicity that makes the water absorbed by the material coated with thin film. With this characteristic, it can make the water more easily move on the glass due to the influence of gravity. Tests carried out include characterization of a thin layer of Ag doped ZnO, evaporation rate and water quality. From this technology it can increase the freshwater productivity and quality from seawater desalination process with distillation method.</p> <p><b>Keyword :</b> distillation, Ag doped ZnO thin film, Photocatalyst, Convex lens.</p>   |
| <p style="text-align: center;"><b>Ho Seon Ahn</b><br/> <b>GICICRST1807072</b></p> | <p style="text-align: center;"><b>Development The High Performance Adhesives Based On Modified Silicate</b></p> <p style="text-align: center;"><b>Gyu Hyun Shim</b><br/> <b>Department of Mechanical Engineering, Incheon National University,</b><br/> <b>Republic of Korea</b></p> <p style="text-align: center;"><b>Ho Seon Ahn</b><br/> <b>Department of Mechanical Engineering, Incheon National University,</b><br/> <b>Republic of Korea</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>The organic adhesives commonly used are low in heat resistance, and are required to have an inorganic adhesive which is harmless to the human body and is highly environment-friendly and highly heat-resistant due to problems of human health and environmental pollution. In this study, we aim to produce adhesives with high shear strength by using alkali silicate, which is widely used as an inorganic adhesive. There are three types of silicates, sodium, potassium and lithium, which are commonly used. Alkali silicates have three different types of silicates: heat resistance, shear strength and water resistance. They are water resistant through the combination of three silicates and have the highest shear strength we found it. In general, the shear strength of sodium silicate was high and lithium silicate was water resistant, so we made a binder with a weight ratio of sodium: potassium: lithium = 7: 7: 3. Since silicate is a water base solution, water must be removed in order to have adhesive strength as an adhesive. Therefore, the adhesion strength is affected by the curing method. In order to increase the adhesive strength of the binder thus prepared, the binder was removed by heating before the curing of the adhesive, and an adhesive having a high viscosity was made. By removing the moisture of the binder, a large amount of silicate components remains in the bonding area, and the bonding surface becomes dense and the shear strength is improved.</p> |
| <p style="text-align: center;"><b>Till D. Frank</b></p>                           | <p style="text-align: center;"><b>Numerical analysis of multifrequency synchronization between two</b></p>  |

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| <p><b>GICICRST1807073</b></p>  | <p style="text-align: center;">canonical-dissipative oscillators with a Fokas-Lagerstrom potential coupling</p> <p style="text-align: center;"><b>Till D. Frank</b><br/>Department of Psychological Sciences, University of Connecticut, 406 Babbidge Road, Storrs, CT, USA</p> <p style="text-align: center;"><b>Saman Mongkolsakulvong</b><br/>Department of Physics, Faculty of Science, Kasetsart University, Bangkok, 10900, Thailand</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Recent work by Mongkolsakulvong and Frank (Condensed Matter Physics, Vol. 20, article 44001, 2017) has examined two oscillator systems that feature third invariants of motions in terms of Smorodinsky-Winternitz potentials. It has been shown that within the framework of canonical-dissipative systems such third invariants can be used to coupled limit cycle oscillators such that they exhibit synchronization. While in the aforementioned previous work it has been shown that coupling via Smorodinsky-Winternitz potentials leads to monofrequency synchronization, in the current work, it is shown that a Fokas-Lagerstrom potential coupling can establish multifrequency synchronization between two limit cycle oscillators. To this end, numerical simulation results are presented for the deterministic (unperturbed) and stochastic (perturbed) case. In particular, the relationship between the degree of synchronization and the coupling strength between the oscillators is examined. Multifrequency synchronization as such has not only applications in the design of electronic circuitry but is an important topic for understanding of polyrhythmic movements produced by humans.<br/><b>Keywords:</b>Synchronization, canonical-dissipative systems, limit cycle oscillators, Fokas-Lagerstrom potential, polyrhythmic movements</p> |
|  <p><b>Ekuma Thachuangtumle</b><br/>GICICRST1807074</p> | <p style="text-align: center;"><b>Choline Chloride based Electrolyte for Zinc-Air batteries</b></p> <p style="text-align: center;"><b>Ekuma Thachuangtumle</b><br/>Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand</p> <p style="text-align: center;"><b>Soorathep Kheawhom</b><br/>Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Zinc-air batteries are widely used and interesting because they have a high energy density. Also, zinc metal is inexpensive and abundant. Recently, neutral chloride electrolytes receive enormous attention as these neutral electrolytes do not suffer carbon dioxide poisoning. Nevertheless, the metal-air battery systems in neutral electrolyte chloride based have undesired side reaction leading to chlorine evolution during cell charging. Therefore, thiourea have been applied to suppress chlorine evolution. In this work, chloride-based electrolyte that made from choline chloride (ChCl) and zinc chloride (ZnCl<sub>2</sub>) is investigated. The activities of zinc deposition and stripping are examined as functions of ChCl, ZnCl<sub>2</sub>, and thiourea using cyclic voltammetry. The results showed that the electrolyte containing 2.5M ChCl, 0.6M ZnCl<sub>2</sub>, and 1000PPM thiourea exhibited highest zinc dissolution with small chlorine evolution.<br/><b>Keywords :</b> Zinc-air batteries, Choline Chloride, chloride-based electrolyte, chlorine evolution</p>   |
| <p><b>Somchai Wonsawat</b><br/>GICICRST1807075</p>   | <p style="text-align: center;"><b>Bioactive compounds from <i>Tectona grandis</i></b></p> <p style="text-align: center;"><b>Somchai Wonsawat</b></p>   |

Department of Applied Biotechnology, Naresuan University, Thambon  
Tha Pho, Phitsanulok, Thailand 65000

#### Abstract

##### Research objective

*Tectona grandis* is a fast growing shrub native to South East Asia and flourishing in wetlands and swampy zones. Extracts of *Tectona grandis* have been used in Chinese Traditional Medicine (TCM) as a febrifuge, a contrafibular and as a purgative. Our objective is to isolate, purify, identify the active chemical from this species. Previous studies of this species have been less conclusive. [1]

##### Methodology

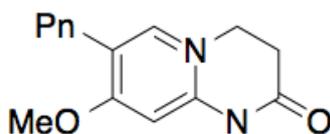
To isolate the active principles, the ground nether wood of *T. grandis* was subjected to sequential solvent elution, followed by chromatographic separation and counter-crystallization.

##### Findings

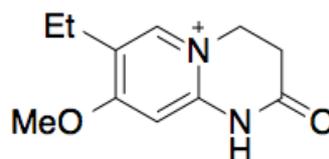
Two principles components were identified by analytical methods including 4D-NMR which we call as tectonamides A and B. Tectonamide A showed more better decamolar activity against HIV, PBS and the Dengue bacterium.

##### Research outcome

The structure of tectonamides A and B were determined to be unusual lactone structures. It is the first time that chemicals of this class have been isolated from *Tectona* genus. [2]



Tectonamide A



Tectonamide B

##### Future scope

The promising activity of tectonamides A and B respectively indicates the potential for new therapies and cures for the above mentioned diseases.

Keywords : Bioactiveness, tectona, lactone

## LISTENERS

Sun Myung Kim

Dept. of Energy and Environmental Engineering, Shinhan University, Rep. of Korea (South KOREA)  
GICICRST1807063