



**Global Research &  
Development Services**

## CONFERENCE PROCEEDINGS

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**KEYNOTE SPEAKER**



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**KEYNOTE SPEAKER**



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**KEYNOTE SPEAKER**



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<p><b>KanokphornSangkharak</b> <b>GICECG1611051</b></p>	<p><b>The Studies of Biochemical, Enzyme and Antioxidant Profile of Pineapple (Smooth Cayenne) Extracted</b></p> <p><b>KanokphornSangkharak</b> Department of Chemistry, Faculty of Science, Thaksin University, Phatthalung, 93110, Thailand skanokphorn@yahoo.com</p> <p><b>AwassadaOopahat</b> Department of Chemistry, Faculty of Science, Thaksin University, Phatthalung, 93110, Thailand</p> <p><b>TewanYunu</b> Department of Chemistry, Faculty of Science, Thaksin University, Phatthalung, 93110, Thailand</p> <p><b>NisaPichid</b> Department of Chemistry, Faculty of Science, Thaksin University, Phatthalung, 93110, Thailand</p> <p><b>ABSTRACT</b></p> <p>Pineapple (Smooth Cayenne) has been reported for their advantages. Therefore, several parts of pineapple including core, crown, stem and peel were selected and extracted. Pineapple samples were firstly extracted with water, methanol and buffer pH 3, 5, 7 and 9. Afterwards, crude extracts from each treatment was precipitated by 50% (v/v) acetone. The supernatant and precipitate were evaluated for bromelain and cellulase activity. In addition, antioxidant, phenolic content and flavonoid content were also investigated. The highest protein (5.6±0.4 mg), bromelain activity (5.81 unit) and cellulase activity (75.09 unit) was obtained from pineapple crown. However, highest antioxidant (59.92% radical scavenging), phenolic content (327.49±0.15 mg gallic acid equivalent/g dry extract) and flavonoid content (240.57±0.28 mg rutin/g dry extract) was observed from pineapple peel.</p> <p><b>Keywords</b> Antioxidant; Bromelain; Cellulase; Flavonoid; Phenolic compound; Smooth Cayenne</p>
	<p><b>Socio-Economic and Environmental Attributes of Waste Electrical and Electronic Equipment (WEEE) Recycling in Asia</b></p> <p><b>S.N.M.Menikpura</b> Sustainable Consumption and Production (SCP) Group, Institute for Global Environmental Strategies (IGES), 2108-11 Kamiyamaguchi, Hayama, Kanagawa 240-0115, Japan. samanthinir@yahoo.co.in</p>

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#### **Abstract**

The electronics industry leads the world's largest and fastest growing manufacturing sector and management of Waste Electrical and Electronic Equipment (WEEE) has become a prominent problem in the modern world. Most of the developing countries are improperly handled and managed WEEE that release toxic pollution harming the people and environment, and yield very low metal recovery rates. In some developed countries, like Japan, strategies have been adopted (e.g. the home appliance recycling law), and comprehensive policy mechanisms have been implemented, which aim to recuperate materials from WEEE, conserve resources, and control environmental pollution.

In this study, socio-economic and environmental impacts from end-of-life home appliances recycling (e.g. Washing machines, Refrigerators, Air conditioners and Televisions) was assessed in Fukuoka Prefecture under Japan's home appliances recycling law. Life cycle based methodology was developed for the assessment considering all the phases namely; collection, primary and secondary transportation, pre-processing (dismantling), recycling and material recovery. Net greenhouse gas (GHG) emission and net resource savings potentials were quantified as the key indicators to assess the major environmental impacts while green jobs creation and income based community well-being was quantified to assess the socio-economic attributes of end-of-life home appliances recycling. Further, recycling mechanism in India was assessed and the results obtained from the case studies was compared for identifying the most appropriate approach of recycling and supporting policy making process.



In the case of Japan, the results revealed that it is possible to prevent more than 50% of GHG emissions and 55-80% of abiotic resource consumption with respect to all kind WEEE recycling that would otherwise occur through the equivalent amount of materials production from conventional processes. Further, 165 employment opportunities have been created and annual income of 686 million Japanese yen can be generated due to handling and managing of 700,000 units of WEEE. In the case of India WEEE management activities are shown lower GHG emissions potential from recycling process and therefore, it would positively contribute for more GHG savings and fossil resource savings by recuperating significant amount of materials from WEEE. The authors argue that this kind of tangible information will be beneficial for decision and policy makers in Japan as well as other countries in strengthening and implementing appropriate legislation and policies.

**Keywords: Sustainability, Electronics, WEEE, Recycling, Climate change**

<p><b>Alaa M. A. Alassady</b> <b>GICECG1611052</b></p>	<p style="text-align: center;"><b>Using Environmental Education in Schools of Iraq</b></p> <p style="text-align: center;"><b>Prof. Alaa M. A. Alassady</b> <b>EFCODB- North oil company – Iraq</b> <b>aldrwah@yahoo.com</b> <b>aipc_iraq@hotmail.com</b></p> <p style="text-align: center;"><b>Mrs. Miaad Mustafa Alattar</b> <b>Women Dept. Head at EFCODB</b></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Environment is coming on the first issues of making sustainable Development real and not only a dream and in country like Iraq where 4 wars was happened in less than 40 years the damage on environment Was huge and have a big impact on the life there for that reasons this letter discussing the importance of putting the environment as a basic matter in the primary schools in the same importance of math. and art or music .This step will enhance the awareness between the children for the Environment and reflecting on the future of the Iraq environment and Environment education as well This issue takes its importance due to the absence of environment Interest in the schools studying materials in Iraq.</p>
<p><b>Swapnil Dubey</b> <b>GICECG1611053</b></p>	<p style="text-align: center;"><b>Innovative Hybrid Photovoltaic Thermal System for Co-Generation of Electricity and Heat</b></p> <p style="text-align: center;"><b>Swapnil Dubey</b> <b>Energy Research Institute @ NTU, Nanyang Technological University, 1 Cleantech Loop,</b> <b>06-04 Cleantech One, Singapore</b> <b>SDubey@ntu.edu.sg</b></p> <p style="text-align: center;"><b>C S Soon</b> <b>OMEGA SOLAR PTE LTD, 53 Ubi Ave 1, #03-41, PayaUbi Industrial Park, Singapore</b> <b>408934</b></p> <p style="text-align: center;"><b>Kenneth Ong</b> <b>OMEGA SOLAR PTE LTD, 53 Ubi Ave 1, 03-41, PayaUbi Industrial Park, Singapore</b> <b>408934</b></p> <p style="text-align: center;"><b>Khalis Nasir</b> <b>OMEGA SOLAR PTE LTD, 53 Ubi Ave 1, 03-41, PayaUbi Industrial Park, Singapore</b> <b>408934</b></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Generating electricity from solar photovoltaic (PV) power systems is continuously growing around the world. There are huge developments in the past years, much faster than all predictions made. Solar PV has also gained cost-competitiveness. At the same time, researchers are also focusing on improving the efficiency of PV system by using efficient materials as well as by removing the heat generated in PV module efficiently to operate it at lower temperature. The main focus area of this research to efficiently remove the heat generated during conversion of solar energy into electricity using photovoltaic (PV) module. The photovoltaic conversion efficiency of commercial available PV module varies in the range of 8%-20% depending on the type of solar cell materials used for the module construction, e.g. crystalline silicon, thin film, CIGS, organic, etc. During the conversion process, only a small fraction of the incident solar radiation is utilize by PV cells to produce</p>

	<p>electricity and the remaining is converted into waste heat in the module which causes the PV cell temperature to increase and its efficiency to drop. This thermal energy could be extract using air or water as a heat removal fluid to utilize in heating applications. The purpose of a solar photovoltaic module is to convert solar energy into electricity. The hybrid combination of photovoltaic module and thermal collector called Photovoltaic-thermal (PVT) module. Such PVT module combines a PV, which converts electromagnetic radiation (photons) into electricity, with a solar thermal module, which captures the remaining energy and removes waste heat from the PV module. Cooling of cells either by natural or forced circulation can reduce the PV cell temperature. The simultaneous cooling of the PV cells maintains their PV efficiency at a satisfactory level and offers a better way of utilizing solar energy by generating thermal energy as well. PVT system has higher overall efficiency as compared to separate PV and thermal collector. The heat output of a PVT module can be used for space heating or production of domestic hot water. This research presents an innovative design of top cooling Thermal Photovoltaic (T-PV) module and its performance under outdoor weather condition of Singapore. T-PV collector is designed to flow fluid over the top of PV panel through a very narrow gap between the solar lens. This process improves heat removal process from PV panel, and hence, improves the electrical output of PV panel as compared to other PVT collector available in the market. By flowing the water from top of the PV panel will also provide better thermal efficiency. A 12kW T-PV test system has been installed at rooftop of one of the commercial building in Singapore. The system was designed to generate higher electrical power as compared to standard PV systems and at same time generate heat in the form of hot water for additional usage. The storage tank, sensors, pump, flow meters, data logger and controls, have also been installed to test and compare the performance improvement of system. Performance analysis of T-PV collector system has been evaluated at different load and loading conditions under the tropical climatic conditions of Singapore. It was found that T-PV module could produce additional electrical power at an average efficiency of 14.3%, as compared to standard PV panel of same capacity by operating at lower temperature. In addition to electricity, T-PV panel also generate the hot water up to 60 deg C at an average thermal efficiency of 56% for usage in residential and commercial buildings. The overall system efficiency was 70.3%.</p> <p><b>Keywords:</b> Photovoltaics; electricity generation; thermal efficiency; PV efficiency; solar energy.</p>
<p><b>Er. Amar NathBhadra</b>  <b>GICECG1611054</b></p>	<p style="text-align: center;"><b>Green Power towards Sustainability</b></p> <p style="text-align: center;"><b>Er. Amar NathBhadra</b>  <b>Former Dy, Director of Boilers, W.B</b>  <b>amarnathhow@yahoo.com</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>In view of potential threat of global warming, strong evidence of climate change along with fast depletion of natural resources, Green Technology options have become the major promising tool to sustain economic activity in view of Digital/Startup India Missions. The concern for climate change, the nature has evolved pressure on ecology and needed to strike a balance between economic growth and environment degradation for the protection of ecology. With a view to reduce utilization of nature resources owing to their rampant use in power sector to generate power, attention has to be focused to switch over to Renewable power i.e. Green Technology options as it do not emit GHGs in the atmosphere to maintaining ecology &amp; their effective balance. The Scientist &amp; Technologist should be conscious for use of natural resources in order to hold the temperature below 20C. Therefore, all resources are to be used judiciously for power generation to restrict the</p>



	<p>concentration of GHG. In present energy scenario, the Energy Security has gained topmost priority for sustainable power generation for entry to the orbit of Developed Nation. The concept of Green Energy, therefore, enters into the picture with its firm footing and is gaining popularity amongst the power plant Developers and green steps for cynosure. In today's age of climate change and fluctuation of energy prices, it is crucial that electrical energy generation should be way forward through R.E. Sector &amp; diversified energy - mix, integrated with S.C.T &amp; C.C.S. technology as it offers higher efficiency energy optimizations. Green Technology options are designed to reduce the overall impact of climate change along with enhanced awareness for optimal utilization of natural resources due to their finite stock on our planet Earth. The authors dealt areas that stand out techno-economic feasibility, effective use for power generation and attainment for Energy Security with a focus to making India to be a developed nation through DIGITAL INDIA Campaign.</p>
 <p><b>WiraSetya Dharma</b>  <b>GICECG1611055</b></p>	<p><b>“JA9OAN SEBAYA” as an Agent of Change in Dealing with the Threat of Demographic Bonus in 2020</b></p> <p><b>WiraSetya Dharma</b>          Islamic University of Indonesia, Yogyakarta, Indonesia          wirasetya1@yahoo.co.id</p> <p><b>DewiIsmaRikyaIhsan</b>          Islamic University of Indonesia, Yogyakarta, Indonesia          rikyadewi95@gmail.com</p> <p><b>ABSTRACT</b></p> <p>This paper presents solution to decrease the number of active smokers on adolescent in Indonesia by creating “Ja9oan Sebaya” as the agent of change. Indonesia will have a huge number of productive age populations (15-64) of about 60% or 160-180 millions of population in 2020 called as a demographic bonus. It creates a window of opportunity for Indonesia to strengthen the national development especially in industrial sectors. The number of active smokers among adolescents in Indonesia increased year by year. Teenagers in the present are the candidate of productive age population in 2020-2030. According to research conducted by The Ministry of Health in 2013, the smoking behaviour of population aged 15 in Indonesia increases 2.1 % from 34.2 %. If the prevalence of smoking behaviour continue to rise, it will irrefutably affect the productivity of the young population. “Ja9oan Sebaya” attempts to deliver the solution to mitigate the smoking behaviour and manage the high population of active smokers by appointing adolescent as a peer counsellors for its peer group. The peer group will be given information about the danger of smoking and trained to be the peer counsellors to change stigma against smoking habit.</p> <p><b>Keywords : Demographic bonus, smoking behaviour, productivity, adolescent, peer counsellors</b></p>
 <p><b>DewiIsmaRikya</b>  <b>GICECG1611056</b></p>	<p><b>“JA9OAN SEBAYA” as an Agent of Change in Dealing with the Threat of Demographic Bonus in 2020</b></p> <p><b>WiraSetya Dharma</b>          Islamic University of Indonesia, Yogyakarta, Indonesia          wirasetya1@yahoo.co.id</p> <p><b>DewiIsmaRikyaIhsan</b>          Islamic University of Indonesia, Yogyakarta, Indonesia</p>

	<p style="text-align: center;">rikyadewi95@gmail.com</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>This paper presents solution to decrease the number of active smokers on adolescent in Indonesia by creating “Ja9oan Sebaya” as the agent of change. Indonesia will have a huge number of productive age population (15-64) of about 60% or 160-180 millions of population in 2020 called as a demographic bonus. It creates a window of opportunity for Indonesia to strengthen the national development especially in industrial sectors. The number of active smokers among adolescents in Indonesia increased year by year. Teenagers in the present are the candidate of productive age population in 2020-2030. According to research conducted by The Ministry of Health in 2013, the smoking behaviour of population aged 15 in Indonesia increases 2.1 % from 34.2 %. If the prevalence of smoking behaviour continue to rise, it will irrefutably affect the productivity of the young population. “Ja9oan Sebaya” attempts to deliver the solution to mitigate the smoking behaviour and manage the high population of active smokers by appointing adolescent as a peer counsellors for its peer group. The peer group will be given information about the danger of smoking and trained to be the peer counsellors to change stigma against smoking habit.</p> <p><b>Keywords :</b> Demographic bonus, smoking behaviour, productivity, adolescent, peer counsellors</p>
<p><b>ShaunakJayeshkumarTalati</b>  <b>GICECG1611060</b></p>	<p style="text-align: center;"><b>A Novel Approach to Overcome Industrial Heat Wastage to Environment</b></p> <p style="text-align: center;"><b>ShaunakJayeshkumarTalati</b>  <b>PanditDeendayal Petroleum University, India</b>  <b>shaunaktalati@ymail.com</b></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Sustainable waste management is a goal that all industries must strive to maintain. In developing countries like India, the hot flue gas emissions through chimneys by various industries should be dealt with a pragmatic and feasible solution. In furnaces that run continuously, heat gets exhausted or wasted in a significant quantity through chimneys. Waste heat is generated by the way of fuel combustion, and then dumped into the environment even though it could still be reused for some useful and economic purpose. To overcome such wastage, implementing the waste heat recovery plant by Organic Rankine Cycle (ORC) technology is proven to be effective. ORC is thermodynamic process where in heat energy is transformed into Electrical power with the help of a liquid refrigerant which boils at low input temperature and works in a closed cycle. Research shows that in glass industry the hot flue gases that are exhausted from the furnace at about 300oC to 450oC temperature to the stack input produces power ranging from 500KWe to 5000KWe. CO2 emissions can also be reduced by about 4% by implementing this project. Industries like glass , cement ,steel plants, etc can all improve their global energetic efficiency by installing the ORC modules which are much compact in design compared to other power plants to simultaneously decrease both pollution and energy bills</p>
<p><b>Akanbi C.O.</b>  <b>GICECG1611062</b></p>	<p style="text-align: center;"><b>A Personalised Food Recommendation Mobile Framework Using User Preference Algorithm</b></p> <p style="text-align: center;"><b>Akanbi C.O.</b>  <b>Department of Information and Communication Technology, Osun State University, Osogbo, Nigeria</b></p>

	<p style="text-align: center;"><b>Oladeji D.O</b></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The continuous rapid development and improvement in Information and Mobile technologies has now made it possible to have Personalized Recommendation System on basic necessities of life such as food, clothes and shelters. Although publicly available food recommendation tools exist on the internet, majority of which fails to satisfy the uses demands and preferences considering users interest, medical history, and balance diet. In addition, users don't normally have luxurious of time to access their computer systems to check for food recommendation every times on their devices, Consequently, A personalized mobile service framework that addresses above limitations is presented in this paper. The food recommendation architecture proposed uses preference algorithm. The design implemented on an Android-based mobile platform is able to recommend and notify suitable food items for the user automatically.</p>
<p><b>Swapnil Dubey</b>  <b>GICECG1611053</b></p>	<p style="text-align: center;"><b>Innovative Hybrid Photovoltaic Thermal System for Co-Generation of Electricity and Heat</b></p> <p style="text-align: center;"><b>Swapnil Dubey</b>  Energy Research Institute @ NTU, Nanyang Technological University, 1 Cleantech Loop,  06-04 Cleantech One, Singapore 637141  swapnil2081@gmail.com  sdubey@ntu.edu.sg</p> <p style="text-align: center;"><b>C S Soon</b>  Omega Solar Pte Ltd, 53 Ubi Ave 1, #03-41, PayaUbi Industrial Park, Singapore 408934</p> <p style="text-align: center;"><b>Kenneth Ong</b>  Omega Solar Pte Ltd, 53 Ubi Ave 1, #03-41, PayaUbi Industrial Park, Singapore 408934</p> <p style="text-align: center;"><b>Khalis Nasir</b>  Omega Solar Pte Ltd, 53 Ubi Ave 1, #03-41, PayaUbi Industrial Park, Singapore 408934</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Generating electricity from solar photovoltaic (PV) power systems is continuously growing around the world. There are huge developments in the past years, much faster than all predictions made. Solar PV has also gained cost-competitiveness. At the same time, researchers are also focusing on improving the efficiency of PV system by using efficient materials as well as by removing the heat generated in PV module efficiently to operate it at lower temperature. The main focus area of this research to efficiently remove the heat generated during conversion of solar energy into electricity using photovoltaic (PV) module. The photovoltaic conversion efficiency of commercial available PV module varies in the range of 8%-20% depending on the type of solar cell materials used for the module construction, e.g. crystalline silicon, thin film, CIGS, organic, etc. During the conversion process, only a small fraction of the incident solar radiation is utilize by PV cells to produce electricity and the remaining is converted into waste heat in the module which causes the PV cell temperature to increase and its efficiency to drop. This thermal energy could be extract using air or water as a heat removal fluid to utilize in heating applications. The purpose of a solar photovoltaic module is to convert solar energy into electricity. The hybrid combination of photovoltaic module and thermal collector called Photovoltaic-thermal (PVT) module. Such PVT module combines a PV, which converts electromagnetic radiation (photons) into electricity, with a solar thermal module, which captures the remaining energy and removes</p>

waste heat from the PV module. Cooling of cells either by natural or forced circulation can reduce the PV cell temperature. The simultaneous cooling of the PV cells maintains their PV efficiency at a satisfactory level and offers a better way of utilizing solar energy by generating thermal energy as well. PVT system has higher overall efficiency as compared to separate PV and thermal collector. The heat output of a PVT module can be used for space heating or production of domestic hot water.

This research presents an innovative design of top cooling Thermal Photovoltaic (T-PV) module and its performance under outdoor weather condition of Singapore. T-PV collector is designed to flow fluid over the top of PV panel through a very narrow gap between the solar lens. This process improves heat removal process from PV panel, and hence, improves the electrical output of PV panel as compared to other PVT collector available in the market. By flowing the water from top of the PV panel will also provide better thermal efficiency. A 12kW T-PV test system has been installed at rooftop of one of the commercial building in Singapore. The system was designed to generate higher electrical power as compared to standard PV systems and at same time generate heat in the form of hot water for additional usage. The storage tank, sensors, pump, flow meters, data logger and controls, have also been installed to test and compare the performance improvement of system. Performance analysis of T-PV collector system has been evaluated at different load and loading conditions under the tropical climatic conditions of Singapore. It was found that T-PV module could produce additional electrical power at an average efficiency of 14.3%, as compared to standard PV panel of same capacity by operating at lower temperature. In addition to electricity, T-PV panel also generate the hot water up to 60 deg C at an average thermal efficiency of 56% for usage in residential and commercial buildings. The overall system efficiency was 70.3%.

**Keywords:** Photovoltaics; electricity generation; thermal efficiency; PV efficiency; solar energy.



HendMandour  
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**Genetic Analysis an in Vitro Selection for Drought Tolerance in Wheat (*Triticumaestivum* L.)**

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**ABSTRACT**

Selection for drought tolerance of fifteen wheat genotypes (five parents and their ten F1 hybrids) was performed under laboratory .Three different callus induction media were used to determine the optimum hormone balance for callus induction from mature embryos of wheat genotypes and also to study the genetic response of the studied wheat genotypes to callus induction. MS media supplemented with different concentrations of poly ethylene glycol (PEG) were used to evaluate the obtained calli for drought tolerance. Then the drought stressed calli were then transferred to plant regeneration medium for studying their ability to regenerate.

M2 medium (2mg/l 2,4D+300 mg/l casein hydrolysate) gave the highest callus induction frequency (85.5%) followed by M1 (2mg/l 2,4D) medium (85%) and M3 (2mg/l 2,4D +4 mg/l AgNo3) medium (81.6%). The differences between the three callus induction media were significant for all characters except callus induction frequency (CIF %) and M2 medium was the best media for callus induction.

Regeneration was obtained in all genotypes under 0, 5 and 10% PEG, and in most genotypes under 15% PEG, but was completely absent under 20% PEG.

	<p>Data obtained revealed that the parental cultivars, Giza168 and Sids13 and their hybrid (Giza168 xSids13) were the most drought tolerant genotypes, while the parent Misr1 was the most sensitive to drought.  A set of ISSR markers for drought tolerance and (BSA) approach were used in molecular studies. Five tolerant molecular markers appeared in positive molecular markers for drought tolerance.</p>
<p><b>Mana Tarjoman</b>  <b>GICICRST1611052</b></p>	<p style="text-align: center;"><b>The Fuzzy Approach for Content based Human Brain Magnetic Resonance Images Retrieval with Relevance Feedback</b></p> <p style="text-align: center;"><b>Mana Tarjoman</b>  Department of Engineering  Abhar Branch, Islamic Azad University, Abhar, Iran  manatarjoman@gmail.com</p> <p style="text-align: center;"><b>SeyyedMortezaFattahi</b>  Ministry of Cooperatives Labor and Social Welfare  seyyedmortezafattahi@yahoo.com</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Content-based image retrieval (CBIR) has turned into an important and active potential research field with the advance of multimedia and imaging technology. It makes use of image features, such as color, texture and shape, to index images with minimal human intervention. A CBIR system can be used to locate medical images in large databases. In this paper we propose a CBIR system which describes the methodology for retrieving digital human brain magnetic resonance images(MRI)based on textural features and the Adaptive Neuro-Fuzzy Inference System (ANFIS) learning to retrieve similar images from database in two categories: normal and tumoral. A fuzzy classifier has been used, because of the uncertainty in the results of classifier and capacity of learning. Adaptive Neuro-Fuzzy Inference System (ANFIS) is a good candidate for our categorization problem. Our proposed CBIR system can locate a query image in the category of normal or tumoral images in the online retrieval part. Finally, using a relevance feedback, we improve the effectiveness of our retrieval system. This research uses the knowledge of the CBIR approach to the application of medical decision support and discrimination between the normal and abnormal medical images based on features. We present and compare the results of the proposed method with the CBIR systems used in recent works. The experimental results indicate that the proposed method is reliable and has high image retrieval efficiency compared with the previous works.  <b>Keywords:</b> Content based image retrieval; Feature extraction; ANFIS; Magnetic resonance image</p>
 <p><b>Harminder Singh</b>  <b>GICICRST1611053</b></p>	<p style="text-align: center;"><b>Performance of Cold Spray Coated Alloy in Corrosive Conditions</b></p> <p style="text-align: center;"><b>Harminder Singh</b>  Assistant Professor in Mechanical Engineering, Guru Nanak Dev University, Regional Campus, Jalandhar, Punjab-144007, India  harminder10@gmail.com  harminder.ecej@gndu.ac.in</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Waste to energy (WTE) plant components are working in highly corrosive conditions, and</p>

	<p>thus, results in their failure and low energy recovery efficiency of the plant. It is noticed that even superalloys are unable to perform efficiently in the presence of chlorine and its compounds in the flue gases of this energy recovery plant. The present study is planned to test the corrosion resistant performance of coating fabricated on Ni-based superalloy by cold spray process. This newly developed coating-substrate combination is not reported before in literature, and results indicated that coating slow down the degradation of the substrate alloy in WTE plant conditions.</p>
	<p style="text-align: center;"><b>The Fuzzy Approach for Content based Human Brain Magnetic Resonance Images Retrieval with Relevance Feedback</b></p> <p style="text-align: center;"><b>Mana Tarjoman</b>          Department of Engineering, Abhar Branch, Islamic Azad University, Abhar, Iran          manatarjoman@gmail.com</p> <p style="text-align: center;"><b>SeyyedMortezaFattahi</b>          Ministry of Cooperatives Labor and Social Welfare          seyyedmortezafattahi@yahoo.com</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Content-based image retrieval (CBIR) has turned into an important and active potential research field with the advance of multimedia and imaging technology. It makes use of image features, such as color, texture and shape, to index images with minimal human intervention. A CBIR system can be used to locate medical images in large databases. In this paper we propose a CBIR system which describes the methodology for retrieving digital human brain magnetic resonance images(MRI)based on textural features and the Adaptive Neuro-Fuzzy Inference System (ANFIS) learning to retrieve similar images from database in two categories: normal and tumoral. A fuzzy classifier has been used, because of the uncertainty in the results of classifier and capacity of learning. Adaptive Neuro-Fuzzy Inference System (ANFIS) is a good candidate for our categorization problem. Our proposed CBIR system can locate a query image in the category of normal or tumoral images in the online retrieval part. Finally, using a relevance feedback, we improve the effectiveness of our retrieval system. This research uses the knowledge of the CBIR approach to the application of medical decision support and discrimination between the normal and abnormal medical images based on features. We present and compare the results of the proposed method with the CBIR systems used in recent works. The experimental results indicate that the proposed method is reliable and has high image retrieval efficiency compared with the previous works.</p> <p><b>Keywords:</b> Content based image retrieval; Feature extraction; ANFIS; Magnetic resonance image</p>
 <p style="text-align: center;"><b>Mayeen Uddin Khandaker</b></p>	<p style="text-align: center;"><b>Heavy Metals in Human Teeth; A Bio-indicator of Metal Exposure to Environmental Pollution and Some Factors Influencing their Concentrations</b></p> <p style="text-align: center;"><b>KhandokerAsaduzzaman</b>          Department of Physics, Faculty of Science, University of Malaya, Kuala Lumpur, 50603, Malaysia</p> <p style="text-align: center;"><b>Mayeen Uddin Khandaker</b>          Department of Physics, Faculty of Science, University of Malaya, Kuala Lumpur, 50603, Malaysia          mu_khandaker@um.edu.my</p>

<p><b>GICICRST1611056</b></p>	<p style="text-align: center;"><b>Yusoff Bin Mohd Amin</b>          Department of Physics, Faculty of Science, University of Malaya, Kuala Lumpur, 50603, Malaysia</p> <p style="text-align: center;"><b>MohideenSalihuFarook</b>          Department of Restorative Dentistry, Faculty of Dentistry, University of Malaya, Kuala Lumpur, 50603, Malaysia</p> <p style="text-align: center;"><b>NurulAtiqahBintiBaharudin</b>          Department of Physics, Faculty of Science, University of Malaya, Kuala Lumpur, 50603, Malaysia</p> <p style="text-align: center;"><b>David Andrew Bradley</b>          Department of Physics, University of Surrey, Guildford, Surrey GU4 8JU, UK</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Human beings are presently exposed to significant levels of environmental heavy metals from rapid urbanization and large-scale industrial activities. Since the metals deposited in tooth dentin during formation and mineralization processes are retained to a large extent, they could be used to trace the record of human exposure to metals. This is because, unlike bone, where the mineral phase is subject to turnover, tooth dentin once formed provides a permanent, cumulative and relatively sound record of environmental exposure to heavy metals. In our research, a total of 50 separate human teeth from patients with variable age, gender, occupation, dietary habits, residency, medical history, etc. were collected with help of the Dental Faculty of the University of Malaya. The teeth were examined using inductively coupled plasma-mass spectrometry (ICP-MS). The concentrations of lead (Pb), mercury (Hg), cadmium (Cd), chromium (Cr), arsenic (As), copper (Cu), iron (Fe), manganese (Mn), bismuth (Bi), barium (Ba), zinc (Zn), strontium (Sr), antimony (Sb), aluminum (Al), tin (Sn) and magnesium (Mg) were analyzed. We found them in trace amount in almost all teeth samples, with the following concentration order <math>As &lt; Mn &lt; Ba &lt; Bi &lt; Cu &lt; Cr &lt; Pb &lt; Fe &lt; Zn &lt; Hg &lt; Sb &lt; Al &lt; Sr &lt; Mg &lt; Sn</math>. The results showed that accumulation of Pb, Hg, As, Cr, Mn, Sr, Ba, Sb, Cu, Zn, Mg and Sn increases with increasing age; however no such trend was noticeable for the other metals. Among the ethnic groups, Chinese teeth showed slightly higher metal concentrations than the Indian and Malay teeth. Generally the female tooth dentin showed higher concentrations than male dentin. The accumulation of metals in different types of teeth varied. Relatively higher concentrations of Hg, Bi, Cu and Sn were found in molars, while Pb, Sr, Sb, Fe, Mg and Zn were relatively higher in incisors. Some elevated levels of concentrations of heavy metals in the tooth dentin reflect the pollution from industrial emissions and urbanization. Human tooth dentin therefore can be used to obtain chronological information of heavy metal exposure as a reliable bio-indicator of environmental pollution by heavy metals.</p>
<p><b>Ibrahim Issa</b>  <b>GICICRST1611058</b></p>	<p style="text-align: center;"><b>Nitrification Inhibitor and Nitrate Affect the Root Colonization of ViciaFaba by Rhizobium Leguminosarum</b></p> <p style="text-align: center;"><b>H.E.A.F. BayoumiHamuda</b>          Environmental Protection Engineering Institute, Óbuda University, Budapest, Hungary          hosameaf@gmail.com</p> <p style="text-align: center;"><b>Ibrahim Issa</b></p>

	<p>Soil and Water Department, Agriculture Faculty, Sirte University, Sirte, Libya Iraissaa@yahoo.com</p> <p>H. Abdorhim Botany Department, Faculty of Science, Sebha University, Sebha, Libya zallaaftimer@yahoo.com</p> <p><b>ABSTRACT</b></p> <p>Little informations concern the effects of different nitrate sources at certain concentrations known in the presence of nitrification inhibitors of herbicide origin to inhibit the nodule formation and functioning on root colonization of legume plant by microsymbiont Rhizobium. Laboratory and greenhouse pot experimental studies were conducted to determine the effect of two nitrification inhibitors: 2-chloro-6-(trichloromethyl) pyridine (Nitrapyrin) and ammonium thiosulfate on symbiotic N<sub>2</sub>-fixation in faba bean (<i>Vicia faba</i>) nodules. Plant dry weight was used to assess the effect of the nitrification inhibitors on the Rhizobium - faba bean symbiosis. The results of pot experiment indicated that this study investigated the potential differences between two <i>R. leguminosarum</i> strains in the presence of two herbicides which functioning as nitrification inhibitors on root colonization of faba bean at different levels of various nitrate sources. Secondly, this study evaluated the effects of 20 and 50 mg N/kg soil on root colonization of faba bean by the rhizobial strains. The presence of low concentration of NO<sub>3</sub>-N increased the rhizobial population, the root length colonized and nodule number as well. The strain GH130 was more sensitive to the two nitrification inhibitors and inorganic N forms except calcium nitrate than Lóbab Z strain. Results demonstrate that the two herbicides decreased the concentration of nitrate in the soil. Keywords: Nitrification inhibitors, nitrate sources, root colonization, <i>Vicia faba</i>, <i>Rhizobium leguminosarum</i></p>
 <p>Vida Jodaecian GICICRST1611059</p>	<p>Nature of C–P Bonding in 2-Thienylcarbonylmethylene–Triphenylphosphorane Ylide: A Theoretical Study</p> <p>Vida Jodaecian Department of Chemistry, Islamshahr Branch, Islamic Azad University, Tehran, Iran hvidajodaian@yahoo.co.nz</p> <p>Behzad Sani Department of Agronomy, Shahr-e-Qods Branch, Islamic Azad University, Tehran, Iran dr.b.sani@gmail.com</p> <p>Mehdi Bayat Department of Chemistry, Buali Sina University, Hamadan, Iran mbayat@basu.ac.ir</p> <p><b>ABSTRACT</b></p> <p>The electronic and molecular structure of the 2-Thienylcarbonylmethylene–triphenylphosphorane Ylide has been investigated at the DFT level using BP86/def2-SVP level of theory. The nature of the C–P bond was analyzed with charge and energy decomposition methods. The EDA suggests that C–P bonding attractive interactions which provide about 53% from the orbital term while ~ 47% comes from electrostatic attraction <math>\Delta E_{\text{elstat}}</math>. The applicability of the ETS-NOCV scheme is demonstrated for the Ylide and it's</p>



	<p>shown that the <math>\sigma</math> term arises about 77% through C-P <math>\sigma</math> interaction while a smaller part (~17%) comes from C-P <math>\pi</math> interaction.  <b>Keywords:</b> Nature of C-P Bonding, 2-Thienylcarbonylmethylene, Triphenylphosphorane Ylide.</p>
 <p><b>Behzad Sani</b> GICICRST1611060</p>	<p><b>Increasing of Ultra Speed Seedling (USS) Growth Vigour by Humic Acid in Maize (<i>Zea mays</i> L.) Seed's</b></p> <p><b>Behzad Sani</b> Department of Agronomy, Shahr-e-Qods Branch Islamic Azad University, ,Tehran, Iran dr.b.sani@gmail.com</p> <p><b>Vida Jodaieian</b> Department of Chemistry, Islamshahr Branch, Islamic Azad University Tehran, Iran hvidajodaian@yahoo.co.nz</p> <p><b>ABSTRACT</b></p> <p>An experiment was carried out at the Plant Physiology Laboratory in 2016 by a completely randomized design with three replications on germination in maize (<i>Zea mays</i> L.) seed's. Seed viability was determined by Tetrazolium test method. The factor of study included different concentrations of humic acid (0, 10 and 20 ml/L). The characters measured were: germination percentage, seedling dry weight and seedling vigour. The results showed that effect of hydro priming significant on germination percentage, seedling dry weight, and seedling vigour in <math>P \leq 0.05</math>. Mean comparison showed that the highest germination percentage (80 %), seedling dry weight (2.51 g) and seedling vigour (200.80) were achieved by 20 ml/L treatment.  <b>Keywords:</b> Humic acid, Seedling, Seedling vigour and Maize.</p>
 <p><b>Mansour Alabdulaziz</b> GICICRST1611061</p>	<p><b>The Effect of Technology on the Mathematical Learning of Saudi Primary Students with Dyscalculia</b></p> <p><b>Mansour Alabdulaziz</b> Durham University, United Kingdom m.alabdulaziz@hotmail.com</p> <p><b>ABSTRACT</b></p> <p>This paper will investigate teachers' usage of technology with dyscalculia students, and their perceptions about using this technology in Saudi Arabia. I wanted to investigate the effects of applying technology to the mathematical problem-solving abilities of primary school students who have dyscalculia. Overall, the research aims to encourage the use of technology in schools in order to help pupils with dyscalculia in Saudi Arabia so that they may achieve their desired outcomes, as well as continue to improve their abilities. I used semi-structured interviews and observations to collect my data, interviewing and observing four mathematics teachers and 12 students at elementary school. Observations were crucial for seeing the effect of technology on the mathematical learning of Saudi primary grade students with dyscalculia. However, observation may not be enough. Because I wanted to investigate teachers' usage of technology with dyscalculia students, and their perceptions about using it, face-to-face interviews was probably the best approach. The study found evidence to suggest that there were positive effects using technology on the mathematical learning of Saudi primary grade students with dyscalculia. These include technologies which can give meanings to numbers, which can remove any necessary barriers to learning and enhance strengths for students with dyscalculia, boosting students' confidence, or which helps</p>

	<p>students to remember what they learned (because the brain can more easily understand and remember visual information). Although this study has confirmed the positive effects of technology on student learning, one of these teachers did not use it with his students for three reasons. First, the teacher simply needed to be trained to use the technology. Furthermore, there is no reward system in place for innovative teaching. Additionally, he thought that the traditional blackboard would make complicated problems more solvable. But now he has changed his mind about the value of technology and began using it. Further study could focus on the obstacles of using technology on primary schools to help students with dyscalculia in the Saudi Arabia because this study found evidence to suggest that there are a variety of obstacles, including the lack of teacher training in using it, especially with those pupils who have dyscalculia.</p>
<p><b>Ibrahim Issa</b> <b>GICICRST1611062</b></p>	<p style="text-align: center;"><b>Measurement of Copper and Zinc Concentrations in two Flood-Plain Soils</b></p> <p style="text-align: center;"><b>Ibrahim Issa</b> Agriculture Faculty, Soil and Water Department, Sirte University, Sirte - Libya, ibrissaa@yahoo.com</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Soil samples were collected in the east-central Hungary of Tisza River flood-plain areas, two flood-plain soil samples were used in this study, which will be referred as Tivadar and Gergelyugornya. Tivadar is a small village close to the River Tisza that has low degree of anthropogenic impact, upstream River Szamos mouth. Gergelyugornya is in a direct line from the Szamos-Tisza connection (about 100 m in the flow direction). The River Szamos is of essential relevance, because there has been a very harmful cyanide and heavy metal pollution. Soils of 10g were packed in plastic bags and in the laboratory at 25 °C were incubated for 1,7,14,21 days under water-flooding incubation. Following the incubation and after applying nitric acid solution we measured Cu and Zn concentrations of the soil samples by means of an atomic absorption spectrophotometer. It has been found that during soil incubation of three weeks the time has effect and the concentrations were significantly higher in Gergelyugornya compared to Tivadar soil samples. The obtained data showed the concentration phenomena under different incubation period and this phenomenon was more pronounced at higher incubation period (2 weeks) than the lowest one.</p> <p><b>Keywords:</b> Copper, Zinc, Pollutants, Flood-Plain Soil, HNO<sub>3</sub></p>
<p><b>Ahmad SamimRanjbar</b> <b>GICICRST1611063</b></p>	<p style="text-align: center;"><b>A Study of Cost Benefit Analysis on Kabul City Inner Ring Road</b></p> <p style="text-align: center;"><b>Ahmad SamimRanjbar</b> Kumamoto University, Japan samimranjbar8781@gmail.com</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Kabul the capital of Islamic republic of Afghanistan, located at the east part of country, a city with around five million populations and high travel demand, due to dramatic increasing of population since 2001 it is suffering from high congestion during the peak hours.</p> <p>A series of mountains divide Kabul city in to east and west part, existence of commercial zones with high traffic demand in the city center and mountainous type of city are the main</p>

	<p>cause of congestion in the CBD areas, moreover there is no inner ring road in order to disperse the traffic flow from city center, some trips are passing through the city center which they do not need to if they had another alternative. This research is focus on effect of inner ring road on mitigation of traffic congestion from the CBD areas; a study of cost benefit analysis was done for three different alternatives of ring road.</p> <p>JICA person trip survey which was done in 2008 by japan international cooperation agency has been used for this study, travel demand for Kabul city has been analyzed and forecasted for future 2015 and 2025, three different alternative of ring road with distinct diameter has been introduced and a study of cost benefit analysis was done for each alternatives in order to find the one with high efficiency, in this study three component of benefit which is travel time reduction, travel distance reduction and accident reduction were considered.</p> <p>Finding of this research shows that alternative two which cover most part of CBD area has a high benefit cost ratio of 17 than other alternatives, and mitigate the traffic congestion from the most congested links, for this study alternative two has been introduced to the current road network.</p> <p><b>Key words: Cost, Benefit, Ring Road, Kabul, Afghanistan</b></p>
<p><b>Mursal Ibrahim Zada</b>  <b>GICICRST1611064</b></p>	<p><b>Importance of Road Infrastructure on the People Live in Afghanistan</b></p> <p><b>Mursal Ibrahim Zada</b>  Graduate from Kabul University, Kabul, Afghanistan  mursal_ashraf@yahoo.com</p> <p><b>ABSTRACT</b></p> <p>Since 2001, the new Government of Afghanistan has put the improvement of transportation in rural area as one of the key issues for the development of the country. Since then, about 17,000 km of rural roads were planned to be constructed in the entire country. This thesis will assess the impact of rural road improvement on the development of rural communities and housing facilities. Specifically, this study aims to show that the improved road has leads to an improvement in the community, which in turn has a positive effect on the lives of rural people. To obtain this goal, a questionnaire survey was conducted in March 2015 to the residents of four different districts of Kabul province, Afghanistan, where the road projects were constructed in recent years. The collected data was analyzed using on a regression analysis considering different factors such as land price, waiting time at the station, travel time to the city, number of employed family members and so on. Three models are developed to demonstrate the relationship between different factors before and after the improvement of rural transportation. The results showed a significant change positively in the value of land price and housing facilities, travel time to the city, waiting time at the station, number of employed family members, fare per trip to the city, and number of trips to the city per month after the pavement of the road. The results indicated that the improvement of transportation has a significant impact on the improvement of the community in different parts, especially on the price of land and housing facility and travel time to the city.</p> <p><b>Key Words: Accessibility, Afghanistan, housing facility, Rural Area, land price.</b></p>
<p><b>RoienQiam</b>  <b>GICICRST1611065</b></p>	<p><b>Traffic Demand Assessment for Kabul City</b></p> <p><b>RoienQiam</b>  Dep. Civil and Environmental Engineering, Kumamoto University, Japan  Qiam.8590@gmail.com</p> <p><b>SHOSHI Mizokami</b></p>

	<p style="text-align: center;"><b>ABSTRACT</b></p> <p>Transportation is the basic requirement connection of human being in today's world which is generated from the activities not available in the neighborhood of residence and the person has to travel to another location for that specific activity. Kabul is one of the fast growing cities in the region since 2002 with the establishment of new government. Migration causing by unemployment and poor quality of life in rural areas forces the people to settle in Kabul city despite having transportation and planning problems, contributing in traffic and transportation problem of Kabul city. According to the master plan of Kabul city, population has grown from 2 million to 4.2 million in 2011. However there is not a sufficient transportation system for people. Public transport is at the poorest level without prompt consideration of government to solve this problem.</p> <p>Kabul city lacking proper transportation system and public transportation without any models that can predict the existing situation of transportation and there is no proper strategic plan for the future of the city, therefore a comprehensive study of existing situation of traffic and preparation of traffic demand forecasting models that can evaluate different scenarios of the city's growth and propose alternative sustainable transportation systems for future is most essential to overcome the transportation problems.</p> <p>In this research JICA (Japan International Cooperation Agency) PT survey which was conducted on 2008 was used, in this survey the people travel pattern were asked during their travel, the overall existing transportation system and deficiencies are analyzed, travel behavior of the Kabul residents with respect to socio-economic characteristics and travel demand model has been analyzed for the Kabul city residence, based on finding of this research a policy has been introduced on short term and long term transportation system of Kabul city.</p> <p><b>Key words: Public Transportation, Travel demand, Kabul, Afghanistan</b></p>
 <p>A.P. Catabay GICICRST1611066</p>	<p style="text-align: center;"><b>Application of Capillary Electrophoresis in Enantiomeric Separation of Anticonvulsant Drugs using Native Cyclodextrins</b></p> <p style="text-align: center;">A.P. Catabay College of Pharmacy, De La Salle Health Sciences Institute, Cavite, Philippines 1004 apcatabay@dlshsi.edu.ph</p> <p style="text-align: center;">N.Quiming College of Arts and Science, University of the Philippines Manila, Taft Ave. Manila 1000</p> <p style="text-align: center;">K. Jinno School of Materials Science, Toyohashi University of Technology, Toyohashi 441-8580 Japan</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The separation of enantiomers by capillary electrophoresis is an efficient and important method in the analysis of chiral compounds. In this investigation, the racemates of some anticonvulsant drugs, barbiturates and enaminones, were separated using different native cyclodextrins (CDs); <math>\alpha</math>-CD, <math>\beta</math>-CD and <math>\gamma</math>-CD. Using a 50 <math>\mu</math>m internal diameter (id) fused silica capillary four of the six barbiturates studied could be resolved at a basic pH of 9.4 and using 100 mM phosphate buffer concentration. Optimum separation for the racemates is obtained by varying concentrations of the native CDs. There is an average two-fold increased in resolution when shifting to a 20 <math>\mu</math>m internal diameter fused silica capillary. When translated to a 20 <math>\mu</math>m id capillary conditions where only partial peak splitting was observed with the 50 <math>\mu</math>m id capillary gave successful resolutions. The enaminones were only</p>

	<p>partially resolved using the native CDs with both the 50 and 20 <math>\mu\text{m}</math> id capillaries. It is indicated that separation of the enaminones may require the use of derivatized or substituted cyclodextrins. The use of smaller id capillaries enhanced the resolutions of the samples with the added advantage of using only small amounts of sample volumes and reagents required for analysis.</p>
<p><b>BeheshtaHydariQiam</b>  <b>m</b>  <b>GICICRST1611067</b></p>	<p><b>Urban Development in Kabul City through Land Readjustment Process in Kabul City</b></p> <p><b>BeheshtaHydariQiam</b>  <b>Pune University, Pune, Delhi</b>  <b>beheshtah@gmail.com</b></p> <p><b>ABSTRACT</b></p> <p>Kabul is the capital of the Islamic Republic of Afghanistan as well as the largest city of Afghanistan, located in the eastern section of Afghanistan. According to a 2012 estimate, the population of the city was around 4.8 million, which includes all the major ethnic groups. It is the 64th largest and the 5th fastest growing city in the world</p> <p>Kabul city is characterized by a rapid growth of urban population on an unprecedented scale. Therefore, the construction and urban real estate business are major sectors to drive the current economic growth of Afghanistan. The Afghan Government, however, cannot take effective measures to control illegal land transactions and land grabbing, proliferation of informal settlements on steep hills, and other undesirable activities resulting from the rapid urbanization. Informal settlements shelter almost 80% of residents in the Kabul city, covering some 70% of the urbanized area. The Kabul city has experienced massive inflow of people especially after 1990s, and the majority of migrants have been informally housed. This research focus on an informal settlement area with area of 40 hectares and 15234 residences located in the center of Kabul city, the area is lacking of basic social and physical infrastructure, and a concept plan has been developed for this area.</p> <p>Finding of this research propose a basic solution for unplanned area in Kabul city, which through this process the unplanned area can be changed to planned areas, the basic infrastructure has been brought for the residence, lifestyle of designated area residence has been changed dramatically and price of land increase at least two times.</p> <p>To conclude, the key characteristic of the Land readjustment process is that it works on the concept of mutual interest in which both land owners and government takes advantage. Though in this process, the engagement of community is very important and without public cooperation this process can face the failure.</p> <p><b>Key Words: Land Readjustment, planned area, unplanned area, Kabul, Afghanistan.</b></p>
<p><b>Mursal Ibrahim Zada</b>  <b>Zada</b>  <b>GICICRST1611068</b></p>	<p><b>Importance of Road Infrastructure on the People Live in Afghanistan</b></p> <p><b>Mursal Ibrahim Zada</b>  <b>Graduate from Kabul University, Kabul, Afghanistan</b>  <b>mursal_ashraf@yahoo.com</b></p> <p><b>ABSTRACT</b></p> <p>Since 2001, the new Government of Afghanistan has put the improvement of transportation in rural area as one of the key issues for the development of the country. Since then, about 17,000 km of rural roads were planned to be constructed in the entire country. This thesis will assess the impact of rural road improvement on the development of rural communities and housing facilities. Specifically, this study aims to show that the improved road has leads to an improvement in the community, which inturn has a positive effect on the lives of rural people. To obtain this goal, a questionnaire survey was conducted in March 2015 to the</p>

	<p>residents of four different districts of Kabul province, Afghanistan, where the road projects were constructed in recent years. The collected data was analyzed using on a regression analysis considering different factors such as land price, waiting time at the station, travel time to the city, number of employed family members and so on. Three models are developed to demonstrate the relationship between different factors before and after the improvement of rural transportation. The results showed a significant change positively in the value of land price and housing facilities, travel time to the city, waiting time at the station, number of employed family members, fare per trip to the city, and number of trips to the city per month after the pavement of the road. The results indicated that the improvement of transportation has a significant impact on the improvement of the community in different parts, especially on the price of land and housing facility and travel time to the city.</p> <p><b>Key Words:</b> Accessibility, Afghanistan, housing facility, Rural Area, land price,</p>
<p><b>Kurtulus Erinc Akdogan</b> GICICRST1611069</p>	<p><b>Development of a Software Based System to Apply Turkish Building Energy Performance Directive</b></p> <p><b>Kurtulus Erinc Akdogan</b> Proline Integrated Intelligence Corporation, Ankara, Turkey kurtulus.akdogan@pro-line.com.tr</p> <p><b>Demiray Ustaoglu</b> Proline Integrated Intelligence Corporation, Ankara, Turkey demiray.ustaoglu@pro-line.com.tr</p> <p><b>Kemal Akoglu</b> Proline Integrated Intelligence Corporation, Ankara, Turkey kemal.akoglu@pro-line.com.tr</p> <p><b>Can Fil</b> Proline Integrated Intelligence Corporation, Ankara, Turkey can.fil@pro-line.com.tr</p> <p><b>Tolga Taстан</b> Proline Integrated Intelligence Corporation, Ankara, Turkey tolga.taastan@pro-line.com.tr</p> <p><b>Gulsu Ulukavak Harputlugil</b> Çankaya University, Faculty of Architecture, Ankara, Turkey gharputlugil@cankaya.edu.tr</p> <p><b>ABSTRACT</b></p> <p>This work is about the software named BEP-TR (Building Energy Performance -Turkey) which is developed upon request from Turkish Ministry of Environment and Urbanization to apply building energy performance directive nationwide to improve the energy efficiency of buildings in Turkey. Directive requires that each building in the country must have an energy performance certificate (EPC) indicating the ratings of energy consumption and greenhouse gas (GHG) emission of the related building. BEP-TR software is designed mainly to issue EPC for buildings considering each phase of EPC preparation process and tasks of associated institutions and individuals. BEP-TR is mainly composed of two software applications called BEP-BUY and BEP-IS. BEP-BUY is a desktop application which allows</p>

	<p>user to design a building stored in XML project file and calculate its energy consumption and greenhouse gas emission to determine its corresponding ratings. EPC application for the designed building which meets standards required by government is done by sending the project file of the building through BEP-BUY to the BEP-IS. BEP-IS is an internet based software which is under the control of the ministry. BEP-IS confirms the calculations made for the building using the received project file and initiates the process of preparing EPC. BEP-IS provides users who takes part in this process interfaces designed as web pages. Users and their authorizations are managed by fully authorized users defined for the ministry through BEP-IS. Besides BEP-IS stores and reports data related with processes and users. There are two other modules called library and calculation which are embedded in both BEP-BUY and BEP-IS. Library module stores the data related with structural materials which are determined to be useable in building construction. Calculation module contains the national calculation method developed to calculate greenhouse emission and energy consumption of a building using properties of materials selected from library module. In this study, as an example a building is designed and its energy consumption is calculated using BEP-BUY.</p> <p><b>Keywords:</b> Building Energy Performance, Climate Change, Sustainable Development</p>
 <p><b>Ramin</b> GICICRST1611070</p>	<p><b>Bus Transit Demand Modeling and Fare Structure Analysis of Kabul City</b></p> <p><b>Ramin</b> Kumamoto University, Japan raminmirzada@yahoo.com</p> <p><b>ABSTRACT</b></p> <p>Kabul is the heart of political, commercial, cultural, educational and social life in Afghanistan and the fifth fastest growing city in the world. Minimum income inclined most of Kabul residents to use public transport, especially buses, although there is no proper bus system, beside that there is no proper fare exist in Kabul city Due to wars. From 1992 to 2001 during civil wars, Kabul suffered damage and destruction of its transportation facilities including pavements, sidewalks, traffic circles, drainage systems, traffic signs and signals, trolleybuses and almost all of the public transport system (e.g. Millie bus). This research is mainly focused on Kabul city's transportation system. In this research, the data used have been gathered by JICA in 2008 and this data will be used to find demand and fare structure, additionally a survey was done in 2016 to find satisfaction level of Kabul residents for fare structure. Aim of this research is to observe the demand for Large Buses, compare to the actual supply from the government, analyze the current fare structure and compare it with the proposed fare (distance based fare) structure which has already been analyzed. Outcome of this research shows that the demand of Kabul city residents for the public transport (Large Buses) exceeds from the current supply, so that current public transportation (Large Buses) is not sufficient to serve public transport in Kabul city, worth to be mentioned, that in order to overcome this problem, there is no need to build new roads or exclusive way for buses. This research proposes government to change the fare from fixed fare to distance based fare, invest on public transportation and increase the number of large buses so that the current demand for public transport is met</p> <p><b>Keywords—</b>Transportation, planning, public transport, large buses, fixed fare, distance based fare, Kabul, Afghanistan.</p>



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**Optimum Allocation of DG Unit to Reduce Production Cost in Radial Distribution Systems using Fuzzy – A Case Study**

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**ABSTRACT**

The modern power distribution network is constantly being faced with an ever-growing load demand. In order to bridge this gap and meet anticipated growth, it is necessary to reduce the losses and increase the present capacity of generating plant. The rapid depletion of conventional resources in recent years has made the Distributed Generation (DG) a popular subject for any discussion in power systems. Decentralized power generation close to the load centers using renewable sources appears to have the potential to address some of the problems of electrification. The application of DG sources to economically competitive power generation has envisaged an increasing interest in optimal location of DG units. The main problem in DG application is to find the optimal placement and size of DG unit to reduce the production cost by reducing the losses in the system. This paper proposes an effective methodology using fuzzy technique to identify the corresponding optimum location and size for DG placement to reduce overall production cost by minimizing the total power losses and voltage improvement in radial distribution systems. Exact loss formula based analytical expression is derived to get optimal size of the DG unit. The effect of size and location of DG with respect to production cost and loss in the network is examined in detail. The proposed methodology is tested and validated on IEEE 33 bus test system. Results obtained from the proposed methodology are compared with those of capacitor placement. Index Terms— Distributed generation, Exact loss formula Operational cost, Optimum location, Optimum size.



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**Mathematical Modelling of Heat Affected Zone Width in Submerged Arc Welding Process**



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**ABSTRACT**

In submerged arc welding process, major process control parameters are current, arc voltage, and travel speed. One of the most important issues of submerged arc welding processes is heat affected zone softening that imparts some uncertainties in the weld quality. They affect the bead shape, depth of penetration and chemical composition of the deposited



	<p>weld metal. Therefore, study of heat affected zone is imperative for controlling the quality of weld. A large heat affected zone increases the probability of fatigue failures at the weakest zones caused by the heating and cooling cycle of the weld zone. The objective of this work is to assess the heat affected zone of welded mild steel plates through numerical analysis and compare it with experimental results. Relation between heat input, which is function of input parameters, and heat affected zone width has also been established to reveal the effect of input parameters on heat affected zone width. Microstructural study of heat affected zone has also been performed.</p> <p><b>Keywords:</b>Mathematical modelling, Submerged arc welding, Heat affected zone, Microstructure.</p>
 <p><b>Morteza Shojae</b> GICICRST1611073</p>	<p><b>Hydrogen and Syngas Production via Steam Gasification of Bagasse in a Dual Bed Reactor</b></p> <p><b>MortezaShojae</b> Department of Energy Engineering, Science and Research Branch of Azad University, Tehran, Iran m.shoja10@gmail.com</p> <p><b>ABSTRACT</b></p> <p>Steam gasification of bagasse followed by thermal cracking of tar was carried out at atmospheric pressure using a dual bed reactor. The first bed was used for the steam gasification and the second bed was used for thermal cracking of tar. Iron fillings were used as the packed bed material in the second bed. The effects of reaction temperature (600 to 900oC), packed bed height (40-100 mm) and steam/bagasse ratio on the product (char, tar and gas) yield and gas (H<sub>2</sub>, CO, CO<sub>2</sub>, CH<sub>4</sub>, C<sub>n</sub>H<sub>m</sub>) composition were studied. Over the ranges of the experimental conditions used, the operating conditions were optimized for gasification temperature around 850°C, a steam/bagasse ratio of 0.6 and packed bed height of 100 mm, because a gas richer in hydrogen and carbon monoxide and poorer in carbon dioxide and hydrocarbons. It was observed that the steam gasification of bagasse in a dual bed process increased the gas yield from 0.622 to 0.762 (m<sup>3</sup>/kg) and decreased the tar yield from 0.53 to 0.39 (g/g) compared to single bed process while the heating value of the product gas remained almost constant (10-11MJ/m<sup>3</sup>). H<sub>2</sub> and CO yields increased to 18.02 and 49.3 vol.%, respectively and CO<sub>2</sub> yields shifted down to 27.06 vol.%. Methane and heavier hydrocarbon gases yields decreased to 5.34 and 0.262 vol.%. These variations are attributed to reforming of tar compounds with steam and/or CO<sub>2</sub> and water gas shift reactions.</p>
 <p><b>Akanbi C.O.</b> GICICRST1611074</p>	<p><b>A Personalised Food Recommendation Mobile FrameworkUsing User Preference Algorithm</b></p> <p><b>Akanbi C.O.</b> Department of Information and Communication Technology, Osun State University, Osogbo. Nigeria akanbico@uniosun.edu.ng</p> <p><b>Oladeji D.O</b></p> <p><b>ABSTRACT</b></p> <p>The continuous rapid development and improvement in Information and Mobile technologies has now made it possible to have Personalized Recommendation System on basic necessities of life such as food, clothes and shelters. Although publicly available food recommendation tools exist on the internet, majority of which fails to satisfy the uses demands and preferences considering users interest, medical history, and balance diet. In addition, users don't normally have luxurious of time to access their computer systems to</p>

	<p>check for food recommendation every times on their devices, Consequently, A personalized mobile service framework that addresses above limitations is presented in this paper. The food recommendation architecture proposed uses preference algorithm. The design implemented on an Android-based mobile platform is able to recommend and notify suitable food items for the user automatically.</p>
 <p>Soumyajit Goswami GICICRST1611055</p>	<p style="text-align: center;"><b>S-Adaline Based Digital Metering of Electrical Power Components</b></p> <p style="text-align: center;"><b>SoumyajitGoswami</b> IBM India Private Limited, Saltlake, Sector V, Kolkata-700091, WestBengal, India, e-mail - soumyajit_goswami@yahoo.com</p> <p style="text-align: center;"><b>Arghya Sarkar</b> MCKV Institute of Engineering, 243 G.T.Road (N), Liluah, Howrah -711204, WestBengal, India sarkararghya@yahoo.co.in</p> <p style="text-align: center;"><b>S. Sengupta</b> Department of Applied Physics, University of Calcutta, 92, A. P. C. Road, Kolkata - 700009, WestBengal, India samarsgp@rediffmail.com</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>This paper presents the design and implementation of the two stage self-synchronized adaptive linear neural (S-ADALINE) network based novel approach for the measurement of electrical power components according to IEEE Standard 1459-2010. In the first stage, the current and voltage signals are processed to extract the harmonic information, whereas in the second stage, the power components are calculated using these results. The simulation results show that the proposed algorithm provides better performance than the conventional ADALINE and Newton type algorithm (NTA). A simple laboratory setup implemented by MATLAB and dedicated hardware is built to verify the performance of the proposed algorithm in real time applications. The framework of laboratory prototype has been given out and the necessary modification in proposed algorithm for on-line implementation has been discussed.</p> <p><b>Keywords:</b> Adaptive linear neuron, IEEE Standard 1459-2010, harmonics, Levenberg gradient decent method, power measurements</p>
 <p>Umi Mahmudah GICICRST1611079</p>	<p style="text-align: center;"><b>A Model of Profit Sharing Based on Individual Qualifications</b></p> <p style="text-align: center;"><b>Umi Mahmudah</b> School of Informatics and Applied Mathematics, Universiti Malaysia Terengganu, 21030 Kuala Terengganu, Terengganu, Malaysia u_mudah@yahoo.com</p> <p style="text-align: center;"><b>L. Muhamad Safih</b> School of Informatics and Applied Mathematics, Universiti Malaysia Terengganu, 21030 Kuala Terengganu, Terengganu, Malaysia</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The primary purpose of this paper is to develop a model of profit sharing to its employees based on their qualifications. The existing models of profit sharing declare that profit is shared equally to all the employees without over look at their contribution to the company.</p>

	<p>It is not portray the reality of work environment. Therefore, by assuming the qualifications as real numbers, this study suggests a new framework of profit sharing which describing recent trends of the system. Mathematical properties such as theorems as well as its proving are issued in this study. In order to analyze the impact of employees' qualifications to the total portion of profit sharing this study uses data from shipping company in Malaysia. As many as 102 employees are analyzed. Empirical results reveal that individual qualifications affect significantly the total profit share earn by each employee.</p> <p><b>Keywords: mathematical modelling, profit sharing</b></p>
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