



**Global Research &
Development Services**

CONFERENCE PROCEEDINGS

**16th International Conference on Researches in Science & Technology
(ICRST), 14-15 July 2017, Bali, Indonesia**

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Ibis Bali Kuta, Jl. Raya Kuta No. 77, 80361 Kuta, Bali, Indonesia

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**16th International Conference on Researches in Science & Technology (ICRST), 14-15 July 2017, Bali,
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**Global Research &
Development Services**

KEYNOTE SPEAKER



Dr Muharrem Karaaslan

**Ph.D. Physics Department from the University of Cukurova, Adana,
Turkey**

PLENARY SPEAKER



Hajime Hirao

**Department of Biology and Chemistry, City University of Hong
Kong, Tat Chee Avenue, Kowloon Tong, Hong Kong**



Debashis Sanyal
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Determining Major Strategies For Smart City Development In India: An Architect's Perspective

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Abstract

Presently 6 mega cities exist in India, namely Kolkata, Mumbai, Delhi, Hyderabad, Bangalore, Chennai. Further there are nearly 40 tier-II cities. Urban Development activities in Mega cities is proving very difficult, as these are characterized by rapid migration resulted by rapid development of slums. The problems of pressurized city services, insufficient urban infrastructures, traffic congestion, environmental pollution, inefficient energy systems, flooding are compiling in urban conglomerations. Many of the Indian cities are left to organic growth or sometimes uncontrolled expansion. Rapid construction technologies are not adopted resulting cost overruns in the construction sector. While the need for low cost housing is increasing day by day. The use of modular, prefabricated, precast techniques of construction can easily be adopted in India. City development also entails environmental problems and encroachment of green lands with agricultural fields. The addition of intelligence can effectively manage costly resources and solve many problems.

Keywords: Smart City, Housing, Planning Strategies, Rapid Construction, Infrastructure

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Application Of A Community-Based Wastewater Treatment Using The Combination Of Anaerobic And Aerobic System

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ABSTRACT

Improved wastewater services among others through the implementation of community-based Waste water Treatment Plant (WWTP). The WWTP technology generally uses anaerobic systems, aerobic or a combination of aerobic and anaerobic. Criteria for the application of the WWTP are small land requirement, long life time, the practicality of construction and the ease of operation and maintenance. This paper aims to study the technical and non-technical aspects of some application of the communal WWTP. This improvement of wastewater system located in Yogyakarta City consist of anaerobic biofilter and Rotating Biological Contactor (RBC), while in Sumedang City consist of hybrid biofilter (up flow anaerobic sludge blanket/UASB and anaerobic biofilter) then further treatment to semi aquatic plant system (subsurface constructed wetland). Methodology of this study is comparative descriptive analysis (quantitative and qualitative) about the system and process performance, aspects of the application site selection, land requirements and operational maintenance. The study of application of communal WWTP with anaerobic aerobic system show the decision of the selected system should consider

	<p>physical service area, land availability, community acceptance and skill, simplicity of operation and maintenance also potential water reuse development. The land requirement for the aerobic system of RBC is more efficient than the constructed wetland system. But for operational and maintenance costs, the mechanical systems using RBC more costly than the subsurface wetland system. Both of the system could consider as improvement of the communal WWTP that give more benefits for community health, the effort towards recycle orientated community and environment quality. KEYWORDS: community-based, wastewater, treatment, combination, anaerobic, aerobic</p>
 <p>Girigisu Shehu GICECG1705058</p>	<p>Assessment of Heavy Metal Enrichment and Degree of Contamination in Play grounds and market of Duza Twin Village, Anka, Zamfara, Nigeria</p> <p>Hassan Isah Physics Department, Zamfara College of Education, Maru</p> <p>Girigisu Shehu Physics Department, Federal College of Education (Tech.), Gusau</p> <p>Dr. Lawal Sa'ad Physics Department, Federal University Gusau</p> <p>Dr. Ahmad Galadima Chemistry Department, Federal University Gusau</p> <p>Abstract Phase-by-phase Post-remediation exercise of Duza twin village was conducted to determine the success of remediation carried out by Environmental Emergency Response Mission. Present phase in this report borders on the children playground and the village market. Ten samples from playing grounds around the village market and general surrounding in the central of the village were made to assess possibility of contamination by artisanal mining exercises in the locality. Contamination Factor(CF) and Geo-accumulation index were used to determine extent of contamination and relate such to mining ore and extraction chemical used. GeoI values obtained for Pb and Hg respectively at the market location are 1.148 and 5.013, indicating moderate contamination by Lead and extreme contamination by mercury. The output of play grounds yields GeoI of 1.76 and 4.889 for Lead and mercury respectively. This results in similar range for both locations. In conclusion, the villagers have abused the remediation done by resuming ore processing at what-ever-small magnitude to escape the prying eyes of the village authorities.</p>
<p>D. MAOUCHE GICECG1705061</p>	<p>First principle investigations of Curie temperature in Zn(Mn,N)O</p> <p>D. MAOUCHE Department of physics, Faculty of Sciences, Ferhat Abbas University Setif1, Algeria</p> <p>D. CHERRAD Department of physics, Faculty of Sciences, Ferhat Abbas University Setif1, Algeria</p> <p>L. LOUAIL Department of physics, Faculty of Sciences, Ferhat Abbas University Setif1, Algeria</p>

	<p style="text-align: center;">Abstract</p> <p>In this work, we demonstrate that Mn (electron) doping does not have much effect on the Curie temperature of ZnO while N (hole) doping reduces Curie temperature T_c, using the relativistic version of spin-density-functional theory (SDFT) based on ab initio method, Korringa-Kohn-Rostoker (KKR)-coherent potential approximation (CPA). Our results show a monotonic decrease of T_c with increasing N concentration due to the decreasing number of holes in the valence band which no longer mediate the ferromagnetic coupling between Mn atoms. The calculated Curie temperatures as well as their dependence on concentrations are presented and discussed.</p> <p>Keywords: Curie temperature; First-principle calculations; DMS and ZnO.</p>
 <p style="text-align: center;">Se Jin Choi GICECG1705064</p>	<p style="text-align: center;">Effect of Ferronickel slag powder on fluidity and strength properties of cement composites</p> <p style="text-align: center;">Se Jin Choi Department Of Architectural Engineering, Wonkwang, Iksan, South Korea</p> <p style="text-align: center;">Abstract</p> <p>Ground Blast Furnace Slag, the by-product of Steel Industry, has been widely used in the production of concrete as a replacement for cement. The benefits of using ground blast furnace slag are as follows: it reduces the cost of the concrete materials; it reduces environmental concerns of CO₂ production; it decreases the rise in temperature as concrete cures; and, finally, it can improve the durability of concrete. The quantity of blast furnace slag produced from steel making companies in Korea is approximately 14 million tons each year. Ferronickel slag powder, the by-product of nickel industry, has been produced about 2 million tons every year in South Korea. If its properties in concrete similar to the concrete properties with ground blast furnace slag, it can be widely used in concrete industry effectively. This paper investigates the effects of ferronickel slag powder on fluidity and strength properties of cement composites.</p>
 <p style="text-align: center;">Jacqueline E. Hilario GICECG1705067</p>	<p style="text-align: center;">Biogeochemical analysis in relation to water quality of Wawa Dam, Rizal, Philippines</p> <p style="text-align: center;">Jacqueline E. Hilario Department of Environmental Science, School of Arts, Sciences and Teacher Education, Emilio Aguinaldo College, 1113-1117 San Marcelino St., Paco, Manila 1000, Philippines</p> <p style="text-align: center;">Erwin O. Se Department of Environmental Science, School of Arts, Sciences and Teacher Education, Emilio Aguinaldo College, 1113-1117 San Marcelino St., Paco, Manila 1000, Philippines</p> <p style="text-align: center;">Jose Jacob D. Almonte Department of Environmental Science, School of Arts, Sciences and Teacher Education, Emilio Aguinaldo College, 1113-1117 San Marcelino St., Paco, Manila 1000, Philippines</p>

	<p style="text-align: center;">Rafael Miguel D. Almonte Department of Environmental Science, School of Arts, Sciences and Teacher Education, Emilio Aguinaldo College, 1113-1117 San Marcelino St., Paco, Manila 1000, Philippines</p> <p style="text-align: center;">Jett Edzen S. Garcia Department of Environmental Science, School of Arts, Sciences and Teacher Education, Emilio Aguinaldo College, 1113-1117 San Marcelino St., Paco, Manila 1000, Philippines</p> <p style="text-align: center;">Abstract</p> <p>Biogeochemical components of Wawa Dam were studied to assess specifically the abundance of macro-invertebrates and geological structures such as rocks. Quantitative analysis on the physicochemical parameters such as pH, temperature, total dissolved solids (TDS), total suspended solids (TSS), biochemical oxygen demand (BOD), dissolved oxygen (DO), nitrates (NO₃) and orthophosphates(O-PO₄) were done to compare with the standard criteria set by the Department of Environmental and Natural Resources (DENR) in four consecutive months covering rainy and dry seasons. Results showed that Orders Orthoptera and Diptera under Class Insecta with 31% were the most abundant macro-invertebrates followed by Order Veneroida of Class Bivalvia with 27% and Order Achatinodea of Class Gastropoda with 15%. The most abundant rocks were sedimentary rocks such as limestone, chert, sandstone, shale and quartz with 69% followed by igneous rocks like andesite, basalt and diorite with 31%. TSS and TDS revealed significant concentration (P<0.05) having low levels with average mean values of 33.25 mg L⁻¹ and 155 mg L⁻¹ respectively, as compared with the standard criteria set by the Department of Environmental and Natural Resources (DENR)Administrative Order (DAO 90-34) for Class A (drinking water with complete treatment). BOD, NO₃ and O-PO₄ with average mean values of 9.5 mg L⁻¹, 11 mg L⁻¹ and 1.1 mg L⁻¹, respectively, did not meet the DENR criteria. DO, pH and temperature were within the range of standard level. Considering the presence of inhabitants living in Wawa Dam and other sources of stressors and pollution, water quality of Wawa Dam is deteriorating based on these observed parameters: nutrient concentrations were quite alarming, macro-invertebrates were threatened due to a very high BOD and almost in the minimum level of DO. TSS and TDS were significant because of their low concentrations compared with the standard criteria set by the DENR. Keywords: Environment, water quality, biogeochemical components, Wawa Dam, Philippines</p>
<p style="text-align: center;">Muhammad Ali Adriansyah GICECG1705069</p>	<p style="text-align: center;">The Influence of Hug Therapy to Increase Child's Emotional Intelligence</p> <p style="text-align: center;">Muhammad Ali Adriansyah Faculty of Social and Political Science, Mulawarman University</p> <p style="text-align: center;">Diah Rahayu Faculty of Social and Political Science, Mulawarman University</p> <p style="text-align: center;">Abstract</p> <p>In childhood the emotional feeling they have is still unstable, they are still unable to control their emotions, therefore the role of the parents in this case is needed for the</p>

	<p>progress of a child's development in a very simple way like embracing. Hugging can be a simple alternative called hug therapy, where the purpose of this therapy can stimulate the child's emotional intelligence. The research method used in this research is quantitative with experimental approach. The sample of this research is students of early childhood AL-Qalam Samarinda who have low level of emotional intelligence amounted to 15 people. Technique Data analysis using paired sample t-test. The results showed that there is influence of embrace therapy on the increase of emotional intelligence in children with t count value $5.670 > t$ table 2.144, p 0.000, and mean 11.133.</p> <p>Keywords: child, emotional intelligence, hugs therapy.</p>
<p>Ivan Orlando Limouswan GICECG1705071</p>	<p>Utilization of rice husk as eco-friendly cellulose acetate-based polymer for plastic bag</p> <p>Ignatius Andre Setiawan Department of Metallurgical and Materials Engineering, Faculty of Engineering, University of Indonesia, Depok, West Java, Indonesia</p> <p>Ivan Orlando Limouswan Department of Metallurgical and Materials Engineering, Faculty of Engineering, University of Indonesia, Depok, West Java, Indonesia</p> <p>Abstract Indonesia consumption of plastic bags increases considerably every year. Furthermore, these petroleum-based plastic bags are hardly degraded by nature. On the other hand, agricultural waste such as rice husks is not used efficiently. This paper reports an efficient method of solving both problems. Agricultural waste management can considerably be a vital strategy to conserve and maintain quality of the environment. Cellulose-based polymers will replace petroleum-based polymers usage in plastic bags due to its safety, low production costs, and biodegradability. Method used to produce cellulose acetate-based polymer from rice husk is sulfuric acid-catalyzed acetylation process which done by agitate rice husk with acetic anhydride and glacial acetic acid followed by addition of polyethylene glycol. Then, the produced cellulose acetate which has been tested by FTIR Spectroscopy was tested to determine its biodegradability. The similarity of functional group between cotton linter and rice husk causes rice husk plastic bag's biodegradability degree is expected to have grade of % weight loss near to cotton linter's that is 4% in first day and 35% after 14 days. Therefore, this cellulose-based plastic will potentially replace usage of conventional plastic bag, enhancing Indonesian people involvement in improving added value of rice husk, achieving national resilience.</p> <p>Keywords: Acetylation, Biodegradable, Cellulose Acetate, Plastic Bag, Rice Husk</p>
 <p>Jeffrey C. S. Wu GICECG1705053</p>	<p>Bio-ethylene production from ethanol broth using ZSM-5 catalysts</p> <p>Cheng-Hon Li Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan</p> <p>Jun-Yan Liu Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan</p> <p>Kim Struwe Department of Chemical Engineering, National Taiwan University, Taipei 10617,</p>

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Abstract

The technology and civilization are developing amazingly. However, fossil fuel may be phased out in next 50 years. Therefore, scientists are working on renewable energy. Biomass is the most promising renewable energy source, and the ethanol broth to chemicals (EBC) is the most promising biomass conversion. There are several benefits of EBC. First, the ethanol comes from the fermentation of waste of agriculture and algae; second, we can use ethanol broth to produce chemicals directly; We can take care of climate and energy issues simultaneously though EBC. However there are still several problems in EBC. First of all, we have to make sure which reaction conditions, such as, reaction temperature, reaction pressure and reactant flow rate, are suitable for ZSM-5 catalyst. Second, the deactivation of the catalyst can decrease its value in industry and cost much more.

In this research, we used HZSM-5, 2.5%CuO/2.5%ZnO-ZSM-5 and 1%Ni-ZSM-5 catalysts. When reaction temperature increased, the selectivity of aromatic products increased and gas products decreased. The catalyst, 2.5%CuO/2.5%ZnO-ZSM-5, showed the highest ethanol conversion rate, which were all over 95%. However, this catalyst had the lowest selectivity for liquid product. Thus, we used HZSM-5 and 1%Ni-ZSM-5 for the following experiments. When WHSV increased, the selectivity of aromatic compounds decreased. Furthermore, if we used different ethanol concentration as feed, we found similar product distribution with both catalysts. In 24-hour experiment, HZSM-5 and 1%Ni-ZSM-5 kept at least 87% ethanol conversion rate and similar product distribution. Therefore, these two catalysts were stable at least 24 hours. In the long-term stability, the conversion was maintained after 180 hrs, while the selectivity of aromatics decreased. The regeneration of HZSM-5 and 1%Ni-ZSM-5 were performed after 90 hrs, and the coking of the catalysts can be removed completely.

Conversion of Oil Recovered from Palm Oil Mill Effluent (POME) into Biodiesel
Using Electrolysed Carbon Catalyst

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Abstract

Malaysia produces approximately 60 million tons of palm oil mill effluent (POME) annually. Raw POME contains 0.6-0.7% oil and it has high free fatty acids (FFAs). The residual oil in POME however, is a potential feedstock in biodiesel production. Oil in the POME was recovered and converted into biodiesel through catalysis esterification reaction. A new carbon based catalyst had been developed in this study. Carbon deposited from electrolysis process was used as carbon precursor to synthesis electrolysis carbon catalyst (CEC). The carbon was sulfonated using concentrated sulfuric acid at temperature 150 °C for 12 h followed by washing and drying of the sulfonated carbon (CEC). CEC was characterized for its physiochemical properties using Elemental analyzer, FT-IR, SEM-EDX, TGA-DTA and back titration methods. Elemental analysis results showed that S content in CEC was ~4 times higher than the electrolysis carbon. The FT-IR detected the presence of weak sulfonic acid groups. The total acidity of CEC was 0.75 mmol g⁻¹ suggesting poor acid functionalization of the electrolysis carbon. This could be associated with the stability of the carbon and also the presence of other elements that weaken the sulfonation reaction. The structure of CEC was observed through the SEM images. CEC possessed a randomly ordered structure and discrete microporous pores. Catalytic activity of CEC was tested on esterification of oil recovered from POME with methanol. The yield was very low, which was 6.19%, this was attributable to the low active sites of the CEC. Further improvement on the electrolyze carbon need to be done in order to increase the total acidity.



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Recovery of Residual Oil from Palm Oil Mill Effluent Using Polypropylene Nanofiber: A Field Trial

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Abstract

Palm oil mill effluent (POME) is an inevitable unwanted product produced by palm oil industry that challenges the engineering solutions for its complexity and recalcitrance in nature. Many approaches have been attempted to treat POME but often fail because of unwillingness of the millers to implement largely because of the financial implication. This paper reports a new approach to solve the POME pollution, through the recovery of residual oil as opposed to the elimination approach. A field trial of this approach was successfully carried out in a local palm oil mill in Sandakan, Sabah, Malaysia. The recovery of oil was done using novel polypropylene nanofibers (NF) placed in a sludge pit before the treatment pond. NF was packed in flat sheets of wire mesh and bulk bundles, submerged in the POME stream with 5, 6, 7, 15 hours contact times. Saturated NF was removed from pit and oil was desorbed by manual roller press. It recovered 12.09 g of oil/ g NF in 34 hours cycle. The recovered oil contained 77% oil content and FFA of 25.05. GC-FID study of the recovered oil indicated no trace of polypropylene contamination. The recovered oil can be good for oleochemical industries and production of derivative products such as biodiesel and biolubricant. SEM-EDX tests showed material consistency after 5 rounds of roller pressed implying its excellent reusability. The NF exhibited oil recovery efficiency of 0.03% oil recovery per kg per hour. The efficiency is expected to be significantly enhanced if the POME-NF contact is improved as well as the pressing technique. It can be revolutionary to transform POME from liabilities into a profit creating centre; meanwhile by recovering the oil, it alleviates the organic load of the POME. It can fundamentally change the landscape of POME treatment into sustainable, profitable and economical one.

Keywords: Nanofiber, oil recovery, POME, sterilizer condensate, sludge clarification, oil extraction rate



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Effect of process parameters on removal of oil from POME using polypropylene nanofiber

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Abstract

The presence of emulsified oil in palm oil mill effluent (POME) stream causes serious

environmental pollution due to elevation of BOD and COD values. Typically, 1% residual oil escapes in every tons of palm oil produced, forcing the millers to install wastewater treatment to treat POME to achieve dischargeable limits set by the Department of Environmental (DOE). Conventional techniques are often ineffective while newer ones such as membrane are costly. In this study, a novel approach to adsorb the residual oil and grease from POME by using meltblown polypropylene nanofiber (NF) is reported. The effectiveness of the nanofiber to adsorb oil was evaluated by varying the process parameters such as oil concentration, time, weight of nanofiber and temperature. The results showed that the oil adsorption efficiency of the nanofiber using refined cooking oil and POME were 29.4(g of oil)/(g of NF) and 9.14(g of oil)/(g of NF), respectively. The oil adsorption process found that high oil concentration affects the time of adsorption process, where shorter time needed to achieve its saturated point. Moreover, increase the weight of nanofiber, improves the oil removal from POME and high temperature helps to increase the viscosity of the oil. Furthermore, the extraction of oil from the nanofiber was also studied. The results showed 96.20% of oil could be extracted from the nanofiber. In conclusion, the polypropylene nanofiber had been demonstrated to be effective in removing oil from POME.

Keywords: Oil removal, nanofiber, POME, polypropylene, oil recovery



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Plastic substrates copolymerized with tetracycline-imprinted polymethacrylates and quantum dots as fluorescent sensors

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Abstract

Aminolysis by 2-aminoethyl methacrylate and electrophilic addition followed by hydrolysis in KOH(aq) by 2-isocyanatoethyl methacrylate or glycidyl methacrylate were investigated to derive methacrylate groups on flexible plastic polyimide substrate sheets (PIs). The fluorometric sensors composed of CdTe quantum dots and tetracycline (Tc)-imprinted polymethacrylates were synthesized by considering the molar ratio of the monomer components, including methacrylic acid, allyl mercaptan, and ethylene glycol dimethacrylate (2 mmol:2 mmol:2 mmol), the amounts of the aqueous CdTe solution (0.75 mL) and ethanol diluent (3.0 mL), the reaction time (2.5 h) and the temperature (60 °C) of the radical-initiated polymerization. The prepared MIP-QD composites were then copolymerized on the methacrylated PIs at 65 °C for 15 min. The complete MIP-QD-PIs were immersed into a supersonic bath with the stripper EtOH:H₂O = 2:1 (v/v) for 6 min to strip off the Tc templates. The fluorescence quenching intensity (ΔF) measured at 565 nm before and after dropping a Tc sample (10 μ L) on the stripped MIP-QD-PIs after 3 min of equilibration was used to optimize the processes, evaluate the imprinted factors (4.8, RSD = 7.2%), and correlate with the Tc concentrations (70 μ M-2.2 mM) in phosphate buffer (pH 7.5, 50 mM) ($\square F = 370.6 \times [C] \text{ (mM)} + 19.81 \text{ (R}^2 = 0.9993)$) with a LOD = 8.8 μ M (RSD = 8.2% in blanks (n = 10)). For the stripped MIP-QD-aminolyzed PI, the recoveries of Tc (70 μ M) from BSA (200 μ g/mL) and FBS (1.00 ppt) were 98% (n = 5, RSD = 8.2%) and 97% (n = 5, RSD = 9.5%), respectively.

Keywords Imprinted • Modification • Polyimide • Quantum dot • Substrate • Tetracycline



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Computationally Looking into Complex Metal-Organic Frameworks and Other Materials

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Abstract

Computational chemistry offers extremely green techniques for conducting research into molecules and materials. In addition, the physical principles used in computational chemistry underlie all branches of chemistry; as such, computational chemistry has unlimited potential to contribute to the advancement of fundamental chemistry in every different sub discipline as well as to finding solutions to critical challenges that humankind faces today. With this in mind, our computational exploration of chemistry applies quantum chemistry, multiscale QM/MM and many other advanced computational chemistry techniques to porous coordination polymers (PCPs, or metal-organic frameworks, MOFs) and nanomaterials. In particular, using computational approaches and often with experimental collaborators, we seek to derive information about chemical reaction mechanisms and bonding patterns of these complex molecules.



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Near surface Characteristics of the high volume fly ash concrete

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Abstract

It is undeniable fact that fly ash concrete is a widely used material in building construction today. This is because adding fly ash in concrete reduces the cement consumption and contributes to less emission. The Fly Ash concrete in this research is consists of Fly ash, ordinary Portland cement, fine aggregate and coarse aggregate. The high volume fly ash concrete is basically mixed with the fly ash in volumes of 0 % and increase by 20% , 40% ,60 % and 80% according to the fly ash concrete mixture 1: 1.5 : 3 cement : fine aggregate : coarse aggregate ratio to produce the high volume fly ash concrete. The cubes were kept in three different curing regimes. The fly ash concrete was then tested for its compressive strength, water absorption and sorption. It is concluded that concrete cured under normal water curing gives best performance results.

Keywords: Concrete, sorption, water absorption, Fly ash.

Effect of different curing conditions on the performance of high volume fly ash

concrete

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Abstract

It is undeniable fact that fly ash concrete is the most widely used material in building construction today. This is because adding fly ash in concrete reduces the cement consumption and contributes less emission. The ordinary Portland cement concrete is basically made up of the ordinary Portland cement, fine aggregate and coarse aggregate. The Fly Ash concrete in this research is consists of Fly ash, ordinary Portland cement, fine aggregate and coarse aggregate. The high volume fly ash concrete is basically mixed with the fly ash according to the fly ash concrete mixture 1: 1.5 : 3 cement : fine aggregate : coarse aggregate ratio. The fly ash concrete is then kept in three different curing regimes. The fly ash concrete was then tested for its compressive strength, water absorption and initial surface absorption (ISAT). It is concluded that concrete cured under the normal water curing condition give the best performance results.

Keywords: Concrete, Strength, Water absorption , ISAT



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Producing of Safety Melon Ananas by Using Special nutrition program under Greenhouse Conditions

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Abstract

The effects of different nutrition solutions with the addition of different concentrations of both silicon and calcium on Melon Ananas downy mildew disease were examined. Melon Ananas plants grown under greenhouse were treated with standard and adapted nutrient solutions amended with different concentration of Si and Ca. Selected plants inoculated with sporangia of the pathogen. Percentage of infected leaves and disease severity observed in inoculated plants were significantly reduced when nutrient solution amended with Si or Ca. Best results were obtained in nutrient solution amended with silicon and calcium together. All results obtained tabulated according to the severity of disease incidence and yield production.

Keywords : Melon Ananas, Downy mildew, silicon, Calcium, Greenhouses



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Plastic substrates copolymerized with tetra cycline-imprinted polymethacrylates and quantum dots as fluorescent sensors

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Aminolysis by 2-aminoethyl methacrylate and electrophilic addition followed by hydrolysis in KOH (aq) by 2-isocyanatoethyl methacrylate or glycidyl methacrylate were investigated to derive methacrylate groups on flexible plastic polyimide substrate sheets (PIs). The fluorescent sensors composed of CdTe quantum dots and tetracycline (Tc)-imprinted polymethacrylates were synthesized by considering the molar ratio of the monomer components, including methacrylic acid, allyl mercaptan, and ethylene glycol dimethacrylate (2 mmol:2 mmol:2 mmol), the amounts of the aqueous CdTe solution (0.75 mL) and ethanol diluent (3.0 mL), the reaction time (2.5 h) and the temperature (60 °C) of the radical-initiated polymerization. The prepared MIP-QD composites were then copolymerized on the methacrylated PIs at 65 °C for 15 min. The complete MIP-QD-PIs were immersed into a supersonic bath with the stripper EtOH:H₂O = 2:1 (v/v) for 6 min to strip off the Tc templates. The fluorescence quenching intensity (ΔF) measured at 565 nm before and after dropping a Tc sample (10 μ L) on the stripped MIP-QD-PIs after 3 min of equilibration was used to optimize the processes, evaluate the imprinted factors (4.8, RSD = 7.2%), and correlate with the Tc concentrations (70 μ M-2.2 mM) in phosphate buffer (pH 7.5, 50 mM) ($\Delta F = 370.6 \times [C] \text{ (mM)} + 19.81$ ($R^2 = 0.9993$)) with a LOD = 8.8 μ M (RSD = 8.2% in blanks (n = 10)). For the stripped MIP-QD-aminolyzed PI, the recoveries of Tc (70 μ M) from BSA (200 μ g/mL) and FBS (1.00 ppt) were 98% (n=5, RSD = 8.2%) and 97% (n=5, RSD = 9.5%), respectively.

Keywords: Imprinted, Modification, Polyimide, Quantum dot, Substrate, Tetracycline

Girigisu Shehu
GICICRST1705061

Assessment of Heavy Metal Enrichment and Degree of Contamination in Play grounds and market of Duza Twin Village, Anka, Zamfara, Nigeria

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Abstract

Phase-by-phase Post-remediation exercise of Duza twin village was conducted to determine the success of remediation carried out by Environmental Emergency Response Mission. Present phase in this report borders on the children playground

	<p>and the village market. Ten samples from playing grounds around the village market and general surrounding in the central of the village were made to assess possibility of contamination by artisanal mining exercises in the locality. Contamination Factor (CF) and Geo-accumulation index were used to determine extent of contamination and relate such to mining ore and extraction chemical used. GeoI values obtained for Pb and Hg respectively at the market location are 1.148 and 5.013, indicating moderate contamination by Lead and extreme contamination by mercury. The output of play grounds yields GeoI of 1.76 and 4.889 for Lead and mercury respectively. This results in similar range for both locations. In conclusion, the villagers have abused the remediation done by resuming ore processing at whatever-small magnitude to escape the prying eyes of the village authorities.</p>
<p>Mostafa A. Amer GICICRST1705067</p>	<p>Formation of Infection Cushion by Rhizoctonia solani Kühn in Relation to Their Biological Control of Cotton Damping-off Disease</p> <p>Mostafa A. Amer Agricultural Botany Department, Faculty of Agriculture (Saba-Basha), Alexandria University, P.O. Box 21531- Bolkley, Alexandria, EGYPT</p> <p>Abstract</p> <p>Application of different types of agricultural and animal manure composts was tested for their efficiency to suppress Rhizoctonia solani cotton damping-off incidence. Moreover, the effect of addition of some biocontrol agents (Bacillus subtilis and Trichoderma harzianum) to these types of composts on their type of infection cushions of R. solani was also investigated. Different forms of infection cushions of R. solani were obtained and proved to be varied from simple to very complicated shape with different combinations of biocontrol agents and tested composts. The least values of the frequency of complicated IC types were obtained with the application of wheat straw and spent mushroom compost. Microscopic examination indicated that the penetration of the pathogen through open stomata and formation of early stage of lobate appressorium on the inoculated cotton seedling hypocotyls were observed on the first horse of inoculation. Cross sections of cotton hypocotyls, after several hours of inoculation, showed different behaviors of R. solani throughout the colonization of the layers of hypocotyls cotton seedlings. Complete destruction of epidermal layer and all cortical cells were clearly showed after 96 hours of inoculation.</p>
<p>Wenjing Wang GICICRST1705068</p>	<p>Novel amine impregnated graphene/SBA-15 composite with good stability for CO₂ capture</p> <p>Wenjing Wang The University of Queensland, Australia</p> <p>Abstract</p> <p>Carbon dioxide (CO₂) is the major greenhouse gas that makes the largest contribution to global warming. Worldwide research activities have focused on developing different types of physical and chemical adsorbents for CO₂ capture. Amine functionalized mesoporous silica combining the merits of physisorption and chemisorption is one of the most promising materials for CO₂ capture. However, due to the low thermal conductivity of mesoporous silica coupled with high adsorption heat of chemisorption, the thermal stability and cycle stability are severe issues that should be considered for practical CO₂ capture. The introduction of graphene with superior properties, large theoretical specific surface area of 2630 m² g⁻¹ and</p>

	<p>excellent thermal conductivities, could be an effective way to solve the problem of stability. SBA-15 is a mesoporous silica, which has well-ordered hexagonal mesopore structure. However, to the best of our knowledge, the feasibility of graphene introduction to SBA-15 for CO₂ capture need further explore. In this work, novel nanocomposites of graphene (G) /SBA-15/hyperbranched polymer(HBP) were synthesized and tested as CO₂ adsorbent. A capacity of up to 1.50 mmol g⁻¹ was obtained by G/SBA-15/HBP (50), indicating the presence of graphene within the system increased the capacity of conventional SBA-15/HBP to adsorb CO₂ by 51.51%. SEM images and N₂ sorption analyse indicate the introduction of graphene reduced the agglomeration and HBP could disperse more evenly into G/SBA-15. What's more, G/SBA-15/HBP (50) was relatively stable for 10 thermal cycles. The presence of graphene in the nanocomposite efficiently stabilizes HBP, improving cycle stability and adsorbent longevity.</p> <p>Keywords: CO₂ capture, mesoporous silica, graphene, amine functionalization</p>
<p>Joos Meikhel Gaghenggang GICICRST1705072</p>	<p>The Role, Importance, and Challenge of e-Government in Indonesia</p> <p>Joos Meikhel Gaghenggang Science and Engineering, Golden Key International Honor Society Jakarta, Indonesia</p> <p>Abstract</p> <p>The implementation of Information Communication and Technology (ICT) in Indonesia is increasing significantly. ICT have changed daily life of people, business operation in companies, and the way of serving of government to the citizen. Indonesian government is realizing that the application of e-government is important to support the bureaucratic reform program. E-Government is much more than an instrument for improving public services. It is a tool of reform and a tool to transform government. This research will examine the role and importance of e-Government also the challenge of implementing it into national level. This research conducts focus group discussion as a qualitative method to discuss the essential position of e-Government and its challenge in order to analyze data and deliver an appropriate approach of applying e-Government in public sector. The analysis highlights that e-Government has important role in organization in order to achieve good ICT governance in public sector. There are some benefits of successful implementation of e-Government such as better delivery of services to citizens, enhanced interactions with business and industry, citizen empowerment through access to information, better management, revenue growth, and cost reduction. However, the study indicates that the implementation of e-Government concept in Indonesia has some delinquent to be overcome. The difference of business process between central and local government is the fundamental consideration in applying this concept. In addition, unstandardized ICT infrastructures in Indonesia become an issue in implementing e-government. Regardless the challenges, the research imply the potential of successful implementation of e-Government in this country. E-government has the potential to greatly improve how government operates internally and how it serves its customers.</p>
<p>Laili Rachmawati GICICRST1705073</p>	<p>Physical Quality Of Golf Glove Leather With Tanning Process By Reduced Chrome</p> <p>Emiliana Anggriyani Leather Processing Technology Department, Polytechnic of ATK Yogyakarta, Indonesia</p>

	<p style="text-align: center;">Laili Rachmawati Leather Processing Technology Department, Polytechnic of ATK Yogyakarta, Indonesia</p> <p style="text-align: center;">Abstract</p> <p>This study aims to explain the physical quality of golf glove leather by using reduced chrome tanned on the sheepskins. This research was conducted in August until October 2015 at Polytechnic of ATK Yogyakarta, Indonesia. The materials used in this study were sheepskins pickle. Research results were analyzed using descriptive analysis of the physical quality of the skin. The results of powder chrome tanning agent tanned showed tensile strength 79,63 kg/cm², elongation 58,12%, tear strength 8,09 kg/cm, and slightly faded. Liquid chrome tanning agent tanned showed tensile strength 117,37 kg/cm², elongation 48,87%, tear strength 17,27 kg/cm, and do not fade. Golf gloves with liquid reduced chrome have a better physical quality than powder chrome tanned in terms of tensile strength, tear strength, and color durability against sweat.</p> <p>Keywords: Golf glove, Reduced chrome, Physical quality</p>
 <p>Rajamohana SP GICICRST1705074</p>	<p style="text-align: center;">A New Feature Selection Method Based On Improved Binary Particle Swarm Optimization (Ibпсо) With Harmony Search Algorithm (Hsa) For Review Spam Detection</p> <p style="text-align: center;">Rajamohana SP Information Technology, PSG College of Technology, Coimbatore, India</p> <p style="text-align: center;">Abstract</p> <p>Nowadays customers are very interested to share their reviews and post their feedbacks, suggestions in the forums, blogs which leads the emergence of spam review detection. To increase the organization productivity or devalue the opponents' product or services, now the organizations assign spammers to write the fake reviews. Hence Spam review detection is important for both the customer and service providers for better decision making while purchasing as well as marketing the product. Existing research works focused only for sentiment classification for the past few decades which favors the spammers to write fake reviews. Hence it is important to detect the spam reviews. The major issues in spam review detection are redundant, noisy and irrelevant features in the dataset. To resolve this, optimization approach is necessary for selecting the best feature subset. Hence, this paper proposes Hybridization of Improved Binary Particle Swarm Optimization (iBPSO) with Harmony Search Algorithm (HSA) utilized with Naive Bayes for optimization process to improve the classification performance. Experimentation result proves that hybrid iBPSO_HSA outperformed the existing approach by obtaining the maximum accuracy of 95.63% for review spam dataset when compared with existing CS_NB and BPSO_NB which achieved only 83.87% and 89.23%. The experimental result proves that the proposed hybrid method increases the classification accuracy.</p>
	<p style="text-align: center;">The Integrated Software System of National Health Insurance Budget</p> <p style="text-align: center;">Diena Noviarini Faculty Of Economics, State University Of Jakarta, Indonesia</p> <p style="text-align: center;">Rida Prihatni</p> <p style="text-align: center;">Abstract</p>

<p>Diena Noviarini GICICRST1705075</p>	<p>The National Health Insurance budget reporting (NHI) must meet the principles of the Social Security System that include transparency and accountability. However, in daily practices there are still obstacles found because there is no orderly in population administration that their ID cards being doubled or faked because of the lack of administrative oversights so that funds of NHI not well targeted, less in maximum health services for human resources are limited and the implementation of programs that are less effective when viewed from a budget that is not achieve the target. In the framework of the health budget accountable reporting then being made to create models of Integrated Software System that combines databases of information on population administration in relation of accurate budget management information.</p> <p>In the designing of the model of the software we used method of study, methods of analysis with fishbone diagram and web-based software design method. The method of analysis in the form of action research is aimed to examine the issues that facing the Local Government Unit (LGU) health department in the province of Banten and health care centers in Banten. The design method is used to design a model of the new system is based on data taken from the interview with LGU in the form of prototype software that can solve their problems. Hardware design of prototype software using a web server and client hardware and software for programming, interpreter and database servers as well as software for the client.</p> <p>Results that is going to be achieved is to produce software prototype to generate accurate reports, which is transparent and accountable related in health budget in the provincial government of Banten.</p> <p>Keywords: NHI program, model of Integrated Software System, budget management, transparency and accountability</p>
<p>Monika Saini GICICRST1705080</p>	<p>New Ratio Estimators Using SRS and SRSS for the Estimation of Population Mean</p> <p>Monika Saini Department of Mathematics & Statistics, Manipal University Jaipur, Jaipur (Rajasthan) - 303007</p> <p>Abstract</p> <p>The aim of this paper to proposes ratio estimators for the population mean by using auxiliary information efficiently under stratified random sampling (SRS) and stratified ranked set sampling (SRSS). We obtain the bias and mean square error (MSE) for the proposed estimators and show that the proposed estimator under SRSS is more efficient than the estimator under SRS. The results have been illustrated numerically through simulation study.</p> <p>Keywords: Finite Population Stratified Random Sampling Stratified Ranked Set Sampling, Auxiliary Variable Ratio Estimator Efficiency.</p>
<p>Ashish Kumar GICICRST1705081</p>	<p>Analysis of a Redundant System with Priority and MRT</p> <p>Ashish Kumar Department of Mathematics and Statistics, Manipal University Jaipur, Rajasthan, India</p> <p>ABSTRACT</p> <p>The main goal of the present study is to analyze a redundant system by using the concept of priority to operation over Preventive Maintenance (PM) and Maximum Repair Time (MRT). For this purpose, two stochastic models are developed. The concept of MRT is studied in the second model in addition to the assumptions of first</p>

	<p>model. There is a single server who visits the system immediately as and when required. The server takes the unit under preventive maintenance after a maximum operation time at normal mode if one standby unit is available for operation. If the repair of the failed unit is not possible up to an MRT, failed unit is replaced by new one. The failure time, maximum operation time and MRT distributions of the unit are considered as exponentially distributed while repair and maintenance time distributions are considered as arbitrary. Various measures of system effectiveness are obtained by using the technique of semi-Markov process and RPT. To compare the performance of stochastic models graphs for several reliability measures are drawn.</p> <p>KEYWORDS: Redundant system, Preventive maintenance, Operation, Maximum Repair Time</p>
 <p>Adedayo, A. V. GICICRST1705082</p>	<p style="text-align: center;">Another Approach To Evaluating Scientific Collaboration</p> <p style="text-align: center;">Adedayo, A. V. Department of Metallurgical Engineering; Kwara State Polytechnic, PMB 1375, Ilorin</p> <p style="text-align: center;">Abstract</p> <p>One of the top interests in science policy is the issue of research collaboration (Basu and Kumar, 2000). Research collaboration is a sophisticated cooperative arrangements among individuals, groups, departments, institutions, sectors and countries (Voutilainen and Kangasniemi, 2015; Katz and Martin, 1997), and it has become the norm in every field of scientific research. Many studies have attempted to investigate various roles of collaborative research. As a result, many services aimed at quantification of extent of collaboration are now available. These include the Collaboration Score of Nature Index (Nature Index, 2015), Collaboration Metrics of Centre for Science and Technology Studies (CWTS), Leiden; International Collaboration Measure of Scimago (Scimago, 2017) etc.</p>
<p>Indeewar Kumar GICICRST1705083</p>	<p style="text-align: center;">Boundary Layer Flow in the Vicinity of the Forward Stagnation Point of the Spinning and Translating Sphere</p> <p style="text-align: center;">Indeewar Kumar Department of Mathematics & Statistics, Manipal University Jaipur, Rajasthan, India</p> <p style="text-align: center;">Abstract</p> <p>Exact solutions are important not only in its own right as solution of particular flows, but also serve as accuracy check for numerical solution. Exact solution of the Navier-Stokes equation are, for example, those of steady and unsteady flows near a stagnation point, Stagnation point flows can either be viscous or inviscid, steady or unsteady, two dimensional or three dimensional, normal or oblique and forward or reverse. The classic problems of two dimensional and three dimensional stagnation point flow are associated with the names of Hiemenz and Homan A novel radial stagnation point flow impinging axi symmetrically on a circular cylinder was reported by Wang. The present paper deals with the laminar boundary layer flow and heat transfer in the stagnation region of a rotating and translating sphere with uniform magnetic fields. The governing equations of flow are derived for $\xi = 0$ ($t^* = 0$) and $\xi = 1$ ($t^* \rightarrow \infty$) and solutions in the closed form are obtained. The temperature and velocity fields for $\xi = 0$ are numerically computed. This shows that the thermal boundary layer thickness decreases as Prandtl number Pr increases. The surface heat</p>

	<p>transfer (28) increases with the Prandtl number Pr. The surface heat transfer (28) at the starting of motion is found to be strangely dependent on the Prandtl number Pr. But it is dependent of magnetic field, buoyancy force Bp and Rotation Parameter Ro.</p> <p>Keywords - Temperature field, velocity field, uniform magnetic field, buoyancy force, Rotation Parameter</p>
<p>Septian Ramadan GICICRST1705084</p>	<p>Production of Ethanol from Carbon Dioxide by Electrochemical Synthesis Method Using Cu-Zn Electrode</p> <p>Septian Ramadan Department of Chemistry, Faculty of Mathematic and Natural Science, Islamic University of Indonesia</p> <p>Sholah Fariduddin Department of Chemistry, Faculty of Mathematic and Natural Science, Islamic University of Indonesia</p> <p>Afianti Rizki Aminudin Department of Chemistry Education, Faculty of Mathematic and Natural Science, Islamic University of Indonesia</p> <p>Antisa Kurnia Hayatri Department of Statistic, Faculty of Mathematic and Natural Science, Islamic University of Indonesia</p> <p>Riyanto Department of Chemistry, Faculty of Mathematic and Natural Science, Islamic University of Indonesia Department of Chemistry Education, Faculty of Mathematic and Natural Science, Islamic University of Indonesia</p> <p>Abstract</p> <p>A research on conversion of carbon dioxide to ethanol by electrochemical synthesis method has been done. The conversion process is carried out using a NaHCO₃ electrolyte solution at an electrochemical reactor equipped with a cathode and anode. As the cathode is used Cu-Zn, while as anode is used carbon. The effect of electrolysis time, the potential and concentration of NaHCO₃ solution were investigated to determine the optimum condition of the electrochemical synthesis process to convert carbon dioxide to ethanol. The result of the electrochemical synthesis process was analyzed by gas chromatography to determine the content of the compounds produced qualitatively and quantitatively. The optimum electrochemical synthesis condition to convert carbon dioxide to ethanol is electrolysis time, potential and concentration of sodium bicarbonate solution are 90 minutes, 3 volts and 0.4 M. The result show conversion of carbon dioxide to ethanol using electrochemical synthesis method is 10.44%.</p> <p>Keywords: Carbon Dioxide, Cu-Zn Electrode, Electrochemical Synthesis, Ethanol, Optimum Condition.</p>
<p>Andi Musrah GICICRST1705085</p>	<p>What makes people accept or reject information?</p> <p>Andi Musrah School of Psychology, The University of Bristol, UK</p>

	<p style="text-align: center;">Abstract</p> <p>To find alternative solutions for debunking mislead information, one should consider the nature of the content of information. This study mimics mislead information through a sequential presentation of evidence. A single completed data were isolated starting from lessened data points to more added data points. The first graphs will likely to be misleading as only a few information, derived from uncertain data trend's movement, were presented. Participant's reasoning toward misleading and non-misleading information was measured by asking them to extrapolate the data into some projections for future trends. The result shows that mislead information affects more inaccurate projection compared to non-misleading information, adding more information was found to increase better understanding. At the end of the experiment, we presented again the information content but in a single graph. Differences between respond on sequential presentation and simultaneous presentation did not apparent, assuming that comprehension of being misled was not effectual. Credibility judgment was measured on each graph but did not correlate with the actual attitude of extrapolation observation. Finding from this study also showed that people's understanding of evidence was not affected whether by a sequential or simultaneous presentation. A possible explanation is in the context of incompatible visual presentation and uncalculated time responds. Participants' judgment toward the misleading and non-misleading information was not affected by the political affiliation, vaccination and climate science acceptance. Opposite to earlier studies, political views and acceptance toward scientific issue were not correlated and did not determine the judgment of credibility.</p>
<p>Nourelhouda Mohamed GICICRST1705086</p>	<p style="text-align: center;">Detection of Coastal Changes in Alexandria Governorate Using Remote Sensing Techniques</p> <p style="text-align: center;">Nour El-Houda Ahmed Mohamed Sanitary Engineering, Alexandria University, Alexandria, Egypt</p> <p style="text-align: center;">Prof. Dr. Mohamed Sadek Eladawy Department of Sanitary Engineering, Faculty of Engineering, Alexandria University</p> <p style="text-align: center;">Prof. Dr. Waled Abdelazem Ibrahim Elbarky Department of Sanitary Engineering, Faculty of Engineering, Alexandria University</p> <p style="text-align: center;">Ass. Prof. Mamdouh El- Hattab Department of Natural Resource surveys, Institute of Environmental studies and Research, University of Sadat City</p> <p style="text-align: center;">Abstract</p> <p>Coastal change detection is critical in coastal zone application, so accurate detection and proper monitoring of the coast is very essential to understand the coastal process and dynamics of various coastal features which will be helpful in accessing the dynamic nature of coast .This study deals with the coastal change detection of Alexandria Governorate using two Landsat multitemporal imageries acquired in 2002 and 2014. The study consists of several steps, the first one is the unsupervised classification which is carried out using ISODATA algorithm then separability analysis techniques using both of mean plot and divergence matrix was performed to obtain the final classes representing land cover in the study area. As a following step, the supervised classification training sites is merged with the unsupervised</p>

	<p>classification to yield a final hybrid classification images. The accuracy assessment of the classification was found to be 82.35% and 85.48% in 2002 and 2014 respectively. The change detection was performed through classification algorithms using post classification technique. The result showed an increase in water turbidity, wetlands and urban classes in addition to a loss in limestone and barren land areas. Keywords: Alexandria, image classification, accuracy assessment, changes detection.</p>
<p>Lijia Cheng GICICRST1705087</p>	<p>A study of preparation of thermos-sensitive hydrogel/tricalcium phosphate bio composite and the bone formation in mice</p> <p>Lijia Cheng Medical School, Chengdu University, China</p> <p>Jianhong Yang, Min Zhang, Yile Zeng, Tian Yu Medical school, Chengdu University, Chengdu, 610106, China</p> <p>Abstract</p> <p>Objective: To prepare a type of thermos-sensitive hydrogel/tricalcium phosphate (TSH/TCP) biocomposite, and investigate its osteogenic ability. Methods: The TSH was dissolved at 4°C, then the TCP powder was added into TSH at a ratio of 24/76, and the 24TSH/76TCP biocomposite was prepared above 27°C. Next, the composite materials, hydroxyapatite (HA) and β-tricalcium phosphate (β-TCP) were implanted into the thigh muscles of BALB/c mice; twelve weeks after the operation, three types of materials were harvested, fixed and paraffin embedded, then the sections were performed histological staining to observe the new bone formation. Results: At 12 weeks, a large number of new bone tissues were detected in both TSH/TCP and β-TCP materials with different formation mode; however, there wasn't any bone tissues in HA. Conclusion: TSH/TCP is a biocomposite which can be shaped into any shape according to different needs, and it has strong osteogenic ability in mice. Keywords: thermos-sensitive hydrogel; tricalcium phosphate; osteoinduction; hydroxyapatite</p>
<p>Tian Yu GICICRST1705088</p>	<p>Synthesis, characterization and biological evaluation of some organochalcogen antipyrine derivatives as potential non-steroidal anti-inflammatory drugs (NSAIDs)</p> <p>Tian Yu College of Medicine (School of Nursing), Chengdu University, Chengdu, 610106, China</p> <p>Li-jia Cheng College of Medicine (School of Nursing), Chengdu University, Chengdu, 610106, China</p> <p>Wen-bo Ma Antibiotics Research and Re-evaluation Key Laboratory of Sichuan Province, Sichuan Industrial Institute of Antibiotics, Chengdu University, Chengdu 610052, China</p> <p>Feng Liu College of Medicine (School of Nursing), Chengdu University, Chengdu, 610106, China</p> <p>Xin-jie Lian</p>

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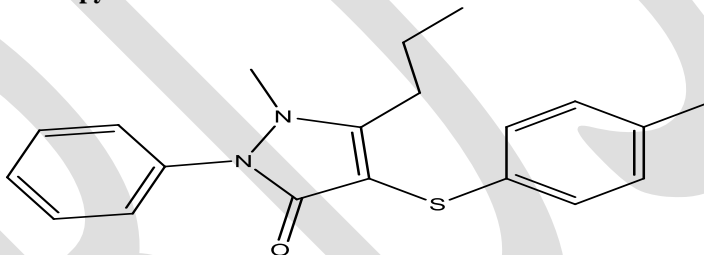
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Abstract

The synthesis of a novel series of organochalcogen antipyrene derivatives is described in this paper. All the newly synthesized compounds were characterized by NMR, mass spectroscopy and examined for their anti-inflammatory activities using carrageenin-induced paw edema and rat granuloma bioassays. All of these compounds have significant anti-inflammatory properties in both applied methodologies and in particular, compounds 4i and 4l indicated notably higher effective than antipyrene.



Key words: NSAIDs; antipyrene; organochalcogen derivatives

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GICICRST1705089

Influence of Missing Data on the Estimation of the Number of Components of a PLS Regression

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	<p style="text-align: center;">Abstract</p> <p>PLS (Partial Least Squares) regression is a multivariate model for which two algorithms (SIMPLS or NIPALS) can be used to provide its parameters estimates. The NIPALS algorithm has the interesting property of being able to provide estimates on incomplete data set and this has been extensively studied in the case of principal components analysis for which the NIPALS algorithm has been originally devised. Nevertheless, the literature gives no clear hints at the amount and patterns of missing values that can be handled by this algorithm in PLS regression and to what extent the model parameters estimates are reliable. Furthermore, fitting PLS regression on incomplete data set leads to the problem of model validation, which is generally done using cross-validation. We study here the behavior of the NIPALS algorithm, when used to fit PLS regression, for various proportions of missing data and for different missingness mechanism (at random or completely at random). Comparisons with multiple imputations are done. Determining the number of components is determined using and the Q2 criterion the AIC computed by cross-validation, on incomplete data and multiply imputed data. We show that, the Q2 based components selection methods give more reliable results than AIC based methods. For horizontal matrices ($n < m$), the number of components selected by the AIC is systematically larger than the number selected with the Q2 criterion on the incomplete data sets. The AIC overstates the number of components by at least one to two components. For the smaller sample size (n), the multivariate structure of the data was not taken into account for the imputations due to high levels of collinearity and our conclusions must then be interpreted with caution. Furthermore, a proportion of 30% of missing data can be considered as the upper amount of missing data for which the estimation of the number of components is reliable, at least with the Q2 criterion. For vertical matrices ($n > m$), the number of components selected by multiple imputation is close to the number selected on the incomplete data set for each criterion and each missingness mechanism. Finally the missingness mechanism should also be considered when estimating the number of components to be selected, whatever the criterion.</p> <p>Keywords: PLS Regression, NIPALS Algorithm, Missing Data, Multiple Imputation, Number of Components, Cross-Validation.</p>
<p>Abdelmadjid Bouhemadou GICICRST1705092</p>	<p style="text-align: center;">Structural, elastic, optoelectronic properties of the SrCuChF (Ch=S, Se, Te) compounds</p> <p style="text-align: center;">K. Boudiaf, A. Bouhemadou Laboratory for Developing New Materials and their Characterization, Department of Physics, Faculty of Science, University of Setif 1, 19000 Setif, Algeria</p> <p style="text-align: center;">Abstract</p> <p>Structural, elastic, optoelectronic properties of the SrCuChF (Ch=S, Se, Te) compounds were investigated using full-potential linearized augmented plane wave method in the framework of density functional theory as implemented in Wien2k code. Different exchange-correlation (XC) functionals, namely GGA96, GGA08 and LDA, were used to calculate the equilibrium lattice parameters. The elastic properties of the considered materials were investigated by computing the single crystal and polycrystalline elastic moduli, including the elastic constants, bulk modulus, shear modulus, Young's modulus, Poisson's ratio. The obtained results suggest that the investigated materials can be classified as soft materials with ductile character and a considerable elastic anisotropy. For the electronic and optical</p>

	<p>properties, in addition to the aforementioned XC functionals, Tran-Blaha modified Becke-Johnson potential method was used to calculate the optoelectronic properties. We notice here that the spin orbit coupling (SOC) was included in the calculations. Band structure calculations reveal that the considered materials are wide direct band gap semiconductors. The band gap value is decreasing with increasing atomic number Z of the chalcogen element. Computed PDOS diagrams demonstrate that the inter-atomic chemical bonding inside the [CuCh] blocks is of covalent character while that inside the [SrF] ones is of ionic character. Band structure calculations reveal that the considered materials are wide direct gap semiconductors. Optical function spectra, including dielectric function, refractive index, extinction coefficient, reflectivity and energy loss function, were predicted for the [100] and [001] polarized incident radiation in a wide energy range up to 30 eV. The optical spectra show a noticeable anisotropy.</p> <p>Keywords: ab initio calculations; Elastic constants; Electronic band structure; Optical spectra, 1111-like systems</p>
<p>Razali, M.S. GICICRST1705094</p>	<p>Multimodal Sentiment Analysis: A Review</p> <p>Razali, M.S. Faculty of Computer Science and Information Technology, University Putra Malaysia, Jalan UPM, 43400, Serdang, Selangor, Malaysia</p> <p>Halin, A. A. Faculty of Computer Science and Information Technology, University Putra Malaysia, Jalan UPM, 43400, Serdang, Selangor, Malaysia</p> <p>Abstract</p> <p>The magnitude of data generated online is colossal. Most of the data are considered unbiased and personal. In recent years, some organizations have been extracting and exploiting data from social media outlets to perform analytics (hence the term social media analytics) in order to boost, for example, market penetration. The companies foresee good profit making if the necessary trends were able to be identified. For example, data from Twitter posts can be extracted to find out the latest fashion trend among teenagers, or the most sought after car among adults. This analyzed data can then be used as pointers to generate productivity.</p> <p>Keywords—social media analytics, sentiment analysis, multimodal sentiment analysis</p>
<p>M. Vanitha GICICRST1705095</p>	<p>A Facile Synthesis Of Cerium Doped Zinc Oxide/Reduced Graphene Oxide Composite And Its Photoluminescence Study</p> <p>M. Vanitha Research Centre for Nanotechnology and Graphene, Padjadjaran University, Jl. Raya Bandung-Sumedang KM 21, Jatinangor, 45363, Jawa Barat, Indonesia</p> <p>I Made Joni Research Centre for Nanotechnology and Graphene, Padjadjaran University, Jl. Raya Bandung-Sumedang KM 21, Jatinangor, 45363, Jawa Barat, Indonesia</p> <p>Camellia Panatarani Research Centre for Nanotechnology and Graphene, Padjadjaran University, Jl. Raya Bandung-Sumedang KM 21, Jatinangor, 45363, Jawa Barat, Indonesia</p> <p>N. Balasubramanian</p>

	<p>Department of Chemical Engineering, A. C Tech Campus, Anna University, Chennai 600025, India</p> <p>Abstract</p> <p>Cerium doped ZnO/rGO composite were prepared by low temperature hydrothermal process and the synthesized composite was characterized by FTIR, SEM and XRD analysis which confirmed the formation of cerium doped ZnO/rGO composite material. The formation of GO with various oxygen functionalities is confirmed by FTIR analysis. Further XRD pattern reveals the wurzite structure of ZnO with JCPDS card 80-0020 and absence of peak for GO in the composite confirms the reduction of GO during the hydrothermal treatment. The SEM micrograph of the composite shows the spherical shape of the composite material where ZnO is completely camouflaged in graphene matrix. Photoluminescence spectroscopic study revealed that the composite exhibit peaks in the UV and visible region and the incorporation of Ce and graphene inhibit recombination rate of electron-hole pair. Blue emission peak at 409 nm originates from the electron transition from the interstitial Zn levels to the valence band. The synthesized material would be efficiently used for photocatalytic applications and this method also provides synthesis route for the ternary ZnO based composite material with the combination of rare earth metal and rGO.</p> <p>Keywords: Zinc oxide, graphene, cerium, composite, photoluminescence spectra.</p>
 <p>Rafet AKDENİZ GICICRST1705053</p>	<p>Comparison For Speech Coding Algorithms For Total Laryngectomies</p> <p>Rafet AKDENİZ Dept. of Electronics and Telecommunication Engineering, Çorlu Engineering Faculty, Namık Kemal University, 59860 Çorlu, Tekirdağ TURKEY</p> <p>Mesut Oytun OKTAY MTC Makina ve Otomasyon, Veliköy Organize Sanayi Bölgesi, Mimar Sinan Mah. 47. Sok. No:6, 59500 Karaağaç, Çerkezköy Tekirdağ TURKEY</p> <p>Abstract</p> <p>Electrolarynx is used as a noninvasive supporting device for speech restoration in people who have undergone resection operation over their larynxes. This work aims to develop a signal processing method to neutralize the mechanical vibration noise of this device. We investigate the effect of this noise on the speech signal and analyze the performances of various algorithms in a single input system to minimize this noise.</p> <p>Keywords: Total Laryngectomy, Speech Enhancement, Spectral Subtraction.</p>
 <p>Syafaruddin GICICRST1705054</p>	<p>Protocol Analysis of Power System Design with Power World Simulator</p> <p>Syafaruddin Department of Electrical Engineering, Universitas Hasanuddin, Indonesia</p> <p>Salama Manjang Department of Electrical Engineering, Universitas Hasanuddin, Indonesia</p> <p>Satriani Latief Department of Architecture, Universitas Bosowa, Indonesia</p> <p>Abstract</p> <p>The complexity design of power system is probably one of the reluctances for</p>

undergraduate or graduate students to attend power engineering courses. However, using simulation tools will attract and encourage students to have their own design and model as well as its analysis. This paper presents a protocol model of 10-bus system with PowerWorld® simulator includes load flow and fault analysis as design verifications. To obtain a reliable model, the basic knowledge of power system components following specific criteria must be fulfilled in the selection of initial data. In the verification stage, the proposed model has been tested with load flow method in the normal and contingency operations, then fault analysis is came after to simulate the proposed model responses in both three-phase and single-phase to ground faults. The measured parameters in these stages are focused on the bus voltage magnitude and its phase angle as one of the reference indicators for the state of power system operation.

Keywords: 10-Bus system, PowerWorld® simulator, load flow, fault analysis, voltage magnitude, phase angle



Saratha Sathasivam
GICICRST1705055

Agent Based Modelling For New Technique In Neuro Symbolic Integration

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Abstract

This paper shows on developing agent based modelling for represent the performance of doing logic programming in Hopfield network by using a new activation function. The effects of the activation function on the performance of the neuro-symbolic integration are analyzed mathematically and compared with the existing method. Computer simulations are carried out to validate the effectiveness on the new activation function. The results obtained showed that the new activation function outperform the existing method in doing logic programming in Hopfield network. The models developed by agent based modelling also support this theory

Keywords: neuro-symbolic, logic programming, Hopfield, activation function.

Wan Aidah Wan Ibrahim
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Effect Of Moisture Content, Incubation Temperature And Time On Physical Properties Of Milk Chocolate

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Abstract

A storage study was conducted for milk chocolates containing 5 levels of moisture (1-3%) incubated at 4 temperatures (16-30°C) for duration of 6 months. The effect on hardness, surface glossiness and final moisture content of the chocolate were determined. Results showed that the hardness of chocolate, measured as the breaking and penetration forces at ambient temperature (24°C), were reduced with the increase in moisture content and storage temperature. Chocolates stored at 16-28°C showed a decrease in hardness as storage time was increased. At storage temperature of 30°C however, the hardness increased with the increase in storage time. The storage of these chocolates at different temperatures (16-30°C) for a period of 6 months however, did not significantly affect their final moisture content. The

	<p>glossiness of the surface was not significantly ($p>0.05$) affected by the moisture content in chocolate but was mainly influenced by its storage temperature and time. The glossiness value was significantly reduced when the chocolate was stored at 28°C and 30°C after a period of one month. The finding demonstrated that the incubation temperature significantly ($p<0.05$) affected textural characteristics and surface glossiness of milk chocolate during storage. Based on this study, the maximum recommended storage temperature for milk chocolate in order to maintain its glossiness and textural quality is below 22°C.</p> <p>Keywords: chocolate, incubation temperature, moisture content, hardness, glossiness.</p>
<p>Khairul Bariah Sulaiman GICICRST1705057</p>	<p>Effect of Different Fermentation Duration of Malaysian cocoa beans on colour and antioxidant properties</p> <p>Khairul Bariah Sulaiman Malaysian Cocoa Board, Cocoa Research and Development Centre Hilir Perak, Peti Surat 30, Jalan Sg.Dulang, 36307Sg. Sumun, Perak Darul Ridzuan, Malaysia</p> <p>Tajul Aris Yang Food Technology Division, School of Industrial Technology, Universiti Sains Malaysia, 11800 Pulau Pinang, Malaysia</p> <p>Fazilah Ariffin Malaysian Cocoa Board, Cocoa Research and Development Centre Hilir Perak, Peti Surat 30, Jalan Sg.Dulang, 36307Sg. Sumun, Perak Darul Ridzuan, Malaysia</p> <p>This study aims to evaluate the effect of different fermentation duration using a shallow box on colour and antioxidant properties of the Malaysian cocoa beans. The fermentation was conducted at the Cocoa Research and Development Centre, Bagan Datuk using 150 kg loading capacity. During fermentation, about 15 kg of fermented beans were taken out randomly at 0, 24, 48, 72, 96 and 120 hours of duration and sundried until moisture reduce to 7.5%. The dried beans produced is assessed for surface colour of cocoa cotyledon by Equivalent Brown score as well as Browning index and antioxidant properties by total antioxidant capacity. Equivalent Brown score demonstrated the increment of brown beans from 37% to 87% from 0 to 120 hours of fermentation. The Browning index showed similar increasing trend. Whereas, antioxidant activities fluctuated with respect to different durations of fermentation.</p> <p>Keywords: Fermentation, Duration, Cocoa, Colour, antioxidant</p>

<p>Hajime Hirao GICICRST1705063</p>	<p>Computational Studies of Organic Reactions on Various Catalytic Platforms</p> <p>Hajime Hirao Department of Biology and Chemistry, City University of Hong Kong, Hong Kong, China</p> <p>Abstract</p> <p>The physical principles used in computational chemistry underlie all branches of chemistry; as such, computational chemistry has unlimited potential to contribute to the advancement of fundamental chemistry in every different subdiscipline as well as to finding solutions to critical challenges that humankind faces today, such as healthcare and energy/environmental issues. With this in mind, our computational exploration of chemistry applies quantum chemistry, multiscale QM/MM and QM/QM approaches, and many other advanced computational chemistry techniques to a broad range of complex molecular systems such as metalloenzymes, transition-metal catalysts, drugs/drug targets, metal-organic frameworks (MOFs), and nanomaterials. In particular, using computational approaches and often with experimental collaborators, we seek to derive information about chemical reaction mechanisms and bonding patterns of these complex molecules. We are also developing efficient computational methods and algorithms, in the hope that our new computational methods will expand the capability of computational chemistry and thereby enable one to simulate the behavior of complex molecular systems with higher reliability and predictability in the future.</p>
 <p>Emiliana Anggriyani GICICRST1705064</p>	<p>Physical Quality Of Golf Glove Leather With Tanning Process By Reduced Chrome</p> <p>Emiliana Anggriyani Leather Processing Technology Department, Polytechnic of ATK Yogyakarta, Indonesia</p> <p>Laili Rachmawati Leather Processing Technology Department, Polytechnic of ATK Yogyakarta, Indonesia</p> <p>Abstract</p> <p>This study aims to explain the physical quality of golf glove leather by using reduced chrome tanned on the sheepskins. This research was conducted in August until October 2015 at Polytechnic of ATK Yogyakarta, Indonesia. The materials used in this study were sheepskins pickle. Research results were analyzed using descriptive analysis of the physical quality of the skin. The results of powder chrome tanning agent tanned showed tensile strength 79,63 kg/cm², elongation 58,12%, tear strength 8,09 kg/cm, and slightly faded. Liquid chrome tanning agent tanned showed tensile strength 117,37 kg/cm², elongation 48,87%, tear strength 17,27 kg/cm, and do not fade. Golf gloves with liquid reduced chrome have a better physical quality than powder chrome tanned in terms of tensile strength, tear strength, and color durability against sweat.</p> <p>Keywords: Golf glove, Reduced chrome, Physical quality</p>
<p>Asimah Hamid GICICRST1705065</p>	<p>Elimination Of Cocoa Storage Pests Using Ethyl Formate As Fumigant</p> <p>Asimah Hamid Cocoa Innovation and Technology Centre, Malaysian Cocoa Board, Lot PT 12621, Kawasan Perindustrian Nilai, 71800 Nilai, Negeri Sembilan.</p>

	<p style="text-align: center;">Abstract</p> <p>Fruit-derived products such as Ethyl formate (EF) can be used as fumigant for eliminating stored product insects. This is due to the fact that they do not pose environmental problems such as depleting ozone layer. Ethyl formate also available naturally and residues left on treated commodities are in trace amount. Fumigant toxicity of EF with concentration from 76 to 380 gL⁻¹ were studied against pupae, larvae and adult of two moth i.e.; <i>Corcyra cephalonica</i> (Stainton) and <i>Ephestia cautella</i> (Walker) and two beetles, i.e.; <i>Tribolium castaneum</i> (Herbst) and <i>Lasioderma serricornis</i> (Fabricius). Result indicated that complete mortality for all stages of insects was detected at concentration of 190 gL⁻¹. Different stages and insect species gave difference response to the toxicity level of EF. Analysis of variance test revealed significant interaction between type of insects and EF concentration for all stages of insects. Lethal concentration (LC99) value for larvae and pupae of all stages of four insects tested showed no significant different among species except for adults of <i>T. castaneum</i> and <i>L. serricornis</i>. However, LC50 value for larvae of <i>E. cautella</i> and pupae of <i>L. serricornis</i> are relatively more susceptible to EF toxicity than other species. The estimated probit regressions were well fitted to the response as the chi-square values for larvae, pupae and adults of the cocoa pests were not significant at 5% level of confident. Therefore, the samples are homogenous. Residue of EF was not found in all samples of whole beans, nibs and cocoa beans (deshelled). Therefore, EF was successfully tested as a fumigant for treatment of pests control for dry cocoa beans upon storage.</p> <p>Keywords: Storage pests, Ethyl formate, Fumigant, Cocoa bean.</p>
<p>Musavir Bashir GICICRST1705066</p>	<p style="text-align: center;">Contemporary Study of Energy Harvesting from Aerodynamic Instabilities: A Green Move Towards Aviation</p> <p style="text-align: center;">Musavir Bashir School of Aerospace Engineering, Universiti Sains Malaysia, Pulau Pinang, Malaysia</p> <p style="text-align: center;">Parvathy Rajendran School of Aerospace Engineering, Universiti Sains Malaysia, Pulau Pinang, Malaysia</p> <p style="text-align: center;">Abstract</p> <p>This paper evaluates the layout and advancement of energy harvesting based on aerodynamic instabilities of an aircraft. Vibration and thermoelectric energy harvesters are substantiated as most suitable alternative low-power sources for aerospace applications. Furthermore, the facility associated with the aircraft applications in harvesting the mechanical vibrations and converting it to electric energy has fascinated the researchers. These devices are designed as an alternative to a battery-based solution especially for small aircrafts, wireless structural health monitoring for aircraft systems, and harvester plates employed in UAVs to enhance the endurance and operational flight missions. We will emphasize on various sources of energy harvesting that are designed to come from aerodynamic flow-induced vibrations, specific attention is then given at those technologies that may offer, today or in the near future, a potential benefit to reduce both the cost and emissions of the aviation industry. The advancements achieved in the energy harvesting based on aerodynamic instabilities show very good scope for many piezoelectric harvesters in the field of aerospace, specifically green aviation technology in the future.</p> <p>Keywords: Energy Harvesting; Aerodynamic Instabilities; Piezoelectric.</p>

<p>Leila D. Landicho GICICRST1705070</p>	<p>Sustainability Outcomes Of Development Pathways In Selected Upland Farming Communities In The Philippines</p> <p>Leila D. Landicho University Researcher, College of Forestry and Natural Resources, UP Los Baños</p> <p>Josefina T. Dizon Professor, College of Public Affairs and Development, UP Los Baños</p> <p>Abstract</p> <p>This article argues that sustainability of the upland farming communities does not rely solely on the development pathways that were undertaken by the upland farmers. The institutional mechanisms also contribute towards sustainable upland farming communities. This argument is based on the study conducted in the three pilot upland communities of the Conservation Farming Villages program in Albay, Ifugao and Negros Oriental, Philippines. From seven focus group discussions (FGDs) with at least 12 participants per FGD for a total of 147 farmers, and farm household survey of 230 upland farmers, research results indicate that there were five development pathways that were undertaken by the upland farmers. These include monocropping in contour, multiple cropping in contour, agroforestry, agroforestry with non-farm activities, and multiple cropping/monocropping without contour. Analysis indicated that the five development pathways contributed to a high level of social, human and political capitals having mean scores of 0.73, 0.55 and 0.54, respectively; a moderate level of physical, financial and natural capital, with mean scores of 0.23, 0.20 and 0.23, respectively; and a very low level of cultural capital with mean score of -0.08. At the community level, on the other hand, research results revealed that the CFV sites in Ligao, Albay and La Libertad, Negros Oriental have almost similar contributions to the sustainability of the upland farming communities, while Alfonso Lista, Ifugao had the lowest. Thus, institutional arrangements with the farmers' association and the local government units also played a key role in the sustainability of the upland farming communities. These results imply the need for a holistic and collaborative engagement towards attaining sustainable upland farming communities.</p> <p>Keywords: institutional arrangements, agroforestry, community capitals, Conservation Farming Villages</p>
<p>Wen Cheng GICICRST1705076</p>	<p>Distinguish Types of Facebook Users: An analysis of categories of words posted on FB walls</p> <p>Wen Cheng National Sun Yat-sen University, Kaohsiung, Taiwan, R.O.C.</p> <p>Abstract</p> <p>This study investigated 1420 participants' usages of words in Facebook posts. Chinese Linguistic Inquiry and Word Count (CLIWC) program was applied to analyze the respondents Facebook posts and categorizes the writing contents into different word categories, such as function words (e.g., pronoun), affect words (e.g., positive/negative emotion words). Cluster analyses were conducted to investigate the underlying structures of the usages of word categories in Facebook posts. The results revealed that there might be four different types of Facebook users based on the categories of words posted. They were (1) leisure type, (2) event description type, (3) affective writing type, and (4) positive emotion releasing by symbols type. By conducting external validations, it was found that individuals whose identity were</p>

	<p>retired individuals were more likely to be categorized to the “leisure type;” individuals who were currently employed were more likely to be categorized to the “event description type;” students mostly belong to the “affective writing type;” whereas it was unclear to distinguish by personal identity and individuals belonging to the “positive emotion releasing by symbols type” were relatively rare. Keywords: Language, CLIWC, Facebook, Text Mining</p>
<p>Dinesha P. GICICRST1705077</p>	<p>Performance analysis of Portable solar Areca nut (Areca catechu L.) dryer</p> <p>Dinesha P. Department of Mechanical and Manufacturing Engineering, Manipal Institute of Technology, Manipal University, Manipal, India</p> <p>Jagannath Korody Department of Mechanical and Manufacturing Engineering, Manipal Institute of Technology, Manipal University, Manipal, India</p> <p>Abstract In this study, areca nut is dried and its drying parameters are investigated experimentally by using newly developed portable solar dryer. Portable solar dryer has equipped with five trays to accommodate areca nut. The weight of the areca nut is determined before placing in the trays for drying. Experiments are conducted with solar dryer and the performance is compared with traditional open sun drying method. At the end of drying experiments, it is observed that the total mass of areca nut decreased from 8.6 kg to 4.85 kg at the end of 19th day of drying where as traditional open sun drying requires 39 days. From the investigation it can be concluded that the newly developed solar dryer shows increased drying rate when compared to traditional open sun drying method. Key words: Portable Solar dryer, agricultural products, open sun drying, closed chamber drying, Areca nut.</p>
<p>Shiva Kumar GICICRST1705078</p>	<p>Study of design parameters on heat transfer characteristics in a helical coiled heat exchanger using CFD</p> <p>Shiva Kumar Department of Mechanical and Manufacturing Engineering, Manipal Institute of Technology, Manipal University, Manipal-576104, India</p> <p>Abstract Heat exchangers are important devices used in power plants and chemical industries. In order to obtain larger heat transfer rate per unit volume helically coiled heat exchangers are preferred over straight tubular heat exchangers. This paper deals with the study of effect of different design parameters like tube diameter, pitch circle diameter and pitch of the coil on heat transfer through helical heat exchanger. A helical coiled heat exchanger was simulated for constant wall temperature boundary conditions. It was observed that nusselt number, heat transfer coefficients and pressure drops were significantly influenced by changing the tube diameter and pitch circle diameter of the coil whereas coil pitch influences the least on the heat transfer characteristics.</p>
<p>Lijia Cheng GICICRST1705087</p>	<p>A study of preparation of thermos-sensitive hydrogel/tricalcium phosphate biocomposite and the bone formation in mice</p> <p>Lijia Cheng Medical school, Chengdu University, Chengdu, 610106, China</p>

	<p style="text-align: center;">Jianhong Yang Medical school, Chengdu University, Chengdu, 610106, China</p> <p style="text-align: center;">Min Zhang Medical school, Chengdu University, Chengdu, 610106, China</p> <p style="text-align: center;">Yile Zeng, Tian Yu Medical school, Chengdu University, Chengdu, 610106, China</p> <p style="text-align: center;">Abstract</p> <p>Objective: To prepare a type of thermos-sensitive hydrogel/tricalcium phosphate (TSH/TCP) biocomposite, and investigate its osteogenic ability. Methods: The TSH was dissolved at 4°C, then the TCP powder was added into TSH at a ratio of 24/76, and the 24TSH/76TCP biocomposite was prepared above 27°C. Next, the composite materials, hydroxyapatite (HA) and β-tricalcium phosphate (β-TCP) were implanted into the thigh muscles of BALB/c mice; twelve weeks after the operation, three types of materials were harvested, fixed and paraffin embedded, then the sections were performed histological staining to observe the new bone formation. Results: At 12 weeks, a large number of new bone tissues were detected in both TSH/TCP and β-TCP materials with different formation mode; however, there wasn't any bone tissues in HA. Conclusion: TSH/TCP is a biocomposite which can be shaped into any shape according to different needs, and it has strong osteogenic ability in mice. Keywords: thermos-sensitive hydrogel; tricalcium phosphate; osteoinduction; hydroxyapatite</p>
<p>Jeong Woo Park GICECG1705074</p>	<p style="text-align: center;">Surface finishing of 3D metallic structure using VECP process</p> <p style="text-align: center;">Uk Su Kim Department of mechanical system engineering, Chosun university, 309, Pilmun-daero, Dong-gu, Gwangju, South Korea</p> <p style="text-align: center;">Jeong Woo Park School of mechanical system and automotive engineering, Chosun university, 309, Pilmun-daero, Dong-gu, Gwangju, South Korea</p> <p style="text-align: center;">Abstract</p> <p>Surface finishing of three dimensional (3D) printed structures built by additive manufacturing (AM) are not easy due to the worse accessibility of the polishing tool into the inside of sophisticated 3D structure when traditional mechanical polishing processes are applied. Because products built using metal powders in the AM process have poor surface quality, they have some limitations of broad application to industrial use. In this paper, 3D samples built using stainless steel powders through selective laser sintering (SLS) process was considered to be analyzed for further polishing process. SLS uses the laser source for irradiating and sintering metal powder selectively. Therefore, surface finishing of 3D samples built by SLS should be approached through non-traditional processes rather than conventional mechanical processing. The electrochemical polishing (ECP) as a non-contact surface polishing process was introduced as a possible substitute for mechanical polishing. ECP has the some advantages that the tool and the workpiece are not in mechanical contact as well as surface can be polished within several minutes. However, complex shapes or inside wall of micro holes cannot be polished easily by high viscosity of the electrolyte or micro bubble generation. Here, we propose a hybrid process that improves machining efficiency by adding vibration to the conventional ECP process.</p>
<p>Mudzakkir Dioktyanto</p>	<p style="text-align: center;">Living Tower Construction as Fish Apartment with Glass Powder/PET Composite</p>

GICECG1705073

Basic Technology

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ABSTRACT

Indonesia is the country with the 4th largest population in the world that is 225 million that every day produce waste both organic and inorganic. Total waste produced by Indonesia each year is 1.29 million tons, making Indonesia the second largest contributor of waste in the world. Inorganic waste cannot decompose easily in the wild, plastic bottles just take 50-100 years to decompose while the glass bottle itself takes 1 million years. The duration of this decomposition process causes waste to contaminate only soil, water, or air if not treated properly. In addition, Indonesia has an area of coral reefs reaching 50,875 square kilometers, or about 18% of the total world. In coral reefs live fish populations and other marine biota recorded 2,200 or 31% species of reef fish in the world are in Indonesian waters. However, illegal fishing and water pollution account for about 70% of dead and damaged coral reefs. As a result, species of marine biota that exist increasingly extinct. These two things are a big problem and should be resolved soon. The Tower of Life as a fish apartment made from glass and plastic bottle waste can overcome the amount of garbage that accumulates and provides a home for the existing marine fish population. The Tower of Life design has a unique shape, in which this life tower has 4 structural building poles around it made from glass powder/ PET composite technology arranged so as to suit marine conditions, and has a main pole as a gathering place for fish made from natural fibers As a place to attach fish eggs. Making Tower of Life is able to reduce the waste of glass bottles, and plastic bottles as much as 6.6 kg for every 1 unit produced. Moreover the Tower of Life can

	<p>preserve the marine ecosystem by replacing the function of coral reefs so as to increase fish populations. Keywords: Composite, Glass powder, Living Tower, PET</p>
<p>Jeong Woo Park GICECG1705074</p>	<p>Surface finishing of 3D metallic structure using VECP process</p> <p>Uk Su Kim Department of mechanical system engineering, Chosun university, 309, Pilmun-daero, Dong-gu, Gwangju, South Korea</p> <p>Jeong Woo Park School of mechanical system and automotive engineering, Chosun university, 309, Pilmun-daero, Dong-gu, Gwangju, South Korea</p> <p>Abstract Surface finishing of three dimensional (3D) printed structures built by additive manufacturing (AM) are not easy due to the worse accessibility of the polishing tool into the inside of sophisticated 3D structure when traditional mechanical polishing processes are applied. Because products built using metal powders in the AM process have poor surface quality, they have some limitations of broad application to industrial use. In this paper, 3D samples built using stainless steel powders through selective laser sintering (SLS) process was considered to be analyzed for further polishing process. SLS uses the laser source for irradiating and sintering metal powder selectively. Therefore, surface finishing of 3D samples built by SLS should be approached through non-traditional processes rather than conventional mechanical processing. The electrochemical polishing (ECP) as a non-contact surface polishing process was introduced as a possible substitute for mechanical polishing. ECP has the some advantages that the tool and the workpiece are not in mechanical contact as well as surface can be polished within several minutes. However, complex shapes or inside wall of micro holes cannot be polished easily by high viscosity of the electrolyte or micro bubble generation. Here, we propose a hybrid process that improves machining efficiency by adding vibration to the conventional ECP process.</p>
<p>Hendra Jaya GICICRST1705098</p>	<p>The Role Of Multimedia Technology (LAVIR-Virtual Laboratory) In Developing Life Skills In Vocational Schools</p> <p>Sapto Haryoko Department of Electronic Engineering, Makassar State University, Makassar, Indonesia</p> <p>Hendra Jaya Department of Electronic Engineering, Makassar State University, Makassar, Indonesia</p> <p>ABSTRACT The success of the vocational high school (Sekolah Menengah Kejuruan – SMK) can not be separated from its learning process either in theory or practical learning. To conduct a practicum, the school will need several factors which are a laboratory for each practical subject, equipment facilities and complete practicum material. Students hope to gain more knowledge and experience as study results, while teachers, on the other hand, expect that practical learning process can bring achievement in term of better cognitive, psychomotor, affective changes, and</p>

	<p>improvement of student lifeskill. After producing a virtual laboratory model, this research carried out trial test on the developed product to several students of partner SMKs and other SMKs in Makassar. It was found that the use of this Virtual Laboratory Model by SMK students can develop their life skills such as personal skills, thinking skills, social skills, and vocational skills. For Personal Skills, the mean score of test is 4.14 (good), Thinking Skills mean score is 4.06 (good), Social Skills mean score is 4.32 (very good), and for vocational skills, the score is 4.30 (very good). Furthermore, in this study, it was also found that data or information on the process of learning life skills (life skills) consists of several aspects: (1) aspects of planning, include: curriculum, financial and facilities; (2) aspects of implementation, including: methods and techniques, media, competence tutor, materials or teaching materials, and time / schedule; (3) aspects of evaluation, including assessment of learning outcomes.</p> <p>Keywords: life skills, vocational school, virtual laboratory</p>
<p>Toyibatul Hidayati GICICRST1705099</p>	<p>The Effectiveness of Syzygium Samarangense Leaves on healing Process of Burns Based on Collagen</p> <p>Ain Yuanita Insani Faculty of Medicine, Jember University</p> <p>Mega Citra Prameswari Faculty of Medicine, Jember University</p> <p>Novail Alif Muharrom Faculty of Medicine, Jember University</p> <p>Toyibatul Hidayati Faculty of Medicine, Jember University</p> <p>Arista Prima Nugrahani Faculty of Medicine, Jember University</p> <p>Abstract</p> <p>Background: The World Health Organization (WHO) estimates the number of death in 2014 caused by burns is 265,000 . Burns can caused skin damage as well as other complication problems such as dehydration, infection, and other multiple organ failures. Syzygium samarangense leaves contain flavonoids and saponins that can increase the activation of macrophages and TGF-B which is important to accelerate the process of collagen formation and wound healing process. Objective: Knowing the effect of Syzygium samarangense leaf extract on the healing process of burn based on collagen. Method: This in vivo study use true experimental design . We made burns by placing a coin that already heated in oven at 70°C for 10 seconds. Rattus Wistar as experimental animals divided into 6 groups (n = 4) with details of Group A (normal), B (positive), C (negative). Groups D, E, and F were the groups that given ointment extract topically in doses of 15%, 30%, and 45% each day's. Termination is done on day 14. Test statistics by using Kruskal Wallis. Results and discussion: From this research, Syzygium samarangense leaf extract can reduce the wound area (p <0,05) and increase the amount of collagen (p <0,05). Conclusion:</p>

	<p>Syzygium samarangense leaf extract can accelerate the healing process of burns. Keywords : Burns, Syzygium samarangense Leaves, Saponin, Flavonoid, Collagen</p>
<p>M. Afif Sulthoni GICICRST1705101</p>	<p>Banana Leaf Antimicrobial Packaging To Prolong Tempe's Shelf Life</p> <p>M. Afif Sulthoni Bogor Agricultural University, Faculty of Agricultural Technology and Engineering, Department of Food Science and Technology</p> <p>Novi Kurnianto Bogor Agricultural University, Faculty of Agricultural Technology and Engineering, Department of Agroindustrial Technology</p> <p>Jeffrey Al Bukhori Bogor Agricultural University, Faculty of Agricultural Technology and Engineering, Department of Food Science and Technology</p> <p>Muhammad Rizky Marhaban Bogor Agricultural University, Faculty of Agricultural Technology and Engineering, Department of Civil Engineering and Environment</p> <p>Fahri R. Hidayat Bogor Agricultural University, Faculty of Forestry, Department of Forest of Management</p> <p>Endang Warsiki Bogor Agricultural University, Faculty of Agricultural Technology and Engineering, Department of Agroindustrial Technology</p> <p>Abstract</p> <p>Tempe is a typical Indonesian food and quite famous among the Indonesian and foreigner. Hopefully, the shelf life of tempe is still in problems and that needs to be considered. Tempe shelf life is relatively short which is about 1–2 days. The purpose of this research was to know how the antimicrobial coating in the tempe's packaging surface could work to prolong the shelf life of tempe. Furthermore the research also analyzed the physic and chemical properties of the product. The method of this research was divided into three stages; producing antimicrobial banana leaf, observing the shelf life, and analyzing physics and chemical properties of the tempe. The material used for the coating as an antimicrobial was onion extract with variation of concentration of 0 (as a control), 20% and 30%. The onion extract was dissolved in ethanol solvent. The results showed that the banana leaf coated with onion extract and then use it for tempe making could increase the shelf life of tempe. The best concentration was the coating treatment with 30% onion extract in which the treatment could increase shelf life of tempe up to seven days after production. Keyword : Banana leaf antimicrobial packaging, tempe, onion extract</p>
<p>Novi Kurnianto GICICRST1705102</p>	<p>Production Process Of Dehydrated And Redehydrated Of Salak</p> <p>Novi Kurnianto Bogor Agricultural University, Faculty of Agricultural Technology and Engineering, Department of Agroindustrial Technology</p>

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Abstract

Salak is a tropical fruit rich in antioxidants and available throughout the year but its utilization is still low so the price is cheap. To increase the added value of salak then it made sponge salak by dried salak and can be restored water content to resemble fresh salak. Making this product begins with the selection of immersion solution that can maintain the color that is by using trehalose. The selection of the right type of dryer was then made. The tray dryer was selected to be the dryer used between the freeze dryer and the oven blower because the texture produced from the dryer was better than the other two dryers and the color of the dried product using the tray dryer was not much different from the original salak color. Before drying, the salak was soaked in sodium metabisulphite for 10 minutes then soaked in trehalose with 15%, 20%, and 25% concentrations. Drying was done at 50°C, 60°C and 70°C for 24 hours with reversing every 6 hours. Then the dried bark tested the water content and its vitamin C content. The results of the test of vitamin C content for 50°C, 60°C and 70°C drying husk were respectively 30.25% 22.55%, and 20.35%. Vitamin C levels at 50°C drying was the best but the water content was the highest compared to other drying temperatures. The water content of each bark that dried at 50°C, 60°C and 70°C respectively were 28,53%, 25,06% and 22,41% respectively. Then the next step was rehydration / return water into dry bark using hot water temperature 80°C for 5 minutes. The best results were shown by the dried bark at 50°C because it has a texture that almost resembles fresh salak. This was due to salak barking only slightly changed in microstructure.

Keyword : Dehydrated and rehydrated, salak, drying temperature

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