

**CONFERENCE PROCEEDINGS**



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Conference Venue

University of Washington - Rome Center (UWRC), Piazza Del  
Biscayne 95, 00186 Roma, Italy

## **KEYNOTE SPEAKER**



**Prof. Eng. PhD. Marco Casini**  
**Department of Urban Planning, Design and Architecture Technology**  
**Environmental Engineer and PhD in Environmental Engineering Professor of**  
**Architecture Technology and of Environmental Certification of Buildings Department**  
**of Urban planning, Design and Architecture Technology – PDTA SAPIENZA**  
**University of Rome, Rome, Italy**

Prof. Marco Cassini is a leading academic in the Green and Smart Building sector with over 20 years' experience in Building Sciences. He is an environmental engineer, PhD in Environmental Engineering and Professor of Architecture Technology and of Environmental Certification of Buildings at the Faculty of Architecture of Sapienza University. Since 2015 he is Executive Board member of Department PDTA and of Faculty of Architecture. Since 2016 he is the Faculty Advisor of Team Sapienza competing in Solar Decathlon ME 2018. He has authored over 70 scientific publications on energy and environmental efficiency of buildings.

## **PLENARY SPEAKER**

**Dr. Chebbi Rachid**  
**Department of Chemical and Process Engineering Faculty of Science and Technology,**  
**University of Biskra, Algeria**

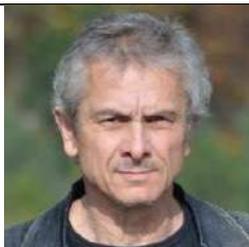
Dr. Chebbi Rachid is Faculty of Science and Technology, Department of chemical and process engineering, University of Biskra, 07000 Algeria. The area of research and teaching includes petroleum, Proton exchange membrane fuel cells, fabrication, and degradation.

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| <b>Gurkan Tuna</b><br><b>GICICRST1806053</b>          | <b>Long-Term Electric Load Forecasting: A Comparison Of The Performance Of Artificial Neural Networks And Classification Methods</b><br><br><b>Gurkan Tuna</b><br>Trakya University, Edirne, Turkey.<br><br><b>Resul Daş</b><br>Firat University, Elazığ, Turkey.<br><br><b>Abstract</b><br>It is very important to plan the supply, demand, transmission, distribution and pricing in order to ensure the successful development of the electricity energy sector and to secure the functioning of the sector. One of the most important problems of the planning works to be done is future demand information. The inability to store electricity energy in large quantities practically explains very well the importance of the accuracy of the demand estimate. The fact that the estimates are correct and close to real values is of great importance for the planning studies of electrical grids. In this study, it is aimed to emphasize the importance of the load-forecasting plan, which is made in order to provide the electricity users with high quality, economical and continuous electricity in the long term. The data set obtained during the period from December 2011 to April 2013 is examined in the study. In this data set, the load forecasting plans of Istanbul, Ankara, İzmir and Şanlıurfa are examined and the results are evaluated. Artificial neural network models, regression trees and support vector machines are used to generate the load-forecasting plan. The results obtained from the estimates made are compared with the results in the literature, obtained using different methods.<br><b>Keywords: Load-Forecasting Plan, Artificial Neural Networks, Regression Analysis, Support Vector Machine, Estimation Methods</b> |
| <b>Sahir-Halouane Fatma</b><br><b>GICICRST1806054</b> | <b>Rehabilitation of hydrocarbons polluted soils by mycoremediation</b><br><br><b>Sahir-Halouane Fatma</b><br>Laboratory Valorisation And Conservation Of Biological Resources Valcore<br><br><b>Oukali Zahia</b><br>Laboratory Valorisation And Conservation Of Biological Resources Valcore<br><br><b>Bensmail Samira</b><br>Laboratory Valorisation And Conservation Of Biological Resources Valcore<br><br><b>Tihar-Benzina Farida</b><br>Laboratory Valorisation And Conservation Of Biological Resources Valcore<br><br><b>Halouane Khadija.</b><br>Laboratory Valorisation And Conservation Of Biological Resources Valcore<br><br><b>Abstract</b><br>The aim of this work is to study the decontamination of soles polluted with hydrocarbons by applying the mycoremediation process, based on the use of fungi.<br>Six strains of molds(MSB1, MSB7, MSC1, MSD3 and MSD5) were isolated and purified from three soils contaminated with hydrocarbons from oil sludge of Ain Aminess and Hassi Messaoud in Algerian Sahara, which have undergone upstream physicochemical analysis in order to know the environmental conditions favoring microbial growth and to estimate their degree of pollution and evaluate the efficiency of treatment methods on depollution. A performance test was used to select the most efficient fungal strains based on their ability to degrade crude oil by assessing their tolerance and adaptation to media at different increasing concentrations of pollutant.  |

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|  | <p>Among the three strains exhibiting the best development in the presence of hydrocarbons, a single strain, MSD5 was selected and used in the biodegradation process according to three methods: and the combination of the two. Bio-treatments were monitored weekly by evaluating the pH and microbial flora in order to estimate the cost-effectiveness of the techniques envisaged, as well as the decomposing capacity of the strain used. According to the results obtained, the combination between the bio-augmentation, bio-stimulation is the most profitable bio-treatment process and the chosen strain was very efficient, with a very high degradation power, reflected by the increasing value of biomass and decreasing pH compared to other processes.</p> <p><b>Key words:</b> Polluted soils, Hydrocarbons, Biodegradation, Mycoremediation, fungi</p>  |
| <p style="text-align: center;"><b>Narges Darvish<br/>Talkhonchek<br/>GICICRST1806055</b></p> | <p style="text-align: center;"><b>Recognizing the Physical role and Impact of Iranian Garden on Iranian Arts; (A Case study of Carpet)</b></p> <p style="text-align: center;"><b>Narges Darvish Talkhonchek</b><br/>         PHD Student in Department of art and architecture, south Tehran branch,<br/>         Islamic Azad University, Tehran, Iran.</p> <p style="text-align: center;"><b>Dr. Hadi Ghodusifar</b><br/>         Assistant Professor, Faculty Member of Islamic Azad University, South<br/>         Tehran Branch</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Crisis in the relationship between man and nature along with population density in the present age have caused the emergence of stressful environments. Nature is effective in responding to human needs including the need for peace and self-prosperity and enhancing the mental health of individuals and groups and the appropriate presence of nature in living environments reduces many of mental, physical and social illnesses in communities. In this regard, architects, organizers and city planners have proposed the idea of designing home, healing and public gardens in cities for citizens in order to meet the need and be related to nature. Iranian garden like architecture, poetry, painting, music and other branches of Iranian art has some subtleties within the framework of tradition and principles and is of the highest ranking in the unity of diversity. In creating Iranian gardens, the verdancy of trees and plants, dynamics and joyful presence of water, the attractive sound of birds, pleasant air, beauty and the ultimate savings and efficiency with their all aspects are considered. Iranian garden in other Persian arts such as carpets, handicrafts, miniature, prose and verse literature and also music has displayed a design of garden or its mindset in itself. And this display is manifested in the most practical art forms such as rug and carpet weaving to the most subjective and fantastic sound of music.</p> <p><b>Keywords:</b> Iranian garden, architecture, carpet, Persian arts, creation of garden</p> |
| <p style="text-align: center;"><b>Chimezie Eguzo<br/>GICICRST1806056</b></p>                 | <p style="text-align: center;"><b>Solar Powered Agro Environment Monitoring System</b></p> <p style="text-align: center;"><b>Chimezie Eguzo</b><br/>         Department of Electrical Electronic Engineering Akanu Ibiam Federal<br/>         Polytechnic, Unwana Ebonyi State Nigeria</p> <p style="text-align: center;"><b>Robert Ben, Jude Okorie</b><br/>         Department of Electrical Electronic Engineering Akanu Ibiam Federal<br/>         Polytechnic, Unwana Ebonyi State Nigeria</p> <p style="text-align: center;"><b>Patrick Ayuba Avong</b><br/>         Department of Electrical Electronic Engineering Federal Polytechnic<br/>         Nasarawa Nasarawa State, Nigeria.</p> <p style="text-align: center;"><b>Abstract</b></p>  |

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|   | <p>Over the years farm practice in Nigeria, especially in rural areas has continually repeated a historical farming procedure with little or no improvement in the farm yield. This practice will not sustain the current population rise in the country unless there is a change in the paradigm. This paper aims at improving agro productivity and reducing resource wastages by using embedded multi-sensor integration to acquire and interpret current climatic condition for the purpose of intelligently advising the farmer based on sensor result. The methodology involved a number of signal processing, data management, wireless communication and power management of the agro-node. The developed node is powered using solar sources and low power electronic circuits based on Arduino UNO. The result of the sensor data has been compared with standard sensor data, other published articles and meteorological statistics from the Nigerian Meteorological Agency.<br/><b>Keywords—</b> Agriculture; Arduino UNO; Sensors, Memory; bluetooth.</p>  |
|  <p><b>Robert Ben Joshua</b><br/>GICICRST1806057</p> | <p style="text-align: center;"><b>Bath Temperature Dependent Structural And Optical Properties of Chemically Deposited Zns Thin Films</b></p> <p style="text-align: center;"><b>Robert Ben Joshua</b><br/>Department of Electrical Electronic Engineering, Akanu Ibiam Federal Polytechnic, Unwana, Ebonyi, Nigeria</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The study reports on the dependence of bath temperatures on thin films of zinc sulphide (ZnS) that were deposited on glass substrate using the chemical bath deposition technology. The films were grown at different bath temperatures in the range 70 oC to 85 oC, with the bath temperatures increased at intervals of 5 oC respectively. The other deposition variables such as complexing agent, pH, source to substrate distance, etc, were kept constant. The effect of the different bath temperatures on the structural, optical, electrical, electro-optical and thermal properties of the films were investigated. In particular, X-ray diffractometry (XRD) was used to study the crystal structure and phases while UV-Spectrophotometer was used for measurement of transmittance and reflectance spectra, enabling to deduce the important optical constants including the optical absorption coefficient, energy bandgap, refractive index, optical density, dielectric constants, and the extinction coefficient. The results indicate that the different bath temperatures has profound influence on the structural, optical, electrical, electro-optical and thermal properties of the films. It was observed that the crystallite size varied between 34 nm to 45 nm in the layers, with higher crystallites size obtained at the optimised bath temperature. The dislocation density was between <math>4.9 \times 10^{16}</math> lines/m<sup>2</sup> to <math>8.5 \times 10^{16}</math> lines/m<sup>2</sup>. The bandgap obtained were direct, and varied between 2.25 to 2.40 eV indicating a blue shift in the band gap. These values are in close agreement with the reports of other authors [1,3]. The electrical resistivity were in the range reported by other research groups [1-4], suitable for various optoelectronic applications. The values of the energy bandgap of the films strongly indicates that the films can be used as buffer layers in hetero-junction solar cell devices.<br/><b>Keywords:</b> bath temperature ; optical constants; crystallite size; dislocation density; blue shift.</p> |
| <p><b>Ezenwa I. A</b><br/>GICICRST1806058</p>   | <p style="text-align: center;"><b>Optical, Solid State, Morphological and Structural Properties of Cadmium doped Copper Oxide (CuO/Cd) Thin Films Fabricated by Solution Growth Technique</b></p> <p style="text-align: center;"><b>Ezenwa I. A</b><br/>Department of Industrial Physics, Chukwuemeka Odumegwu Ojukwu University, Uli Campus, Anambra State, Nigeria</p> <p style="text-align: center;"><b>Okoli N. L.</b><br/>Department of Industrial Physics, Chukwuemeka Odumegwu Ojukwu University, Uli Campus, Anambra State, Nigeria</p>  |

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|   | <p style="text-align: center;"><b>Elekalachi C. I.</b><br/> <b>Department of Physics, Legacy University Okija, Anambra State, Nigeria.</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Copper oxide CuO thin films doped with cadmium Cd were fabricated on glass substrates using solution growth technique. The films growth was based on the reaction between copper (II) chloride dehydrate which served as the precursor of Cu<sup>2+</sup>, Cadmium chloride hemi(pentahydrate) which served as precursor for Cd<sup>2+</sup> in the presence of ammonium hydroxide which was used as a pH stabilizer. EDTA disodium salt acted as complexing agent for slow precipitation of the ions in the solution. The deposited films were annealed at a temperature of 400 K for 3 hours. Optical and morphological investigations were performed. The films were found to have strong absorption between 0.57 a. u. to 0.052 a. u. at wavelength range of 300 nm to 1100 nm. Absorbance of the films decreases as wavelength increases and decreases as concentration of cadmium ion increases. Transmittance increases slightly as wavelength increases and increases as concentration of cadmium ions increases. The films are of low reflectivity power of the order of 0.2. Refractive index ranges from 1.66 to 2.64. Optical band gap energy values of the deposited films were found to be between 1.60 eV to 2.90 eV. Our result shows that the presence of cadmium ions in copper oxide structure alter the optical, solid state and surface morphology of the films. Average particle size of 12.90 nm were obtained from the micrograph images using ImageJ software for image analysis.<br/> <b>Keywords:</b> Copper oxide, Solution growth techniques, optical properties, micrograph, imageJ software, band gap</p>  |
| <p style="text-align: center;"><b>Okereke N. A.</b><br/> <b>GICICRST1806060</b></p> | <p style="text-align: center;"><b>Investigation of Morphological Properties of Copper Aluminum Oxide Thin Films.</b></p> <p style="text-align: center;"><b>Okereke N. A.</b><br/> <b>Department of Industrial Physics, Chukwuemeka Odumegwu Ojukwu University, Anambra State, Nigeria.</b></p> <p style="text-align: center;"><b>Ezenwa I. A.</b><br/> <b>Department of Industrial Physics, Chukwuemeka Odumegwu Ojukwu University, Anambra State, Nigeria.</b></p> <p style="text-align: center;"><b>Umeokafor C. C</b><br/> <b>Department of Industrial Physics, Chukwuemeka Odumegwu Ojukwu University, Anambra State, Nigeria.</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Thin films of Copper Aluminum Oxide (CuAlO<sub>2</sub>) were successfully deposited on indium tin oxide (ITO) conducting glass substrate by electro deposition technique at varying concentration of aluminium ion. The synthesized films were characterized to determine their compositional, optical, morphological and structural properties. The effect of aluminium concentration of deposited films was studied by combining the optical, morphological and structural analyses. The optical absorption spectra of the films show that these films have low transmittance that increases towards the visible and near infrared regions of electromagnetic spectrum. The band gap energy increases from 2.80 eV to 3.10 eV as the concentration of aluminium ion increases. The x-ray diffraction results showed that CuAlO<sub>2</sub> films have rhombohedra crystal structure with preferred orientation at [006] plane. The size of crystallites of the films deposited is found to be around 28 nm and is calculated from the FWHM value of the (006) peak. The value of crystallite size confirmed that the deposited CuAlO<sub>2</sub> is nanocrystalline film.<br/> <b>Keywords:</b> copper aluminum oxide, electrodeposition, thin film, band gap energy, crystallite size.</p> |



István Bajzák  
GICICRST1806061

### Artificial Intelligence and Ethics

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#### Abstract

Processes running independently, whether natural processes or conscious human processes, collide in our children's lives. This effect is hardly conceivable. The processes: Growth of the population; lack of environmentally conscious approach and of active nature conservation; the development of robotic technology, of AI research; researching of planetary ethics; Researching the Programmability of the Morality. That moment will be very difficult for our children. We have to prepare them. Information available to us (and to AI) can be grouped for understanding so that the result will show that the intelligent life form (who is also the creator of AI) is working against the survival of its own living space. So the intelligence-centered moral sense decides that the human being is a risk for information processing intelligence. There will be a disagreement between AI and us. The purpose of the lecture is to present the basics of the necessary training themes. The training is based on SourceCode theory. During the course you can learn the communication approach and ethics that provide solutions. Different ethical approaches and communication theories are not suitable for addressing the above problem. Not because they are specifically human (dualistic). Each system answers the question of the great problem, and where does our knowledge derive from? (From body or mind?) If a paradigm is created by choosing any one, the possibility of dialogue is precluded beforehand, making dialogue impossible with them. Our method is an improved version of the contemplative observational method of neurophenomenology. With this theoretical tool we examined the problems and situations typical of applied ethics and clinical psychology. During the critical work, the method is sophisticated, does not answer the big question, because in this view the question does not arise. It turned out that there is no need to ask the question either. Neither communication theory nor ethics need to choose one of the two categories as one of the certain ones, by choosing to have the existence of the other denial, that is to say, dualism. If we acquire this method, it will be able to communicate with artificial intelligence gaining consciousness and moral sense.

Keywords: representation theory, embodied mind, chinese room, philosophical ants

Muhsin Aydin  
GICICRST1806063

### Investigation of Sensitivity of DNA Probe-based Suspension Array System

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#### Abstract

Pathogenic bacteria are among the leading causes of foodborne illnesses worldwide. Because of their deleterious effects on public health and economy, it is highly desirable to develop an early detection method that can identify foodborne pathogens. Although traditional culturing methods and biochemical tests can identify pathogens with good sensitivity, they are laborious and time-consuming. Alternative methods (e.g. ELISA and PCR) suffer from a lack of specificity and require repetitive tests to detect multiple pathogens from one sample. The goal of this study was to test the sensitivity of DNA Probe-based suspension array system. For this goal, probes and

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|   | <p>targets (with no mismatch sequence, with 2 mismatch sequence, with 5 mismatches, and with 10 mismatches) were designed using sequences from virulence genes and or serovar-specific regions, and presence of targets was determined by reading fluorescent signals from hybridization between probes and synthetically labeled DNA targets using Bio-plex system. The developed DNA Probe-based suspension array was able to detect synthetic target DNA of complementary sequence at the concentration as low as 1 pM, and it was able to detect the difference between no-mismatch targets and 2, 5, and 10 targets at 10 pM concentrations. The results of this study indicated that the developed array can be a rapid and reliable method for simultaneous detection and identification of multiple pathogenic bacteria. This array shows a great potential to be adapted for detection of multiple foodborne pathogens in foods.</p> <p><b>Key words:</b> Flow cytometry, probe, bead, microarray, suspension array system</p>   |
| <p style="text-align: center;"><b>Zouhir Djerrou</b><br/>GICICRST1806065</p>      | <p style="text-align: center;"><b>Evaluation Of Nigella Sativa L. Effects On Lead Acetate Poisoning In Rabbits</b></p> <p style="text-align: center;"><b>Zouhir Djerrou</b><br/>Department Of Nature And Life Sciences, Faculty Of Sciences, University Of August 20th 1955, Skikda, Algeria.</p> <p style="text-align: center;"><b>Rachid Mosbah</b><br/>Department Of Biology, Faculty Of Sciences, University Of Boumerdes, Algeria.</p> <p style="text-align: center;"><b>Hanane Boudeffa</b><br/>Department Of Nature And Life Sciences, Faculty Of Sciences, University Of August 20th 1955, Skikda, Algeria.</p> <p style="text-align: center;"><b>Ibtissem Nettour</b><br/>Department Of Nature And Life Sciences, Faculty Of Sciences, University Of August 20th 1955, Skikda, Algeria.</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The main objective of this study was to determine the possible effects of <i>Nigella sativa</i> L. on acute lead poisoning in <i>Oryctolagus cuniculus</i> rabbits. The experiment was carried out on 18 male adult rabbits, randomly divided in 3 experimental groups of 6 animals each. Group (A) was maintained as an untreated negative control while group (B) was poisoned with lead acetate (positive control). Another group (C) was poisoned as group (B) and was treated with infusion of <i>N. sativa</i> L. Lead acetate and <i>N. sativa</i> were administered by gavage (5 / 7d) for a period of 35 days, group (A) was gavaged with distilled water. At the end of the experiment, a blood sample was taken and hematological, biochemical and histological analyzes, after sacrifice of the animals, were carried out. The results showed disturbance of some haematological and biochemical parameters as well as some structural alterations of the liver, kidney, spleen and testis in the lead poisoned group. The group (C) treated with the infusion of <i>N. sativa</i> showed less alterations compared to group (B). The study concludes that <i>N. sativa</i> could be used to counteract certain toxic effects of lead.</p> <p><b>Key words:</b> Lead, oxidative stress, toxicity, <i>Nigella sativa</i>, antioxidants.</p> |
| <p style="text-align: center;"><b>Folashade A. Ayinde</b><br/>GICICRST1806069</p> | <p style="text-align: center;"><b>Proximate Composition of Dehulled Seeds and Pasting Characteristics of Defatted flour of Three Varieties of Sesame (<i>Sesamum indicum</i> L.)</b></p> <p style="text-align: center;"><b>Folashade A. Ayinde</b><br/>Food Technology Department, Lagos State Polytechnic, Ikorodu, Nigeria</p> <p style="text-align: center;"><b>Folake O. Henshaw</b></p>  |

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|   | <p style="text-align: center;"><b>Food Science and Technology Department, Federal University of<br/>Agriculture, Abeokuta, Nigeria</b></p> <p style="text-align: center;"><b>Catherine O. Eromosele</b><br/><b>Chemistry Department, Federal University of Agriculture, Abeokuta,<br/>Nigeria</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Research Objectives:</b> This research was conducted to provide scientific data on the proximate composition of the dehulled seeds, defatted flour, and pasting characteristics of commercially available varieties of Sesame (Bogoro (late maturing), E8 (Early maturing and improved variety) and Ex-Sudan (exotic early maturing variety).</p> <p><b>Methodology:</b> The seeds were cleaned, dehulled, dried, conditioned and defatted using Piteba oil expeller. The dehulled seeds and defatted flours were analysed for its proximate composition, and pasting characteristics; peak (PV) trough (TR) breakdown (BV), final (FV), setback (SB) viscosity, peak time (PTi) and pasting temperature (PT)) using standard procedures.</p> <p><b>Findings:</b> The proximate composition and pasting characteristics were significantly different (<math>p &lt; 0.05</math>). Protein content of dehulled seeds of Bogoro, E8 and Ex-Sudan was 22.34, 32.54 and 31.13 %. The protein content in the defatted flour of Bogoro, E8 and Ex-Sudan all increased. The PV, TV, BV, FV and SV varied between 17.21 to 73.14, 10.45 to 47.16, 7.11 to 26.78, 11.10 to 61.26 and 0.84 to 11.97 RVU respectively. The peak time and pasting temperature were not significantly different.</p> <p><b>Research outcomes:</b><br/>Pre-treatment process of dehulling and defatting increased the protein, reduced the crude fibre, and increased the Nitrogen Free Extractive contents in the defatted flours. Principal component (PCA) and the correlation analysis of the proximate composition and pasting characteristics showed greater correlation between E8 and Ex-Sudan than Bogoro.</p> <p><b>Future scope:</b> Defatted flour of the sesame should be incorporated into high carbohydrate foods to determine functionality.</p> <p><b>Index Terms -</b> Sesame, proximate composition, Pasting characteristics, Principal Component Analysis.</p> |
| <p style="text-align: center;"><b>Djaber Tazdaït</b><br/><b>GICICRST1806071</b></p> | <p style="text-align: center;"><b>Effects of low direct electric current on aerobic biological treatment of urban<br/>wastewater</b></p> <p style="text-align: center;"><b>Djaber Tazdaït</b><br/><b>Department of Biochemistry and Microbiology, Faculty of Biological and<br/>Agronomical Sciences, Mouloud Mammeri University of Tizi-Ouzou, P.O.<br/>Box 17 RP 15000 Hasnaoua, Tizi-Ouzou, Algeria.</b></p> <p style="text-align: center;"><b>Katia Rabahi</b><br/><b>Department of Biochemistry and Microbiology, Faculty of Biological and<br/>Agronomical Sciences, Mouloud Mammeri University of Tizi-Ouzou, P.O.<br/>Box 17 RP 15000 Hasnaoua, Tizi-Ouzou, Algeria.</b></p> <p style="text-align: center;"><b>Rym Salah</b><br/><b>Department of Biochemistry and Microbiology, Faculty of Biological and<br/>Agronomical Sciences, Mouloud Mammeri University of Tizi-Ouzou, P.O.<br/>Box 17 RP 15000 Hasnaoua, Tizi-Ouzou, Algeria.</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Wastewater is one of the principal source of organic and inorganic contamination of the environment. It is because of its complex composition (proteins, carbohydrates, oils, urea and synthetic organic compounds). Application of electric current in wastewater treatment processes has become, nowadays, a phenomenon of increasing importance. In this work, we proposed to study, in vitro, the effect of low electric current treatment on</p>   |

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|  | <p>the performances of the microorganisms present in activated sludge obtained from the aeration basin of a wastewater treatment plant located in Tizi-Ouzou (Algeria).</p> <p>The trials were carried out in an experimental setup by varying two parameters: the distance between electrodes (<math>d = 2\text{cm}</math>, <math>d = 6\text{cm}</math>) and the density of the electric current (<math>D = 1.4 \text{ mA/cm}^2</math>, <math>D = 3.8 \text{ mA/cm}^2</math>, <math>D = 7\text{mA/cm}^2</math>). Samples were removed at regular time intervals (2h) and were subjected to the following measurements: electrical conductivity, mixed liquor suspended solids, turbidity, and dominant microbial flora study.</p> <p>The results obtained showed a significant improvement in the abatement rate of the two following parameters: turbidity and suspended matters, demonstrating the effectiveness of the approach used in this study. Regarding the results inherent to the bacteriological parameters, it was apparent that electric current affected the composition of the microbial flora of the activated sludge used. Indeed, with the exception of sulfite-reducing clostridia count, it was observed that the numbers of the whole germs under consideration, significantly decreased as a result of direct electric current application.</p> <p>This treatment method might, in the future, lead the way towards profitable application in wastewater treatment plants as an alternative disinfection technique. Besides, it can be useful to optimize and model the impact of electricity using response surface methodology (RSM).</p> <p><b>Keywords:</b> Activated sludge, electric current, pathogens, stainless steel plate, wastewater</p> |
| <p><b>Korkmaz Bellitürk</b><br/><b>GICICRST1806072</b></p> | <p style="text-align: center;"><b>Vermicompost Use in Olive Nursery Farming</b></p> <p style="text-align: center;"><b>Korkmaz Bellitürk</b><br/>Namık Kemal University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Tekirdağ/Turkey.</p> <p style="text-align: center;"><b>Josef H. Görres</b><br/>The University of Vermont, Plant and Soil Sciences Department, Burlington, Vermont-USA</p> <p style="text-align: center;"><b>Hatice Sevim Turan</b><br/>Republic of Turkey Ministry of Food, Agriculture and Livestock, Olive Research Institute, İzmir/Turkey.</p> <p style="text-align: center;"><b>Selçuk Göçmez</b><br/>Adnan Menderes University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Aydın/Turkey.</p> <p style="text-align: center;"><b>Yusuf Solmaz</b><br/>Namık Kemal University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Tekirdağ/Turkey.</p> <p style="text-align: center;"><b>Özlem Üstündağ</b><br/>Adnan Menderes University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Aydın/Turkey.</p> <p style="text-align: center;"><b>Aydın Adiloğlu</b><br/>Namık Kemal University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Tekirdağ/Turkey.</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Growing olive nursery stock is an increasingly profitable agricultural activity in Turkey because of the importance of olives as an agricultural commodity. However, sources for the most common chemical fertilizer used in the cultivation of olive nursery are scarce. In this study, chemical fertilizer which is commonly used by the farmers (100% production material +</p>             |

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|   | <p>chemical fertilizer) was used in combination with an organic fertility amendment, blended at different rates, to test whether reduction of chemical fertilizer use is possible. Organic solid waste as farming and industrial food processing waste are common and underutilized wastes in Turkey making composts a viable source of fertility. Chemical fertilizer replacement rates of 0 %, 5 %, 10 %, 20 % and 40 % vermicompost were used for the production of olive nursery stock. To test the efficacy of the fertilizer treatment, chemical analyses of the seedling growing media and the olive seedlings were carried out before and after the experiment. The results were evaluated using appropriate statistical tests. In the experiment, Gemlik type olive nursery stock was grown using 36 pots, with a total of 6 fertility treatments, 3 replications. Pots and seedlings were destructively sampled after 3 and 6 months when the experiment terminated. The experiment was conducted in the laboratory under controlled conditions. At the end of the third and sixth months of the experiment, and chemical analyses of the growing media (N, P, K, Ca, Mg, Fe, Mn, Zn, Cu and B) and physical development factors of the seedlings (shoot length, diameter of plant body, number of roots, age-dry root and body weight). Changes in the macro and micro element contents with time were not significant but the decrease in the organic matter level was observed the end of 6 months and also the increase on the pH value was observed. The project results suggest that vermicompost is a suitable replacement of chemical fertilizer that does not adversely affect nursery stock growth and quality.</p>   |
| <p><b>Jude O. Ozuomba</b><br/> <b>GICICRST1806073</b></p> | <p><b>Chlorin extract as a light-harvesting natural pigment for dye sensitized solar cells</b></p> <p style="text-align: center;"><b>Jude O. Ozuomba</b><br/>         Department of Physics, Faculty of Science, Imo State University, Owerri,<br/>         Imo State, Nigeria.</p> <p style="text-align: center;"><b>Peter I. Ekwo</b><br/>         Department of Physics and Industrial Physics, Nnamdi Azikiwe University,<br/>         Awka, Nigeria.</p> <p style="text-align: center;"><b>Azubuike J. Ekpunobi</b><br/>         Department of Physics and Industrial Physics, Nnamdi Azikiwe University,<br/>         Awka, Nigeria.</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Dye sensitized solar cells (DSSCs) are devices that convert visible light into electricity based on the photosensitization of wide band-gap semiconductors, such as TiO<sub>2</sub>, SnO or ZnO. Most of the efficient DSSCs are sensitized with the dyes having ruthenium based complexes. We have compared the performance of a dye sensitized solar cell based on chlorin dye with that of a ruthenium based DSSC and a plain cell. Chlorin dye was extracted from cynodon dactylon commonly called bahama grass and titanium (iv) oxide was our wide band-gap semiconductor. The absorption spectrum revealed that the ruthenium dye peaked at ....nm, while the chlorin dye peaked at ....nm. Meanwhile, both dyes showed appreciable absorbance beyond the ultraviolet region. The conversion efficiency for the cells were 1.7%, 1.008% and 0.03% for the ruthenium, chlorin and plain cells respectively. A diurnal study of their electrical characteristics showed that the local dye from cynodon dactylon is a viable sensitizer for TiO<sub>2</sub>. Avaspec 2.1 spectrophotometer was used to obtain the optical absorption spectrum, while an oriel class A solar simulator was used for current-voltage characterization.</p> <p><b>Key Words:</b> Ruthenium, bahama grass, photovoltaic performance, dye sensitized solar cell.</p> |
| <p><b>Ali Ansari</b><br/> <b>GICICRST1806076</b></p>      | <p><b>Predicting the Scores (Personality Type) of Myers-Briggs Type Indicator based on the Scores of Holland Inventory using MLP Neural Network: A</b></p>  |

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|   | <p style="text-align: center;"><b>New Approach to Personality Assessment</b></p> <p style="text-align: center;"><b>Ali Ansari</b><br/>Department of Psychology, Payam Noor University of Evaz, Lar, Iran</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Each individual has a combination of various personality traits. This combination may include extraversion/introversion, and etc. and, if we measure the traits objectively, we'll obtain numeric scores and we could perform mathematical computations on them. Among the most widespread computations are descriptive statistics, correlation and dependence, and also regression analysis which can be used for developing predictive models. In this research, we suggested a new method for predicting a set of personality traits, based on another set. We generated a hypothetical dataset of 300 samples in which each sample includes the scores of Holland Inventory and the scores of MBTI Type Indicator. After statistical analysis (Pearson Correlation Coefficient) of the dataset, results showed that the correlations are not statistically significant. Then, we examined another set of tools called "Artificial Neural Networks" (NNs). The same dataset has been used to train and test a specific artificial neural network called Multilayer Perceptron (MLP) and, Root-mean-square error (RMSE) and Precision Score of the trained network were calculated. Regarding the correlation coefficients obtained in the last step and also the scatter plots of the data, there is no linear relationship between the scores of Holland Inventory and those of MBTI Type Indicator. However, the implemented MLP neural network which has been trained using hyperbolic tan function as activation function, had higher predictive power and can be used to predict output measures (of MBTI Type Indicator) based on input measures (of Holland Inventory). Based on the results, in order to explain relationships between mental attributes and to predict one attribute based on the others, NNs (in particular, MLP) are more powerful than traditional methods, when (1) the relationships are non-linear, and (2) we need numeric outputs and not subjective interpretations based on correlations.</p> <p><b>Key-words:</b> Personality Traits, Predictive Model, Pearson Correlation Coefficient, MLP Neural Network.</p> |
|  <p style="text-align: center;"><b>Wei-Zhen Lu</b><br/>GICICRST1806077</p> | <p style="text-align: center;"><b>Multifractal Behavior of Particulate Matters over Footbridges along Traffic Arterial Road</b></p> <p style="text-align: center;"><b>Wei Pan</b><br/>Department of Architecture and Civil Engineering, City University of Hong Kong, Hong Kong</p> <p style="text-align: center;"><b>Wei-Zhen Lu</b><br/>Department of Architecture and Civil Engineering, City University of Hong Kong, Hong Kong</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Particulate matters (PMs) released by road traffic constitutes an urgent task for megacities due to high volume of vehicles shuttle back and forth along every street in it, and the pedestrians are supposed to be the first batch of innocent victims that exposed to and inhaled the polluted air nearby the road traffic. Since, footbridges or even elevated walkway networks have become a promising resolution to urban space utilization, the location and design of them should be more considered in order to providing a more desirable walking system to pedestrians. In this study, three groups of PM (i.e., 0.3-0.9<math>\mu</math>m (sub-fine), 0.9-2.5<math>\mu</math>m (fine) and 2.5-10<math>\mu</math>m (coarse)) were measured at three different traffic scenario related footbridges (i.e., upstream of the on-ramp, downstream of the on-ramp, and signalized intersection) along an urban artery in Hong Kong, and their traffic volume composition, multifractality and cross-correlation behavior were investigated thereafter.</p>   |

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|   | <p>Multifractal detrended fluctuation analysis (MF-DFA) and Multifractal detrended fluctuation cross-correlation analysis (MF-DCCA) were used simultaneously to quantify the persistency of different PM groups and interaction between them. Results fully indicate that the multifractality and cross-correlation behavior of particulate matters were much highly dependent on the traffic scenario in spatial scale, while finer particles played a more active part in aerosol dynamics related activities in size scale. It is suggest that the nature ventilation style of footbridges should avoid to be built above signalized intersection due to the long persistency of particles and between different particle groups, especially the finer ones. Besides, an enclosed footbridges with particle filter HAVC system installed could be one of the alternative reformations for the existing ones.</p> <p><b>Keywords:</b> Footbridges; On-ramp; Intersection; Particulate matter; Multifractality</p>  |
| <p><b>Rym Salah-Tazdait</b><br/> <b>GICICRST1806078</b></p> | <p style="text-align: center;"><b>Evaluation Of The Bile Acid-Binding Capacity Of Rhodella Violacea Microalgae</b></p> <p style="text-align: center;"><b>Rym Salah-Tazdait</b><br/> <b>Biochemistry and Microbiology, Mouloud Mammeri University of Tizi-Ouzou, Algeria</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Algae may offer promising options for medical applications. Algae are composed by numerous bioactive compounds used in several applications including medical, biotechnology, and food applications.</p> <p>Hypercholesterolemia is defined as high blood cholesterol level. It is a major risk factor for coronary artery disease. In the liver, the hepatic cholesterol 7<math>\alpha</math>-hydroxylase transform the cholesterol into cholic acid which act as biological surfactants aiding food digestion and absorption of lipids in the gastrointestinal tract.</p> <p>Bile acid sequestrants have received increasing attention as therapeutic agents for the treatment of hypercholesterolemia. But these drugs may cause serious side effects for some patients. In fact, relatively large amounts of sequestrants are required to relieve the symptom, which leads to constipation, flatulence, abdominal pain, and colon cancer. This work is devoted to evaluating the bile acid binding capacities of Rhodella violacea microalgae extract.</p> <p>The cholic acid-binding capacity of algal extract was determined by measuring the cholic acid-retarding capacity against a dialysis membrane (MWCO &gt; 8000). The results indicated that in the presence of Rhodella violacea extract, release of cholic acid was retarded by 31.65%, corresponding to 9.95 mmol/L of cholic acid in dialysate. The bile acid binding capacity of algal extract can be explained by trapping in matrix, hydrogen bonds, hydrophobic and hydroxyl group interactions.</p> <p>Rhodella violacea is an attractive target for selective hypocholesterimiant drug development. In fact, Rhodella violacea extract showed a great and specific bile acid retention capacity. We propose the use of the microalgae Rhodella violacea as a nutraceutical to lower cholesterol better than medication. Ongoing efforts should be made into the research and development of algal functional foods with prospect that, in the future, their consumption could lead to a reduction in the prevalence and severity of chronic diseases.</p> <p><b>Keywords:</b> Bile acid-binding capacity, cholic acid-retardation index, hypercholesterolemia, microalgae, Rhodella violacea.</p> |
| <p><b>Seref Soylu</b><br/> <b>GICICRST1806079</b></p>       | <p style="text-align: center;"><b>Examination of operating characteristics of a city bus under urban driving conditions</b></p> <p style="text-align: center;"><b>Seref Soylu</b><br/> <b>Bilecik S Edebalı University Dept. of Mechanical Engineering</b></p>   |

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|  | <p style="text-align: center;"><b>Abstract</b></p> <p>During its operation, a city bus must have high enough traction force to overcome the resistive forces, which are mainly rolling, aerodynamic and grade resistances. Both the rolling and aerodynamic resistances are dependent on the speed, however, the grade resistance is dependent on road grade, only. The losses due to the rolling and aerodynamic resistances are inevitable losses and the recovery of them is impossible. However, depending on the frequency bus stops and driving distance over a route with negative road grade, the braking energy losses can provide an intelligent opportunity to improve the fuel economy.</p> <p>At the present work, basic operating characteristics of a 12 m city bus were examined under urban driving conditions. Tests were conducted over Campus and Karaman routes of Sakarya city of Turkey. The characteristics examined mainly include the speed and altitude profiles of the routes, the traction and braking energies for micro-trips, and the cumulative traction and braking energies for the routes. The results indicated that frequent stop-and-go operations of the bus increases the braking energy demands dramatically. Over the Campus route, which is a 22 km route with 88 micro-trips and an average speed of 19 km/h, the cumulative braking energy is 26 kW-h. It is accounted for 80% of the traction energy, and 14% of the micro-trips have the braking energies greater than 0.5 kW-h. But, over the route Karaman, which is a 41.5 km route with 58 micro-trips and an average speed of 26 km/h, the cumulative braking energy is 38 kW-h. It is accounted for 65% of the traction energy, and 50% of the micro-trips have the braking energies greater than 0.5 kW-h. If 50% of the braking energies are recovered, percentages of the energy savings for the Campus and Karaman routes will be approximately 40% and 30%, respectively.</p> <p><b>Keywords:</b> braking energy, energy recovery, city busses, urban driving, real world driving</p> |
| <p style="text-align: center;"><b>Gökhan Açıkbaş<br/>GICICRST1806080</b></p> | <p style="text-align: center;"><b>Properties of porcelain waste and calcium hydroxide incorporated polymer matrix composites</b></p> <p style="text-align: center;"><b>Gökhan Açıkbaş</b><br/>Vocational School, Metallurgy Program, Bilecik Şeyh Edebali University,<br/>Bilecik 11210, Turkey</p> <p style="text-align: center;"><b>Selçuk Özcan</b><br/>Department of Chemical Engineering, Bilecik Şeyh Edebali University,<br/>Bilecik 11210, Turkey</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Recently polymer based solid surface materials have been used in sanitary ware and laminated kitchen and laboratory work top due to low cost, high chemical resistance, high plasticity, nearly zero water absorption, easy maintenance, and renewability after long time use. They provide opportunities to produce less brittle and complex shaped products compared to ceramic sanitary wares. Porcelain is a ceramic product comprising mullite, quartz crystals, and glassy phase. A quantity of waste porcelain is obtained from local industries during the production of ceramic ware. The most of the waste porcelain bodies are deposited in landfills and only little quantities have been recycled as a raw material for other uses. Thus, it is important and useful to recycle the waste lowering production costs and protecting the environment.</p> <p>In this study recycled waste porcelain particles and Ca(OH)<sub>2</sub> are used as fillers in the production of polymer matrix composites. Waste porcelain particles were used to reduce the production cost and to improve the mechanical strength of the polymer phase Calcium hydroxide (Ca(OH)<sub>2</sub>) was employed as an antimicrobial agent. Waste porcelain bodies were crushed and milled to obtain finely powdered porcelain. Ca(OH)<sub>2</sub> powder</p>   |

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|  | <p>was synthesized from waste marble by the conventional high temperature process. The polymer matrix composites were produced with casting method. The physico-mechanical properties such as bulk density, porosity, 3-point bending strength, water contact angle, Shore hardness, impact resistance were determined. Antimicrobial tests were conducted according to ASTM 2180 as well. The filler powders and the microstructure of the manufactured composites were characterized with SEM, EDS, XRD techniques. In general enhancement in mechanical properties and induced antimicrobial surface effect were observed.<br/> <b>Keywords:</b> Composites, Solid stone, Calcium Hydrate, Porcelain waste, Antimicrobial</p>  |
| <p><b>Nurcan Calis Acikbas</b><br/> <b>GICICRST1806081</b></p> | <p style="text-align: center;"><b>Study on the sliding wear characteristics of hybrid composites: effect of wall tile to glass fiber waste ratio</b></p> <p style="text-align: center;"><b>Nurcan Calis Acikbas</b><br/> Bilecik Seyh Edebali University, Engineering Faculty, Dept. of Metallurgy and Materials Engineering, Bilecik, Turkey</p> <p style="text-align: center;"><b>Gokhan Acikbas</b><br/> Bilecik Seyh Edebali University, Vocational School, Metallurgy Program, Bilecik, Turkey</p> <p style="text-align: center;"><b>Bilge Yaman</b><br/> Eskisehir Osmangazi University, Engineering Faculty, Dept. of Metallurgy and Materials Engineering, Eskisehir, Turkey</p> <p style="text-align: center;"><b>Selçuk Özcan</b><br/> Bilecik Seyh Edebali University, Engineering Faculty, Dept. of Chemical Engineering, Bilecik, Turkey</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Epoxy matrix hybrid composites are essential and needed in a wide range of applications from automotive to sanitaryware due to low density, high performance and low cost. In this study, powdered waste wall tile admixed as filler, and glass fiber reinforced epoxy based hybrid polymer matrix composites (PMC) were manufactured with different filler to reinforcement ratio, followed by their characterization and sliding wear characteristics. The change in the tribological behavior of developed hybrid epoxy matrix composites with the wall tile particulates to glass fiber ratio was investigated. The range of the respective wall tile to glass fiber waste ratios employed were 60:0, 55:5, 50:10, 40:20, 0:60. The hybrid composites were produced with a casting method. The density and porosity of the composites were determined by Archimedes method. The mechanical properties in terms of three point bending strength, impact resistance and Shore hardness of the hybrid composites were determined. Tribological tests were carried out by ball-on-disk configuration and rotational sliding at room temperature against 6Co/WC ball of 3 mm in diameter. 3N of constant test load was applied at a frequency of 8 Hz and the wear distance was 400m. During the tests, the friction coefficient of samples was continuously recorded online by the variation in the tangential force. The results showed that the steady-state CoFs were in the range of 0,31 to 0.47, and the wear rates were between <math>1.73 \times 10^{-5}</math> to <math>3.53 \times 10^{-5}</math> mm<sup>3</sup>/Nm. The correlation between the microstructure, mechanical, physical properties and the tribological behavior was discussed in detail.</p> |
| <p><b>Manuwa. A.A</b><br/> <b>GICICRST1806082</b></p>          | <p style="text-align: center;"><b>Quantitative Phytochemical Analysis And Antioxidant Activities Of The Methanolic Leaf Extract Of Rauvolfia Vomitoria And Its Hypoglycemic Effects On Alloxan- Induced Diabetic Rats</b></p> <p style="text-align: center;"><b>Manuwa. A.A</b><br/> Department Of Science Laboratory Technology (Chemistry Unit), School Of</p>  |

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|   | <p>Pure And Applied Sciences, Lagos State Polytechnic, Ikorodu, Lagos, Nigeria.</p> <p>Momoh. J.O.<br/>Department Of Science Laboratory Technology (Biochemistry Unit), School Of Pure And Applied Sciences, Lagos State Polytechnic, Ikorodu, Lagos, Nigeria.</p> <p><b>ABSTRACT</b></p> <p><b>Research Objectives:</b> <i>Rauwolfia vomitoria</i> (Apocynaceae) is a medicinal plant used in traditional medicinal practice for the treatment of hypertension. The research work determines the phytochemicals, antioxidant and antidiabetic properties of methanolic leaf extract of <i>Rauwolfia vomitoria</i>.</p> <p><b>Methodology:</b> The phytochemical constituents of <i>Rauwolfia vomitoria</i> were determined using standard procedures. The antioxidant activity of the <i>Rauwolfia vomitoria</i> leaf extract was also evaluated in a series of in-vitro assays. The in-vivo antidiabetic property of the plant was also determined using standard procedure.</p> <p><b>Findings:</b> The phytochemical constituents of methanolic leaf extract of <i>Rauwolfia vomitoria</i> indicates the presence of secondary metabolites like terpenoids, tannins, saponins, flavonoids, alkaloids. The extract exhibited significant DPPH scavenging activity. In addition, it exhibited significant ferric reducing power relative to ascorbic acid and BHA (<math>p &lt; 0.05</math>). The total content of phenolic substances was 116.84 mg PE / g DW, flavonoids, alkaloids and total proanthocyanidins contents are 1.1%, 3.7% and <math>0.57 \pm 0.04</math> mg quercetin/g of dry plant material respectively. The weight of diabetic untreated rats were significantly (<math>P &lt; 0.05</math>) reduced when compared to other groups. The animals treated with glibenclamide, 250 and 500mg/Kg body weight of <i>Rauwolfia vomitoria</i> extract showed significant decrease (<math>P &lt; 0.05</math>) of blood sugar level compared to the untreated rats.</p> <p><b>Research Outcomes:</b> The result of the study shows that methanolic leaf extract of <i>Rauwolfia vomitoria</i> has antioxidant and antidiabetic properties.</p> <p><b>Future Scope:</b> The active compounds that are responsible for the hypoglycemic property of <i>Rauwolfia vomitoria</i> should be determined.</p> <p><b>Keywords:</b> Antioxidant activities, diabetic rats, Quantitative phytochemical analysis, <i>Rauwolfia vomitoria</i>.</p> |
| <p>Raflym Nig Limited<br/>GICICRST1806085</p> | <p>Optical Fiber And Wireless Internet Connectivity In Nigerian<br/>Telecommunication System Director</p> <p>Raflym Nig Limited,<br/>1, Lafarge Bus Stop, Akanran Road, Ibadan Nigeria</p> <p>Ajayi, Opeyemi Ayodele<br/>Alumnus Of Federal University Of Technology Akure, Nigeria</p> <p><b>Abstract</b></p> <p>The information age has made technology, particularly information and communication technology, indispensable. Nigeria is often identified as the faster moving economy and one of the most advanced ICT market sectors in the Africa (BBC Report, 2006). It has the largest population in Africa, also making it an attractive and big market.</p> <p>Telecommunication infrastructure remains one of the major issues affecting technology development required for growth and development in Nigeria. There has however been growth and development in infrastructure over the past few years. Nigeria has certainly left the telecom state where there were only a few dial-up-e-mails provides and Internet Service Providers (ISPs) as well as when Nigerian Telecommunication Limited (NITEL) was the only Telecommunications operators. It was a dark era characterized by slow</p>  |

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|   | <p>internet links, poor service, high cost, lack of infrastructure and an unprogressive telecoms monopoly. Things have certainly changed. Deregulation of the telecommunication sector led to emergence of major global system of mobile communication operators in the country. Government had earlier provided the impetus for liberalization by setting up the Nigeria Communications Commission (NCC). Nigeria fiber optic network is massive and very enterprising. The country presently has active submarine fiber optic cables connecting the country to the world.</p> <p>Consequently, the Internet and its connectivity has gradually become a household concern. The connection to the Internet requires physical transfer of signal (data/information) from one point to another. This can either be through physical medium (wire) or through the air (wireless). This study therefore investigates the growth, development and the economic impact of optical fiber and wireless internet connectivity in Nigerian telecommunications system, focusing on the current transmission technologies employed and data transmission speed. It also highlights the future prospects and challenges facing Telecom Technology across the Nation and seeked to identify which of the two technologies is better for signal transmission in terms of bandwidth utilization, performance, reliability, cost effectiveness, resilience, and security. This research also examined the optical fiber and wireless classifications, its applications in communication, structure and construction of optical fiber and wireless technologies.</p> <p>The study adopted the use of secondary sources for the sourcing of materials. A lot of journal articles, research publications, textbooks, white papers and many more were critically studies and comparatively analyzed. It was clear that both media have hitches and challenges. The study showed that although initial cost of acquisition is an inhibitive factor for fiber optic connection, unlimited bandwidth delivery and high Quality of Service (QoS) placed Fiber optics above wireless connectivity in their overall performance. It is finally concluded that the tremendous advancement in optical fiber and wireless internet connectivity as well as the resultant radical changes and advances in the techniques of data and information processing, storage, retrieval and dissemination in Nigeria within a decade is, no doubt, a revolution.</p> <p><b>Keywords:</b> Internet Connectivity, Optical Fiber, Quality of Service, Wireless Technology, Nigerian telecommunications Limited (NITEL).</p> |
| <p style="text-align: center;"><b>Ogundipe</b><br/><b>GICICRST1806086</b></p>               | <p style="text-align: center;"><b>Population Growth And Quality Of Life In Nigeria</b></p> <p style="text-align: center;"><b>Ogundipe, Kayode Samuel</b><br/><b>Department Of Business Administration &amp; Management,</b><br/><b>Moshood Abiola Polytechnic, Abeokuta</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Nigeria's population growth is becoming worrisome to economic analysts due to its effect on the quality of well being of the people. Although population growth itself put great pressure on the environment and the available resources, it is however assumed that well managed abundant resources can enhance better quality life. Therefore, having more than 72% Nigerians who are extremely poor despite moderate consistent gross domestic product, GDP has failed to measure the true quality of life in most developing nations. Following related scholarly works, the research seek to know whether available resources can sustain the fast growing population. This research however prescribes a model for enhancing better quality life amidst fast growing population. It uses data from various agencies such as World Bank, CBN, NBS, CIA and NPC with a simple descriptive analysis.</p> <p><b>Keywords:</b> population growth, quality of life, resources, Gdp</p>   |
| <p style="text-align: center;"><b>Ajayi, Opeyemi Ayodele</b><br/><b>GICICRST1806087</b></p> | <p style="text-align: center;"><b>Optical Fiber And Wireless Internet Connectivity In Nigerian Telecommunication System</b></p>  |

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|   | <p style="text-align: center;"><b>Ajayi, Opeyemi Ayodele</b><br/> <b>Alumnus Of Federal University Of Technology Akure, Nigeria</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>The information age has made technology, particularly information and communication technology, indispensable. Nigeria is often identified as the faster moving economy and one of the most advanced ICT market sectors in the Africa (BBC Report, 2006).It has the largest population in Africa, also making it an attractive and big market.</p> <p>Telecommunication infrastructure remains one of the major issues affecting technology development required for growth and development in Nigeria. There has however been growth and development in infrastructure over the past few years. Nigeria has certainly left the telecom state where there were only a few dial-up-e-mails provides and Internet Service Providers (ISPs) as well as when Nigerian Telecommunication Limited (NITEL) was the only Telecommunications operators. It was a dark era characterized by slow internet links, poor service, high cost, lack of infrastructure and an unprogressive telecoms monopoly. Things have certainly changed.</p> <p>Deregulation of the telecommunication sector led to emergence of major global system of mobile communication operators in the country. Government had earlier provided the impetus for liberalization by setting up the Nigeria Communications Commission (NCC).</p> <p>Nigeria fiber optic network is massive and very enterprising. The country presently has active submarine fiber optic cables connecting the country to the world.</p> <p>Consequently, the Internet and its connectivity has gradually become a household concern. The connection to the Internet requires physical transfer of signal (data/information) from one point to another. This can either be through physical medium (wire) or through the air (wireless).</p> <p>This study therefore investigates the growth, development and the economic impact of optical fiber and wireless internet connectivity in Nigerian telecommunications system, focusing on the current transmission technologies employed and data transmission speed. It also highlights the future prospects and challenges facing Telecom Technology across the Nation and seeked to identify which of the two technologies is better for signal transmission in terms of bandwidth utilization, performance, reliability, cost effectiveness, resilience, and security. This research also examined the optical fiber and wireless classifications, its applications in communication, structure and construction of optical fiber and wireless technologies.</p> <p>The study adopted the use of secondary sources for the sourcing of materials. A lot of journal articles, research publications, textbooks, white papers and many more were critically studies and comparatively analyzed. It was clear that both media have hitches and challenges. The study showed that although initial cost of acquisition is an inhibitive factor for fiber optic connection, unlimited bandwidth delivery and high Quality of Service (QoS) placed Fiber optics above wireless connectivity in their overall performance.It is finally concluded that the tremendous advancement in optical fiber and wireless internet connectivity as well as the resultant radical changes and advances in the techniques of data and information processing, storage, retrieval and dissemination in Nigeria within a decade is, no doubt, a revolution.</p> <p><b>Keywords:</b> Internet Connectivity, Optical Fiber, Quality of Service, Wireless Technology, Nigerian telecommunications Limited (NITEL).</p> |
| <p style="text-align: center;"><b>Cem Gök</b><br/> <b>GICICRST1806103</b></p> | <p style="text-align: center;"><b>Graphene-Diatom-Alginate Hydrogel For Efficient Removal Of Lanthanum Ions From Water</b></p> <p style="text-align: center;"><b>Cem Gök</b><br/> <b>Pamukkale University, Faculty Of Technology, Metallurgical And Materials</b></p>  |

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|   | <p style="text-align: center;"><b>Engineering, 20020 Kinikli, Denizli, Turkey</b></p> <p style="text-align: center;"><b>Yusuf Özcan</b><br/>Pamukkale University, Faculty Of Technology, Biomedical Engineering,<br/>20020 Kinikli, Denizli, Turkey</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Here, we report on the removal performance of graphene-diatom-alginate hydrogel for the adsorption of lanthanum ion from aqueous solution. Prepared composite hydrogel material characterized and physicochemical parameters of adsorption process are investigated for optimum uptake conditions. Adsorption mechanisms were searched using experimental results and calculated parameters from some models as thermodynamic and isothermal. The maximum adsorption capacity of the Graphene-Diatom-Alginate Hydrogel was found to be 281.1 mg/g. According to results, prepared composite was proven to be potent material with reducing the concentration of lanthanum with high efficiency in aqueous solution. The results of microstructures, morphological and mechanical properties, adsorption capacities of material confirm that the embedding of GO and diatom in situ crosslinking technology make hydrogel promising candidate in waste management and also radiochemical pollution cleanup.</p> <p><b>Keywords: Hydrogel, lanthanum, adsorption, graphene, diatom, alginate.</b></p>   |
|  <p><b>Felix Kwame Nyarko</b><br/>GICICRST1806104</p> | <p style="text-align: center;"><b>Corporate Governance and Performance of Firms: An Empirical Evidence from the Banking Sector of Ghana</b></p> <p style="text-align: center;"><b>Felix Kwame Nyarko</b><br/>School of Economics and Finance, Jiangsu University, 212000, China</p> <p style="text-align: center;"><b>Yusheng Kong</b><br/>School of Economics and Finance, Jiangsu University, 212000, China</p> <p style="text-align: center;"><b>Naiping Zhu</b><br/>School of Economics and Finance, Jiangsu University, 212000, China</p> <p style="text-align: center;"><b>Ethel Dzidefo Asimah</b><br/>School of Economics and Finance, Jiangsu University, 212000, China</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The study investigates the relationship between Corporate Governance and the Performance of Banks in Ghana using their financial performance. Primary and Secondary data were collected through the administration of structured questionnaires and from the Ghana Association of Bankers respectively. In analyzing the data, Panel Data Methodology was used. The findings show that large board size, long serving CEOs, size of audit committee, audit committee independence, foreign ownership, institutional ownership, annual general meeting and dividend policy are positively related and associated with the financial performance of banks in Ghana. The banks are encouraged to adopt good corporate governance practices to improve on their financial performance and also protect the shareholders. Most importantly, the regulatory authorities must ensure compliance with good corporate governance and apply the appropriate sanctions for non-compliance to help the growth and development of the banking sector. The main contribution of the study to knowledge lies in its effort in strengthening corporate governance beyond the rights and responsibilities of different stakeholders in the management of a firm into areas involving the relationship between finance providers and a firm, compliance with legal, ethical and environmental needs of the society among others. This contribution has in no small way helped in enhancing my understanding about the interpretations which have shaped the corporate governance in relation with performance of the firm both in theory and practice.</p> |

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|  | <p><b>Key Words:</b> Corporate Governance, Firm Performance, Ghana Association of Bankers</p>   |
| <p><b>Baydaa Abdulridha Kamil</b><br/>GICICRST1806105</p>  | <p style="text-align: center;"><b>Study On Molecular Characteristics Of Alternaria Species Isolated From Tomatoes Based On Rflp-Pcr Technology</b></p> <p style="text-align: center;"><b>Baydaa Abdulridha Kamil</b><br/>Thi-Qar University, Thi-Qar ,Iraq</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Abstract—</b>Most commercial cultivars of tomato, <i>Lycopersicon esculentum</i> Mill., are susceptible to early blight (EB), a devastating fungal (<i>Alternaria solani</i> Sorauer) disease of tomato in the parts of the world. The disease causes plant defoliation. <i>Alternaria</i> spp. cause yield loss in tomato and many other agriculturally important plants. Information on population structure is critical in breeding for resistance to <i>Alternaria</i> blight in tomato. This study was carried out to characterize <i>Alternaria</i> isolates through PCR-RFLP. <i>Alternaria</i> spp. isolates were recovered from local cultivars from different tomato growing districts of Turkey. The PCR based assay was developed for the detection and identification of <i>Alternaria</i> spp.. Using specific primers designed from nuclear ribosomal ITS (Internal Transcribed Spacer). Approximately 600 bp amplicons were obtained from ITS, The PCR products were cut with <i>Hind</i> III, <i>Eco</i>R I , <i>Taq</i>I, <i>Hinf</i>, <i>Hah</i> I and uncut with <i>Pst</i> I restriction endonucleases. There was no polymorphism among <i>Alternaria</i> spp. isolates at ITS regions.</p> <p><b>Key words:</b> Tomato, <i>Alternaria</i>, PCR-RFLP</p> |
|  <p><b>Dr. Szabo Daniel Robert</b><br/>GICICRST1806106</p> | <p style="text-align: center;"><b>The Connections Between The Music And Visual Elements In The Television Commercials</b></p> <p style="text-align: center;"><b>Dr. Szabo Daniel Robert</b><br/>Kautz Gyula Economics Faculty, Department of Economic Analyses,<br/>Szechenyi Istvan University, Gyor, Hungary,<br/>Budapest</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Most of the television advertisements contain some sort of music, which can contribute to the stories in them, and their overall effects and messages, as well. In this paper, the strength of the connection between the visual elements of the ads and the music, the types of these solutions, and also, the inconsistencies in this field were studied. For the sample, 100 ads from the most valuable brands served as a basis. They were examined with an emphasis on the function of the music in them. The aim was to find audiovisual solutions that can be used in the marketing communication.</p> <p><b>Keywords:</b> music, advertising, brands, marketing, communication, commercials, ads</p>   |
| <p><b>Istvan Bajzak</b><br/>GICICRST1806107</p>  | <p style="text-align: center;"><b>The Program And Message Of Ludvig Von Bertalanffy (1), To Architecture-Engineers, Scientists Technology, Artificial Intelligence Developers For The Develop His Responsibility</b></p> <p style="text-align: center;"><b>Istvan Bajzak</b><br/>Bajzak Consulting, MOST Art NGO, Bad Voslau, Austria</p> <p style="text-align: center;"><b>Abstract</b></p> <p>How does the System-philosopher Bertalanffy's strictly scientific approach affect the technical scientists and the engineers works ? Can they allow themselves to take it not seriously? And if they do not consider it, what are the consequences?</p> <p>The two sides of their creative activities, the degree of freedom and responsibility, the difference between dependence and creation, by communication. As long as they find reason to turn away from Bertalanffy's program those persons whose attributing scientific quality to their</p>  |

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|   | <p>profession, you will be assured that you can increase your sense of responsibility and moral sensibility in your work. Consequently, their contribution to sustainable development can, of course, be increased by a paradigm shift. That is why there is a need for the practice-centered teaching of the sourcecode theory and the communication system, and the ethics by based it, both of in academic education and further education.</p>  |
|  <p><b>B. V Samlafo</b><br/>GICICRST1806051</p>      | <p><b>Selenium - mercury antagonism in human blood samples from residents of Wassa West District, a mining area in Ghana</b></p> <p><b>B. V Samlafo</b><br/>Department of Chemistry Education, University of Education, Winneba, Box 25, Winneba-Ghana</p> <p><b>Abstract</b></p> <p>This paper sought to evaluate Se to Hg (Se:Hg) molar ratio in human blood samples from residents of Wassa West district of Ghana, a region which has a long history of gold mining. Determining Hg levels alone in either environmental samples or human body fluids or tissues is necessary but not essential enough to assess the health risk of a given population. The levels of Se in such matrices are the fundamental factor in health risk assessment of Hg exposure and toxicity. Fifty blood samples were collected from volunteers from Wassa West District and were analysed for Hg and Se concentrations. The molar concentrations of each element were calculated and the corresponding Se:Hg molar ratios were determined. The results indicated that the molar concentrations of Se ranged from 0,35 <math>\mu\text{M}</math> to 62.38<math>\mu\text{M}</math> with a mean value of 25.26 <math>\mu\text{M}</math>, while Hg molar concentrations ranged from 0.05 <math>\mu\text{M}</math> to 4.65 <math>\mu\text{M}</math> with a mean value of 0.38 <math>\mu\text{M}</math>. The ratios ranged from 0.97 to 958 with a mean value of 155.40. Apart from, one subject, all the Se:Hg molar ratios were above one, which may imply that the residents have enough Se (well nourished) to prevent Hg toxicity. The precision and accuracy of the analytical methods were determined by the standard reference materials, DORM-2 and GBW 09101. The measurement precision which was determined using relative standard deviation fell within 4%. The results of the analysed samples were within <math>\pm 5\%</math> of the certified values of the standard reference materials.</p> <p><b>Key words:</b> blood, Selenium, mercury, antagonism, molar ratio, mining, health, risk.</p> |
|  <p><b>Samed Çetinkaya</b><br/>GICICRST1806052</p> | <p><b>Effect Of Ethyl Cellulose On The Growth And Photovoltaic Performance Of Cu<sub>2</sub>ZnSnS<sub>4</sub> (Czts) Thin Films</b></p> <p><b>Samed Çetinkaya</b><br/>Department Of Medical Services And Techniques, Mersin University, Mersin 33110, Turkey</p> <p><b>İsmail Bilican</b><br/>Scientific And Technological Research Center (Asübtam), Aksarayuniversity 68000, Aksaray, Turkey<br/>Süreyya Döşlü Çetinkaya</p> <p>Department Of Environmental Engineering, Mersin University, Mersin 33110, Turkey</p> <p><b>Abstract</b></p> <p>Cu<sub>2</sub>ZnSnS<sub>4</sub> (CZTS) thin films were deposited on Molybdenum coated soda lime glass via sol-gel spin coating method using ethyl cellulose (EC) as a surfactant with ratio of 0.50%, 0.75%, 1.00%, 1.50% and 3.00%. The effects of ethyl cellulose (EC) on the compositional, structural, morphological, optical and electrical properties of the CZTS thin films were investigated for the first time. Raman analyses verified the formation of CZTS phase. Optical</p>  |

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|   | <p>band gaps were changed between 1.35 and 1.44eV. The films with smooth and big grain sizes around 1µm were obtained when the adding ratio as volume of 0.75%. Additionally, the highest of IPCE(%) efficiency of 9.86% was obtained for the sample prepared with 0.75%.</p> <p><b>Keywords: Czts, Solar Cells, Renewable Energy, Ethyl Cellulose (EC)</b></p>   |
| <p style="text-align: center;"><b>M.A. Islam</b><br/> <b>GICICRST1806062</b></p>    | <p style="text-align: center;"><b>Production and Characterization of Green Polymer Composite with Natural Fillers</b></p> <p style="text-align: center;"><b>M.A. Islam</b><br/> <b>Professor, Materials and Metallurgical Engineering Department,</b><br/> <b>Bangladesh University of Engineering and Technology (BUET), Dhaka-1000,</b><br/> <b>Bangladesh</b></p> <p style="text-align: center;"><b>M.A.S.R. Saadi</b><br/> <b>Graduate student, Washington University, USA.</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Nowadays, development of environment friendly, high efficiency and low cost engineering materials is the main focus of worldwide researchers, where composites are at the central point. The past decade has seen a renewed interest in developing such wonderful materials. In this regard, polymer composites have gained much more attention because of their light weight, low cost, ease of fabrication, corrosion resistance, good wear property and so on. Likewise, large quantities of sand/clay minerals (also other micron-sized mineral powders) are widely used as reinforcements for polymer matrix composites. This paper concentrates on the effects of particle size of naturally available natural raw sand (white sand and red sand) on the tensile and thermal stability of polyester matrix polymer composites. At first, composites were developed and then tensile tests were conducted using universal testing machine (UTM, Model: Instron 3369). Thermo-gravimetric analysis (TGA) was also performed on the developed composites materials in order to observe the thermal degradation behaviours of the composites. Experimental results revealed that locally available sand might be a potential source of a very low cost reinforcement material for polymeric materials. I has also been found that the property enhancement capability of the ground sand particles increases with decreased particle size.</p> <p><b>Keywords: Raw clay, Polymer sand composite, Reinforcement, Particle Size, Thermal stability.</b></p> |
| <p style="text-align: center;"><b>Chebbi Rachid</b><br/> <b>GICICRST1806068</b></p> | <p style="text-align: center;"><b>Electrode Degradation For Proton Exchange Membrane Fuel Cells (Pemfcs)</b></p> <p style="text-align: center;"><b>Chebbi Rachid</b><br/> <b>Department of industrial chemistry, faculty of Science and Technology,</b><br/> <b>University of Biskra, Algeria</b></p> <p style="text-align: center;"><b>Fadel Ammar</b><br/> <b>Department of industrial chemistry, faculty of Science and Technology,</b><br/> <b>University of Biskra, Algeria</b></p> <p style="text-align: center;"><b>Abdul Amir H.Khdum</b><br/> <b>Department of industrial chemistry, faculty of Science and Technology,</b><br/> <b>University of Biskra, Algeria</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Electrode degradation is the main problem of the lifetime for proton exchange membrane fuel cell performance. Operating conductions with different parameters, as high and low flow rate, high and low pressures for hydrogen and oxygen, high and low temperatures shows the decreasing in the electrode performance and the aggressive operating which the results show the distribution of the catalyst in the cathode by scanning electron microscopic (SEM) and degradation specially in the catalyst. This shows the</p>   |

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|  | <p>detachment of catalyst from the support as shown by X-Ray Diffraction (XRD) peaks and Transmission electron microscopy (TEM). The XRD showed the decrease in intensity peaks after operating, which increase in the degradation of cathode as crystallinities phases, and increasing the particles size of catalyst from 4.14 nm to 5.57 nm more than 100 h operating in single cell 25 cm<sup>2</sup> with different operating conditions as shown by TEM.<br/>Keywords: Electrode fabrication, degradation; characterization</p>   |
| <p style="text-align: center;"><b>M. J. Faraji</b><br/>GICICRST1806074</p>   | <p style="text-align: center;"><b>The Superstring Theory and the Shape of Protons and Electrons</b></p> <p style="text-align: center;"><b>Gh. Saleh</b><br/>Saleh research centre, Shiraz, Fars, Iran</p> <p style="text-align: center;"><b>M. J. Faraji</b><br/>Saleh research centre, Shiraz, Fars, Iran</p> <p style="text-align: center;"><b>R. Alizadeh</b><br/>Saleh research centre, Shiraz, Fars, Iran</p> <p style="text-align: center;"><b>A. Dalili</b><br/>Saleh research centre, Shiraz, Fars, Iran</p> <p style="text-align: center;"><b>Abstract</b><br/>According to “Superstring Theory”, the electron and proton are made of similar tiny supersymmetric strings [1-4]. In this paper we introduce a sample particle that is such tiny supersymmetric string or made of it and also we use scientific achievements of experiments about electron and proton specifications to verify and compare the electron and proton dimensions and masses with this sample. By using logical reasons, we reject one of the methods of measuring of electrons’ radius. Finally, using simple mathematical formulas, we prove that although the electrons and protons are both spherical, but one is hollow and the other is dense.<br/>Keywords:<br/>Superstring Theory; electron structure; proton structure; elementary particles; electron radius; proton radius</p> |
| <p style="text-align: center;"><b>Huseyin Zengin</b><br/>GICICRST1806088</p> | <p style="text-align: center;"><b>An Investigation Of The Effect Of La Addition On Wear Properties Of ZK60 Magnesium Alloy</b></p> <p style="text-align: center;"><b>Huseyin Zengin</b><br/>Karabük University, Metallurgy And Materials Engineering Department, Karabük-Turkey</p> <p style="text-align: center;"><b>Yunus Turen</b><br/>Karabük University, Metallurgy And Materials Engineering Department, Karabük-Turkey</p> <p style="text-align: center;"><b>Yavuz Sun</b><br/>Karabük University, Metallurgy And Materials Engineering Department, Karabük-Turkey</p> <p style="text-align: center;"><b>Hayrettin Ahlatci</b><br/>Karabük University, Metallurgy And Materials Engineering Department, Karabük-Turkey</p> <p style="text-align: center;"><b>Abstract</b><br/>Mg-6Zn-0.5Zr (wt%) magnesium alloys with different amounts of La (0.2, 0.5 and 1 wt%) were produced by low-pressure die casting method and wear properties of the as-cast alloys were investigated. Wear test was carried out on a reciprocating sliding wear apparatus under a load of 20 N, at a sliding speed of 0.1 m.s<sup>-1</sup> and sliding distance of 1000 m. Analyses of the as-cast samples and the worn surfaces were conducted using scanning electron</p>  |

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|   | <p>microscope (SEM). Microstructure characterizations revealed that the alloy with no La addition consisted of <math>\alpha</math>-Mg, Mg-Zn and Zn-Zr second phases. With increasing amount of La addition, the average grain sizes decreased and a new Mg-Zn-La second phase formed. Wear resistance and hardness were improved with increasing La addition due to the increased amount of hard second phases. A relationship between the microstructure and wear properties was clarified.</p> <p><b>Keywords:</b> ZK60, magnesium alloy, casting, microstructure, wear</p>  |
| <p style="text-align: center;"><b>Tülin Aydemir</b><br/> <b>GICICRST1806091</b></p>   | <p style="text-align: center;"><b>Catalytic oxidation of aqueous phenolic compounds by immobilized laccase on histidin functionalized chitosan</b></p> <p style="text-align: center;"><b>Tülin Aydemir</b><br/> <b>Manisa Celal Bayar University, Faculty Of Science And Arts, Chemistry Department, Manisa,Turkey</b></p> <p style="text-align: center;"><b>Semra Güler</b><br/> <b>Manisa Celal Bayar University, Faculty Of Science And Arts, Chemistry Department, Manisa,Turkey</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Lignolytic enzymes are very promising tools for biotechnological applications in water treatment. Among them, laccases (EC1.10.3.2: p-diphenol:dioxygen oxidoreductase) are versatile enzymes with the ability to oxidize a wide range of aromatic and nonaromatic compounds (phenolic compounds, aryl diamines, anilines). The phenolic compounds were present in wastewater from many industries, such as coal conversion, resins and plastic processing. All these phenolic streams were toxic pollutants because they were potential danger to human health. Laccases perform the single-electron oxidation of substrates, such as phenols, diphenols, methoxy-substituted monophenols and aromatic and aliphatic amines, to the corresponding radicals at the expense of oxygen. The essential limitation of laccase used in degradation of phenol and phenolic compounds is its low stability and productivity, as well as its high production cost. In order to reduce these limitations in its industrial application, laccase has been reported to be successfully immobilized on various organic and inorganic carriers for improving biodegradation of phenol and phenolic compounds. In the present study, laccase was immobilized in histidine functionalized chitosan beads using covalent attachment and its physico-chemical properties were investigated and compared with that of free enzyme. Immobilization led to increased tolerance of enzyme to temperature, pH, salts, inhibitor and organic solvents (acetonitrile, methanol and ethanol) at different concentrations (10-50% v/w). The catalytic efficiency (<math>K_{cat}/K_M</math>) of the immobilized enzyme was found to increase more than 3 folds, in comparison to that of the free enzyme. Phenol, catechol and pyrogallol were chosen as model compounds for evaluating the biodegradation efficiency of phenolic compounds by the immobilized laccase on histidine functionalized chitosan. The enzymatic oxidation of phenolic compounds were carried out in shake flasks on a rotary shaker (150 rpm) at optimum pH and temperature. The obtained experimental results revealed that immobilized enzyme can be successfully used for the oxidative removal of phenolic compounds with high efficiency, which illustrated that immobilized enzyme systems would be promising in wastewater treatment.</p> <p><b>Key words:</b> Water treatment; phenolic compounds; catalytic oxidation; enzyme immobilization.</p> |
| <p style="text-align: center;"><b>Siddika Öztekin</b><br/> <b>GICICRST1806101</b></p> | <p style="text-align: center;"><b>Cities Competing In The New World Order</b></p> <p style="text-align: center;"><b>Siddika Öztekin</b><br/> <b>Faculty of Political Science and Public Administration, Mus Alparslan University, Mus, Turkey</b></p>   |

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|  | <p style="text-align: center;"><b>Burçak Gündal</b><br/>Faculty of Political Science and Public Administration, Mus Alparslan University, Mus, Turkey</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Cities are places where a combination of globalization and localization processes can be experienced together. National development started heading towards local development. As a result, cities are becoming the focus of development and are now facing increased competition. With the effects of globalization, cities are becoming the local reflections of capital and environment. At the same time, cities have become places where socio-cultural features, where local and global networks interact, are at the forefront. It is expected that all economic, social and cultural items of cities will be branded in order to compete with other cities in the increasing global competition. Nowadays, cities are expected to become competitive and to take their place in the world ranking. Cities work like companies and each city separates themselves from the rest by exhibiting their differences. It is expected that cities have distinctive features from other cities, being able to mobilize existing potential, taking initiative, analyzing developments in economic, trade and service areas and transfer them to cities and city policies. Thus, the cities will be able to get ahead of their competition in order to grow and develop. Places that have made a place for themselves in the global marketplace and who have specialized are able to demonstrate comparative advantages within the national and global economy and provide the economic development and growth of their country in world markets. Therefore; this study aims to demonstrate the potential of Istanbul in order for it to take its place in the Turkish and world rankings and demonstrates the importance of economic, social and community development.</p> <p><b>Key Words:</b> Globalization, Urban, Local Development, Competition Cities.</p> |
| <p style="text-align: center;"><b>Ozge Turkey</b><br/>GICICRST1806102</p>  | <p style="text-align: center;"><b>Electro-Peroxone Treatment of Indigo Dye Solution</b></p> <p style="text-align: center;"><b>Ozge Turkey</b><br/>Gebze Technical University, Department of Environmental Engineering<br/>Cayirova, Gebze, 41400, Kocaeli, TURKEY</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Electro-Peroxone (E-peroxone) is a newly developed oxidation process that provides in-situ H<sub>2</sub>O<sub>2</sub> production electrochemically in aqueous solution. The process conditions are provided placing electrooxidation apparatus into the conventional ozonation system. Here, the cathode material is the key factor to produce H<sub>2</sub>O<sub>2</sub>, as it should be carbon-based material such as carbon-PTFE, carbon felt and activated carbon fiber [1,2]. The carbon-based electrodes are reluctant to decompose H<sub>2</sub>O<sub>2</sub> and therefore, H<sub>2</sub>O<sub>2</sub> is efficiently produced at the cathode surface from oxygen gas fed into the system as a gas mixture (O<sub>2</sub>+O<sub>3</sub>). The usage of wasted O<sub>2</sub> gas that not transformed to O<sub>3</sub> by ozone generator is an important virtue of the E-peroxone process. Another positive side of the process is to produce hydroxyl radicals (OH•) which have a great potential to oxidize organic substances. High efficiencies have been provided in the removal of various organics such as 1,4 dioxane [3], oxalic acid [4], diethyl phthalate [1], phenol [5] and pharmaceuticals [2] with the E-peroxone process.</p>  |
| <div style="text-align: center;">  <p><b>Dr. Shahbaz Ahmad</b><br/>GICICRST1806098</p> </div> | <p style="text-align: center;"><b>The Impact Of Ict Values With Respect To Utilization By The University Lecturers In Instruction In Pakistan</b></p> <p style="text-align: center;"><b>Dr. Shahbaz Ahmad</b><br/>Department of Education, University of Lahore, Sargodha Campus,<br/>Sargodha, Sargodha, Pakistan</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>The ICT (Information &amp; Communications Technology) utilization in</b></p>   |

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|  | <p>instruction among university and college lecturers is gaining in prominence in many countries in the world, including Pakistan, for the purpose of globalization and enhancing the quality of instruction and learning. The purpose of the study was to examine the benefits of ICT utilization, the extent of success factors, problems and constraints encountered in ICT utilization in instruction among lecturers in universities of Islamabad. A cross-sectional questionnaire survey was used to find out the level and extent of ICT utilization in universities of Islamabad. The sample from the study consisted of 260 lecturers drawn from the 14 universities of Islamabad. The data were analyzed using descriptive statistics and inferential statistics such as Pearson correlation, and chi square. Results of the study showed that there were significant relationships among the 14 areas of ICT utilization, significant relationships between ICT utilization and lecturers' characteristics, and significant relationships between ICT utilization and university demography. There were positive correlations between ICT utilization and some demographics such as lecturers' age, working experience, experience in computer use, frequency of ICT use, computer use at home, ICT training duration, extent of ICT knowledge, awareness of ICT and ICT written / published in university. The findings of this study could be used for improving instruction among lecturers and for designing a training model for instruction among lecturers in the pursuit of enhancing excellence and quality of education in universities. This study was subjected to several limitations that include online assessment, incorporating audio video conferencing tools, giving more sophistication to educational management software.</p>   |
| <p>Serhat Karaođlan<br/> GICICRST1806108</p> | <p style="text-align: center;"><b>Evaluation Of Renewable Energy Investments Criteria By Fuzzy Ahp</b></p> <p style="text-align: center;"><b>Tülin Durukan</b><br/> kırıkkale University, Business Administration</p> <p style="text-align: center;"><b>Serhat Karaođlan</b><br/> kırıkkale University, Business Administration</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Renewable energy is replacing fossil fuels day by day and becoming more efficient and more popular. Effects of global warming and the limited availability of fossil fuel stocks have led the direction of energy production to sources such as wind, solar, geothermal and hydro. Turkey's renewable energy investment and production is not yet sufficient but increasing over time. However, it is important for not only the engineering and economic area but also the social aspect which energy resource is invested in. Determination of important criteria may increase the acceptability of the investments to be made. The main aim of the study is to identify the main criteria and sub-criteria that are effective in the investment to be made for renewable energy production and to present it in a hierarchical structure. In addition, evaluation the weights of the criteria and rank all the criteria according to their importance. For this reason, technical, economic, socio-political and environmental aspects were selected as the main criteria in the selection of renewable energy sources in this study. Each main criterion is divided to sub-criteria. The priorities and weights of the criteria were determined by using the Fuzzy AHP method through binary comparisons. Investment costs, production costs, productivity and social acceptance were found as the most important criteria. The renewable energy investment alternatives can be evaluated by using the obtained criteria weights and it will be possible to reach optimum solution. The results may change because of local situations so investors should consider each case separately.</p> <p><b>Keywords: Renewable Energy, Fuzzy AHP, Energy Investment, MCDM</b></p> |

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|  <p><b>Dr. Vanaja Menon<br/>Vadakepat<br/>GICICRST1806109</b></p> | <p style="text-align: center;"><b>Is it imperative to Glocalise College Websites? A Study through the Lens of Arab Cultural Dimensions.</b></p> <p style="text-align: center;"><b>Dr. Vanaja Menon Vadakepat</b><br/> Associate Professor ,New York Institute of Technology, Abu Dhabi Campus,<br/> PO Box 5464, CERT Campus, Al Muroor Road, Abu Dhabi, United Arab Emirates</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Advances in technology encourage colleges to look upon websites as potential media to reach educational markets. Bestowed with competitive technology, educational institutions in the UAE too, are on the threshold of shifting into online promotions. Hence, it is necessary to explore consumer perspectives on online information search to understand their point of view on college websites. Limited studies in this area call for an exploratory research on understanding the Arab consumer perspectives on foreign college websites through the lens of cultural dimensions. Based on a primary survey done on Arab and non-Arab students, and stakeholders selected from Abu Dhabi, the capital city of the United Arab Emirates, this paper acknowledged the influence of culture in the appraisal of non-textual communication of foreign college websites.</p> <p><b>Key Words:</b> Websites, Glocalisation, Arab Consumers, UAE market, Abu Dhabi, Culture</p>  |
| <p><b>(Assoc. Prof. Dr.) M.<br/>Salih Keskin<br/>GICICRST1806110</b></p>   | <p style="text-align: center;"><b>A Case Study of a Slope Stability by Limit Equilibrium and Finite Element Methods</b></p> <p style="text-align: center;">(Assoc. Prof. Dr.) M. Salih Keskin (corresponding author)<br/> Department of Civil Engineering, University of Dicle, 21280, Diyarbakir, Turkey</p> <p style="text-align: center;">(M. Tech. Student) Ozan Natur<br/> Department of Civil Engineering, University of Dicle, 21280, Diyarbakir, Turkey</p> <p style="text-align: center;"><b>Abstract</b></p> <p>There have been encountered problems about stability during construction period especially which are constructed in sloping land. Because of that, it is tried to achieve the desired safety factor in the design stages with the help of different ways. In terms of avoid the stability problem once again in the process and remove the problems both in the analysis and design stages, it is important to assess the slope stability problems correctly, circumstances that led to the failure and the parameters of the ground, properly. In this study, cutting slope in Kahramanmaras Caglayan Transformer Station's was investigated by means of finite element method and limit equilibrium analysis. In the analysis, finite element program PLAXIS and limit equilibrium program SLIDE were used and critical sections are considered. The parameters used in the analysis were obtained from laboratory and site investigations. In the study, the effect of the model and failure type on the slope stability were investigated. It has been found that soil model type and failure mechanism are main parameters in the stability analysis and there is a good agreement between finite element and limit equilibrium methods.</p> <p><b>Keywords:</b> Slope stability, finite element method, limit equilibrium analysis.</p> |
| <p><b>Costel Bumbac<br/>GICICRST1806111</b></p>  | <p style="text-align: center;"><b>Experimental Studies On Microbial Populations Diversity In Continuous Flow Aerobic Granular Sludge Systems</b></p> <p style="text-align: center;"><b>Costel Bumbac</b><br/> Department of Environmental Technologies and Technology Transfer,<br/> National Research and Development Institute for Industrial Ecology</p> <p style="text-align: center;"><b>Elena Elisabeta Manea</b></p>   |

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|  | <p style="text-align: center;"><b>Department of Environmental Technologies and Technology Transfer,<br/>National Research and Development Institute for Industrial Ecology</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Recent trends in wastewater treatment research have focused, under the urge of improving wastewater treatment performances and cost-efficiency, on adapting the aerobic granular sludge technology to continuous flow operation regime.</p> <p>In our study, we followed both the evolution of wastewater treatment performance in lab scale continuous flow bioreactors (in different configurations) and the comparative evolution of the microbial populations of the aerobic granular sludge. The aerobic sludge granules were continuously monitored during reactor start-up, granules formation and steady state conditions, in terms of microbial diversity and morphology by DNA fingerprinting using qPCR amplification and respectively, confocal laser scanning microscopy and scanning electron microscopy. The experimental study focused on nutrient removal performances evaluation and the qualitative and quantitative assessment of specific species or functional genes with increased influence on the performance of biological processes involved in wastewater treatment, namely nitrification, denitrification and phosphorus removal.</p> <p><b>Keywords:</b> aerobic granular sludge, microbial diversity, wastewater treatment,</p>   |
| <p><b>Elena Elisabeta Manea<br/>GICICRST1806112</b></p>  | <p style="text-align: center;"><b>Aerobic granular sludge reactors flow optimization towards continuous flow systems</b></p> <p style="text-align: center;"><b>Elena Elisabeta Manea</b><br/>National Research and Development for Industrial Ecology –NRDI<br/>ECOIND, 71-73 Podu Dambovitei Street, Sector 6, Bucharest, Romania</p> <p style="text-align: center;"><b>Costel Bumbac</b><br/>National Research and Development for Industrial Ecology –NRDI<br/>ECOIND, 71-73 Podu Dambovitei Street, Sector 6, Bucharest, Romania</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Aerobic granular sludge has recently gained the reputation of a complete biological system that allows different process conditions to be obtained (aerobic, anoxic, anaerobic) in the same reactor, thus allowing microorganisms in its structure to be both capable of organic matter removal, nitrification, denitrification and phosphorus removal. Aerobic granular sludge is currently implemented in full scale wastewater treatment plants only for sequential batch reactors, extensive research being currently carried out in order to implement the system in continuous flow reactors.</p> <p>Four different continuous flow aerobic granular sludge configurations were developed, tested and optimized and were monitored in order to evaluate the evolution of granular aerobic sludge under continuous feed conditions. The bioreactor hydraulics characteristics were continuously improved on theoretical and experimental observations. The experimental findings have guided the possibilities of improving bioreactor flow, aeration and homogenization systems in order to: reduce the dead zones (reduced velocities near the tank corners), avoid aerobic granules accumulation near the the tank’s bottom and increase the shear forces (essential condition of aerobic granular sludge stability).</p> <p>The research is driven by the need of increasing existing WWTPs efficiencies in terms of combined organic loading and nutrients removal, with as little as possible adjustments to the existing tank’s physical forms.</p> <p><b>Key words:</b> wastewater treatment, aerobic granular sludge</p> |
| <p><b>Minaeva Julia Ivanovna<br/>GICICRST1806113</b></p> | <p style="text-align: center;"><b>Fuzzy mathematics in conditions of limited possibilities the membership function assigning</b></p>  |

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|   | <p><b>Minaev Yuri Mykolayovych</b><br/> <b>D. Sc. National Aviation University, Institute of Computer Information Technologies, Ukraine</b></p> <p><b>Filimonova Oksana Yuryevna</b><br/> <b>Ph. D., Kyiv National University of Civil Engineering and Architecture, Building department, Ukraine</b></p> <p><b>Minaeva Julia Ivanovna</b><br/> <b>Ph. D., Kyiv National University of Civil Engineering and Architecture, Building department, Ukraine</b></p> <p><b>Filimonov Georgiy Oleksandrovych</b><br/> <b>Kyiv National University of Civil Engineering and Architecture, Department of automation and information technology, Ukraine</b></p> <p><b>Abstract</b><br/> This article considers issues of the solution problems under uncertainty conditions, reducible to fuzzy sets, <math>\tilde{x} \triangleq \{x/\mu^x\}</math> <math>x \in X = \{x\}</math>, <math>\mu^x \rightarrow [0,1]</math>; <math>X</math> universal set, <math>\mu^x</math> - membership functions, provided limited possibilities for assigning the membership function.<br/> Explored the possibility of forming ordered subsets pairs on the basis of identifying hidden knowledge contained in the universal set, and applying standard algorithms of fuzzy mathematics to the computed subset.<br/> <b>Methodology:</b> the identification of hidden knowledge based on the a universal set fuzzification by the influence of the fuzzy operator (special matrix) on the vector of the universal set.<br/> In article purposed formation on the basis of the universal set of 2-D tensors (special (Teplitz or Hankel) matrices): <math>\{x\} \rightarrow \{T^x, H^x\}</math>, <math>T^x = \text{toeplitz}(x)</math>, <math>H^x = \text{hankel}(x)</math> respectively, singular 2-D tensors decomposition <math>T^x</math> (or <math>H^x</math>).<br/> In the article is proposed new approach for solving problems in conditions of uncertainty by forming a new object - ordered pairs subsets, analogous to heuristically formed fuzzy sets. The newly created object makes possible to use the fuzzy mathematics principles, methods and algorithms to extend the class of problems solved under uncertainty.<br/> The most rational use of the developed methodology is the objects which describe or operate with an objective uncertainty, but the application of fuzzy sets theory is difficult because of limited possibilities to determine the membership function, for example, due to missing data ( network traffic, electroencephalogram, etc.). For solving such tasks is possible to use syntheth the D. Kahneman and A. Tversky methodology and the theory of fuzzy sets.<br/> <b>Keywords:</b> fuzzy set, membership function, tensor decompositions</p> |
| <p><b>Lily Petriashvili</b><br/> <b>GICICRST1806114</b></p> | <p><b>Information System For Supporting Business Processes Of Multimodal Freight Forwarding</b></p> <p><b>Lily Petriashvili</b><br/> <b>Georgian Technical University, Kostava St. 77, Tbilisi, Georgia</b></p> <p><b>Nino Topuria</b><br/> <b>Georgian Technical University, Kostava St. 77, Tbilisi, Georgia</b></p> <p><b>TsaTsa Namchevadze</b><br/> <b>Akaki Tsereteli State University, Tamar Mepe #59, Kutaisi, Georgia,</b></p> <p><b>Giorgi Surguladze, Interanational Black see University, David Agmashenebeli Alley 13km, 2</b></p> <p><b>Abstract</b></p>   |

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|   | <p>Article discusses problems of managing business processes of multimodal freight transportation, presents analysis of types of multimodal shipments with emphasis on modeling and improving automation of business processes of a freight forwarding business based on modern information technologies. Infrastructure of management information system of the problem area has been designed with database, monitoring and decision-making blocks. Sea port is presented as a large and complex management system, its structure and behaviour is described using object, process and service-oriented approaches. Attention is devoted to identification of factors that may affect effectiveness of multimodal transportation (time, cost, etc.). Business processes and business rules of multimodal transportation is studied, corresponding UML diagrams are built. An integrated concept is developed for effective functioning of a sea port, based on optimization of business processes of multimodal transportation, also for developing a decision support computer system and a software for these processes. With Power BI Desktop analysis services, users get real-time insights using highly interactive visualizations, whether in the cloud or on-premises.</p> <p><b>Keywords:</b> multimodal forwarding, DSS, seaport resources, business-processes, optimization, information technology, ERP, UML, Agile, ITIL, Power BI.</p>   |
|  <p><b>Önder Uysal</b><br/>GICICRST1806097</p> | <p><b>Purification of Biogas Using Chlorella sp.</b></p> <p><b>Onder Uysal</b><br/>Suleyman Demirel University Faculty of Agriculture, Department of Agricultural Machinery and Technologies Engineering, Isparta, Turkey.</p> <p><b>F. Ö. Uysal</b><br/>Gpa Muhendislik Ltd. Co. Isparta, Turkey</p> <p><b>N. B. Bitrak</b><br/>Suleyman Demirel University Faculty of Engineering, Department of Environmental Engineering, Isparta, Turkey.</p> <p><b>B. S. Kumbul</b><br/>Suleyman Demirel University Faculty of Agriculture, Department of Agricultural Machinery and Technologies Engineering, Isparta, Turkey</p> <p><b>K. Ekinci</b><br/>Suleyman Demirel University Faculty of Agriculture, Department of Agricultural Machinery and Technologies Engineering, Isparta, Turkey</p> <p><b>Abstract</b></p> <p>Biogas process, which is a method of recycling through anaerobic digestion of organic materials is considered as the most appropriate process for the utilization of wastes. The final products of this multi-stage fermentation process are methane, carbon dioxide and hydrogen sulphide. Biogas purification is the most strenuous and expensive part of the process. Microalgae can be used for biogas purification as well as biogas production. In this study, microalgae was used to purify the biogas. A fifteen liters - photobioreactor was used for purification of 50 liters of biogas. Chlorella spp. (SAG 242.80) was cultivated in 2L-Erlenmeyers in laboratory conditions. The final pH of this medium was 7.0 after being autoclaved. The nutritive media were inoculated, with microalgae suspension from agar. The microalgae cells were grown at a temperature of <math>25\pm 1^{\circ}\text{C}</math> and PAR (Photosynthetically Active Radiation) of <math>50\ \mu\text{mol m}^{-2}\ \text{s}^{-1}</math> measured by PAR meter. Sufficient concentration of microalgae was inoculated with photobioreactor for biogas purification. Primarily, the methane and carbon dioxide values of the biogas entering the system were measured. Then, the purification rates were determined by measuring the methane and carbon dioxide values emitted from the system.</p> |

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|  | <p>While microalgae consumed carbon dioxide in the biogas, it was observed that biomass and oil yield increased.<br/><b>Keywords: Microalgae, biomass, biogas, purification</b></p> <hr/> <p style="text-align: center;"><b>Design of Mobile and Functional Photobioreactor</b></p> <p style="text-align: center;"><b>Önder Uysal</b><br/>Suleyman Demirel University, Faculty of Agriculture, Departure of Agriculture Machinery and Technologies Engineering, Isparta, Turkey.</p> <p style="text-align: center;"><b>K. Ekinici</b><br/>Suleyman Demirel University, Faculty of Agriculture, Departure of Agriculture Machinery and Technologies Engineering, Isparta, Turkey.</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Recently, microalgae are used in sectors such as agriculture, food, cosmetics, animal feed, energy. Raceways are used for the most common open systems for high density cultivation when tubular photobioreactors are used for closed systems. In two decades, there have been significant developments in different photobioreactor designs for commercial scale production of alternative species in the production of commercial microalgae. There is no risk of contamination as a result of controlled cultivation in tubular photobioreactors. This allows intensive and pure cultivation.<br/>In this study, 75 x 69 mm acrylic pipes were used for the tubular photobioreactor. Each flow path is set to 2 m. By using a 40 liter closed-loop unit while the total volume of acrylic pipes is 60 liters, total volume is designed as 100 lt. In this photobioreactor designed and prototyped, suitable conditions were established for the cultivation of different microalgae strains. The tubular photobioreactor is made mobile and functional. In this photobioreactor, pH, optical density, biomass values are controlled.<br/>As a result, a mobile and functional photobioreactor has been designed to enable the cultivation of different microalgae strains for different sectors for microalgae growing. This photoreactor is suitable for continuous, semi-continuous and continuous production.<br/><b>Keywords: Photobioreactor, tubular, microalgae, mobile, functional</b></p> |
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