ICRST PROCEEDINGS

Scientific and Technical Research Association (STRA)

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK

13-14 April 2018

Conference Venue

South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

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 Casini 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.

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

2

KEYNOTE SPEAKER

Dr. P. Trinatha Rao
Department of Electronics and Communication Engineering, GITAM University,
Hyderabad, India

Dr. P. Trinatha Rao is a Senior Associate Professor in the Department of Electronics and Communication Engineering, GITAM University, Hyderabad, India. He was awarded Ph.D in Communication Networks from College of Engineering, Andhra University, Visakhapatnam, India. He completed his Masters in Engineering with majors in Optical Communication, College of Engineering, Guindy, Chennai, India. He completed his Bachelor of Engineering in Electronics and Communication Engineering from College of Engineering, GITAM, Visakhapatnam, India. He has more than 16 years of Teaching and Research Experience. He is presently guiding 13 research scholars in the areas of Cognitive Radio, Software-defined Networks etc. He has published more than 40 research papers in International Journals and Conferences. He is presently the Professor in charge for the Student Affairs, GITAM University, and Hyderabad.
Topic: Light Fidelity Handoff Mechanism for Content Streaming in High-Speed Networks

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

3

PLENARY SPEAKER

Dr. Nor Halim bin Hasan
Department of Occupational Safety and Health Seremban, Negeri Sembilan, Malaysia

IR Dr. Nor Halim Hasan (Deputy Director Of Department Of Occupational Safety And Health Negeri Sembilan), holds a Chemical Engineering Bachelor Degree (UTM) and Masters in Industrial Safety Management (UKM). He also possesses Ph.D. in Mechanical Engineering from Universiti Teknikal Malaysia Melaka. Appointed as Adjunct Professor to Faculty of Occupational Safety and Health, Cyberjaya University College, and Medical Sciences since Sept 2017.He is a registered as Professional Engineer (Chemical) with Practicing Certificate with the board of Engineer Malaysia since 2004 and has been working as Deputy Director in various DOSH State Offices for more than 20 years. In 2007, Ir Dr. Halim was appointed as the Secretary to the National Council for OSH. He then had been appointed as the Director of Industrial Hygiene and Ergonomic Division, DOSH Putrajaya in 2014. Since 2015, Ir Dr. Halim is the Deputy Director of DOSH Negeri Sembilan until present. He has been conducting OSH related training and research for many years.Others, he also involved in journal publication, attending conference and paper presentation and also an article reviewer for Journal of Occupational Safety and Health (JOSH), National Institute of Occupational Safety and Health, (NIOSH) Malaysia since January 2017.
Topic: The Role of Principle Employer (PE) in OSH Implementation in Malaysia

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

4

Jaspreet Kaur GICICRST1802057	**Enhancing The Turing Machine to Resolve the Halting Problems to Accept Recursive Enumerable Languages with Multi Tapes and Its Implementation in JFLAP**

Jaspreet Kaur
Faculty of Computational Science
GNA University
Punjab, India

Abstract

The Turing machine is certainly the most powerful of the machines. Turing machines are equivalent to modern electronic computers at a certain theoretical level, but differ in many details. In the analogy with a computer, the "tape" of the Turing machine is the computer memory, idealized to extend infinitely in each direction. The remarkable fact is that certain Turing machines are "universal", in the sense that with appropriate input, they can be made to perform any ordinary computation. In effect, they can only do specific computations; they cannot act as "general-purpose computers". There are so many existing tool those does not supporting formation of Universal Turing Machine that's why it is very difficult to accomplish the task. So that JFLAP platform is used for the creation of UTM. Among these formalisms, the Turing's formulation is accepted as a model of algorithm or computation. Turing machine will halt when it accepts the string or halt when problem is undecidable. In this paper, we have designed the recursive enumerable language to show the halting state of machine on valid inputs by enhancing the single tape to the multi-tape Turing machine and simulate the machine in JFLAP tool. The results have shown that the Turing machine recognize how to be reflected and developed to accept any type of language like regular language, context free language, etc. A Directed graph is being used to represent a Turing Machine, uses by JFLAP. But when a Turing machine process infeasible input then the Turing machine show an unacceptable behaviour shows as halting state of Turing machine. This halting problem can be avoided by providing suitable input so that machine will halt on final state to show the acceptance of the valid string.
Keywords-
Halting State, multi-tape, Turing Machine, UTM, JFLAP, Recursive Enumerable Grammar

John Lloyd Gerasmia GICICRST1802058	**Oral Communication: Stage Fright Results To Language Deficiency**

John Lloyd Gerasmia
Tagum College,University Of Mindanao,Tagum City, Philippines

Abstract

The study was mainly focused on the problem on stage fright among language learners especially in oral communication. It employed the qualitative action research that provides the tools essential to the researcher in studying complex phenomena regarding the study. The respondent is 17 years old and a Grade 12 student. The researcher focused on the problems that cause stage fright among language learners. It was found out that language learners tend to have stage fright because of the comments of their classmates and sometimes the people in their environment. This simply means that the above mentioned problems of the language learners were managed by the participant by preparing the piece or the lesson to avoid some negative comments received from the classmates or other people. This result suggested that language learners were able to look for another way to fight their problem in performing in the stage, study the lesson properly, be ready all the time, and prepare for some critics. These identified problems and coping mechanisms prove that it does not only exist locally but also in national setting. The researcher's recommendation regarding with this problem is that student with this kind of problem should undergo some psychological examination and attend some performing workshops or seminars

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

5

	regarding stage fright. Keywords: oral communication, stage fright, deficiency
Farideh Vaziriheshi **GICICRST1802059**	**Mineralogical Characteristics and Related Alteration Types in Nabijan Ore Occurrence, East Azerbaijan, NW Iran** **Farideh Vaziriheshi** **Research Institute for Earth Science (Geological Survey and Mining Exploration of Iran), Iran** **Mohamad Lotfi** **Research Institute for Earth Science (Geological Survey and Mining Exploration of Iran), Iran** **Mohamad Hashem Emami** **Research Institute for Earth Science (Geological Survey and Mining Exploration of Iran), Iran** **Abstract** **The Nabijan exposure of Cu-Au is located in distance of 20 Km southwest of Kaleibar.On the basis of structural classification it is situated in the zone of Alborz-Azarbaijan.The Diorite-monzodiorite intrusive to gabbro-monzogabbro units of the area (rocks) is showing Oligocene age which is intruded in the calcarious and volcanic rocks of the upper Cretaceous.Metasomatism phenomena in this area due to intrusion of magmatic materials.The resulted is showing metamorphism of orginal mass and associated (rocks) volcanic and calcareous masses.** **The-our recognized zones of metamorphism are potassic, phyllic, silisification and tourmalization of Nabijan exposure.** **Mineralization studies of the area is showing pyrite, native gold, chalcopyrite, arsenopyrite, sphalerite, chalchocite, malachite, azurite and hematite minerals.Based on geochemical exploration studies and collection of 425 samples, the content of Cu varies from 41200 ppm to 12ppm.The average content of gold is 0.44ppm.Formation and occurrence of Au And Cu field are controlled by structural and geochemical ingredient.** **Keyword: Alteration, Nabijan Ore Occurrence,Copper,Native gold**
Azad Kumar **GICICRST1802061**	**Comparative investigation of photocatalytic degradation of Rose Bengal dye under visible light by TiO_2, TiO_2/PAni and GO/TiO_2/PAni nanocomposites** **Azad Kumar** **Department of Applied Chemistry, School of Physical Sciences** **Babasaheb Bhimrao Ambedkar University, Lucknow** **Gajanan Pandey** **Department of Applied Chemistry, School of Physical Sciences** **Babasaheb Bhimrao Ambedkar University, Lucknow** **Abstract** **Nanocomposites of TiO_2, TiO_2/PAni and GO/TiO_2/PAni were prepared by in situ oxidation polymerization method. The prepared TiO_2, TiO_2/PAni and GO/TiO_2/PAni Nanocomposites were characterized by the XRD, SEM, TEM, BET, UV-Vis, FTIR, Band gap energy and Photoluminescence. The XRD confirmed the presence of Anatase and rutile phase in the prepared photocatalysts. The average particle size was found 68, 15 and 12 nm for prepared TiO_2, TiO_2/PAni and GO/TiO_2/PAni nanocomposites respectively. The SEM and TEM images also confirmed the formation of nanocomposites in the range of ~ 100 nm. The surface area 37.52, 76.68 and 96.24 m^2/g were observed for Nanocomposites respectively. The Band gap energy of TiO_2, TiO_2/PAni and GO/TiO_2/PAni were calculated by talc plot and obtained 3.0, 2.86 and 1.76 eV**

	respectively. The Photocatalytic degradation of Rose Bengal dye was done at different condition viz concentration of dye, time of illumination, pH and dose of photocatalyst. The photodegradation Rose bengal were found 85-99%, 60-97 and 10-20% in presence of $GO/TiO_2/PAni$, $TiO_2/PAni$ and TiO_2 at neutral pH, 6.25 ppm concentration of dye solution, 800 mg/L amount of photocatalyst and 120 min irradiation of visible light. Kinetics of photodegradation was investigated for Rose Bengal dye and found first order kinetics. The coating of PAni and GO were enhanced the photocatalytic activity of Titania. Hence $TiO_2/PAni$ and $GO/TiO_2/PAni$ are the efficient photocatalyst for the degradation of Rose Bengal dye than pure TiO_2. Keyword: Photocatalyst, Photodegradation, Rose Bengal, photocatalysis, nanocomposites, visible light irradiation, Photoluminescence.
Mohsen Bazghaleh **GICICRST1802063**	**Design of a low cost programmable LED lighting system** **S. Abeysekera** **Engineering And Physical Sciences,Heriot-Watt University ,Putrajaya, Malaysia** **M. Bazghaleh** **Engineering And Physical Sciences,Heriot-Watt University ,Putrajaya, Malaysia** **M. P.-L. Ooi** **Engineering And Physical Sciences,Heriot-Watt University ,Putrajaya, Malaysia** **Y. C. Kuang** **Engineering And Physical Sciences,Heriot-Watt University ,Putrajaya, Malaysia** **V. Kalavally** **Engineering And Physical Sciences,Heriot-Watt University ,Putrajaya, Malaysia** **Abstract** **Smart LED-based lighting systems have significant advantages over traditional lighting systems due to their capability of producing tunable light spectrums on demand. The main challenge in the design of smart lighting systems is to produce sufficient luminous flux and uniformly accurate output spectrum for sufficiently broad area. This paper outlines the programmable LED lighting system design principles of design to achieve the two aims. In this paper, a seven-channel design using low-cost discrete LEDs is presented. Optimization algorithms are used to calculate the number of required LEDs, LEDs arrangements and optimum LED separation distance. The results shows the illumination uniformity for each channel. The results also shows that the maximum color error is below 0.0808 on the CIE1976 chromaticity scale. In conclusion, this paper considered the simulation and design of a seven-channel programmable lighting system using low-cost discrete LEDs to produce sufficient luminous flux and uniformly accurate output spectrum for sufficiently broad area.** **Keywords— Light spectrum control, LEDs, Smart lighting, Programmable LED lighting system**
Ashok Kumar **GICICRST1802064**	**Adsorption and conformation of carboxymethyl cellulose at TiO2- modified powdered mustard cake: Experimental and theoretical study** **Kaman Singh** **Advanced Center of Surface Chemistry, Department of Applied Chemistry, School for Physical Sciences, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow 226 025, India**

Ashok Kumar
Advanced Center of Surface Chemistry, Department of Applied Chemistry, School for Physical Sciences, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow 226 025, India

Abstract

Carboxymethyl cellulose (CMC) is a natural polymer (polysaccharide), non-toxic and biodegradable having industrial applications in varying sectors such as food, textile, paper, adhesive, paints, pharmaceutics, mineral processing, drugs and cosmetics, ceramics, leather, film and filaments. However, there is a lack of understanding of the interaction mechanism between the polysaccharides and solid surfaces which has hindered desired application of this polymer. An attempt has, therefore, been made on adsorption aspects of CMC at the solid-liquid interface employing FTIR, fluorescence spectroscopy, XRD, AFM and molecular modeling. The adsorption of the CMC onto TiO2-modified carbon derived from mustard cake was found to be affected significantly by change in solution conditions and confirmed by fluorescence spectroscopy, FTIR and other techniques. Langmuir modeling of the adsorption isotherm suggests hydrogen bonding to be dominant force for polysaccharide adsorption as the adsorption free energy of CMC was found close to that of hydrogen bond formation. Molecular modeling shows that a helical structure of CMC in solution in place of vacuum while it is found to adsorb flat on the surface of TiO2-modified PAMC resulting OH groups to be in contact with surface. Fluorescence spectroscopy study demonstrates that there is no evidence of the formation of hydrophobic domains at TiO2-modified PAMC interface. The presence of Urea reduced the adsorption of CMC on TiO2-modified PAMC, significantly which supports that adsorption in the present case is attributed to the presence of hydrogen bonding All of the above results suggest that the adsorption of CMC on the surface of TiO2-modified PAMC is mainly caused by a combination of electrostatics nitration and hydrogen bonding rather than hydrophobic force.
Key words: TiO2-modified PAMC, CMC, Polymer adsorption, AFM, Model, ZPC.

In-vitro antioxidant activity and possible protective effect of methanol and n-hexane fractions of Vernonia calvoana against Streptozotocin induced hepatotoxicity in Wistar rats.

EyongUbanaEyong
Department of Biochemistry, Faculty of Basic Medical Sciences, University of Calabar, P.M.B 1115, Calabar, Nigeria.

IwaraArikpoIwara
Department of Biochemistry, Faculty of Basic Medical Sciences, University of Calabar, P.M.B 1115, Calabar, Nigeria.

Ofonime Eve Mboso
Department of Biochemistry, Faculty of Basic Medical Sciences, University of Calabar, P.M.B 1115, Calabar, Nigeria.

Godwin OjuIgile
Department of Biochemistry, Faculty of Basic Medical Sciences, University of Calabar, P.M.B 1115, Calabar, Nigeria.

Bob Mgbeje
Department of Biochemistry, Faculty of Basic Medical Sciences, University of Calabar, P.M.B 1115, Calabar, Nigeria.

Friday EffiongUboh
Department of Biochemistry, Faculty of Basic Medical Sciences, University of

Eyong Ubana Eyong
GICICRST1802067

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

8

Calabar, P.M.B 1115, Calabar, Nigeria.

Patrick. EkongEbong
Department of Biochemistry, Faculty of Basic Medical Sciences, University of Calabar, P.M.B 1115, Calabar, Nigeria.

Abstract:
Aim: The study assessed the*in vitro* antioxidant activity and possible protective effect of extracts of *Vernonia calvoana* (V.C) on Streptozotocin (STZ)-induced hepatotoxicity in rats. **Method:** The *in- vitro* antioxidant activity of the fractions was evaluated using 1, 1-diphenyl-2-picrylhydrazyl (DPPH), ferric reducing antioxidant power (FRAP), superoxide radical and anti-lipid peroxidation scavenging methods. Thirty-six (36) albino wistar of mixed sexes rats weighing (100-150g), were divided into 6 groups of 6 animals each. Groups 1 and 2 representing normal and diabetic controls (NC and DC) respectively, received placebo, while groups 3-6 represented diabetic treated, received 500 mg/kg b.w metformin, 400 mg/kg b.w crude extract, 400 mg/kg b.w n-hexane and 400 mg/kg b.w methanol fractions of V.C, respectively. Drug and extract administration lasted for 28 days. Aminotransferase activity of AST and ALT, total protein, albumin and globulin were also assayed on sera obtained from animals. Histopathology of liver section was also done. **Result:** The DPPH, FRAP, superoxide and anti-lipid peroxidation free radical scavenging activities of the fractions showed free radical scavenging activity in both n-hexane and methanol fraction with dose dependent responses and was closely compared to control. The results showed no significant ($p > 0.05$) change in ALT activity in all treated groups, compared to DC; but closely related to NC. Significant decrease ($P < 0.05$) in AST activity of metformin, crude extract and methanol fraction treated groups were also observed, compared to DC. Ratio of AST:ALT activity in treated groups were significantly ($p < 0.05$) decreased, compared to DC and NC groups. Total protein, albumin and globulin concentration was observed be increased in all treated groups compared to DC.Histopathological changes were observed to corroborate the biochemical findings. **Conclusion:** The result validates the protective effect of extracts of *Vernonia calvoana*
Keywords: Metformin, *Vernonia calvoana*, in vitro antioxidant activity, hepatotoxicity.

Performance of Homogeneous Catalyst and the optimization of Kinetic Parameters on Triglyceride based Diesel fuel

Fathima Jalal
Chemical Engineer, Anna University, Chennai-25, India

SelvaIlavarasiPaneerselvam
Research Scholar,Department of Chemical Engineering, Anna University, Chennai-25

Lima Rose Miranda
Professor, Department of ChemicalEngineering, Anna University, Chennai-25, India.

Fathima Jalal
GICICRST1802068

Abstract
The world is currently dependant on fossil fuels as a fuel source for transportation and fuelling the industrial sector. The increasing awareness of the depletion of fossil fuel resources and the environmental benefits of bio-diesel has made it more attractive in recent times. Many researches are being made to commercialize the production. However the cost of bio-diesel is the major obstacle to its commercialization in comparison to conventional diesel fuels. This high cost is due to the raw material, vegetable oils. One of the economical sources for the bio-diesel production is the Palm Fatty Acid Distillate (PFAD).

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

9

	The raw material is a waste from the oil industry, hence cost free. The objective of this paper is to produce biodiesel from PFAD with free fatty acid (FFA) of 86%. The high FFA is reduced using three homogenous acid catalysts vizSulphuric, Phosphoric and Hydrochloric acid. The influence of operating conditions, such as dosage of acid, molar ratio of methanol, reaction temperature, and reaction time has been optimized for the catalysts used. Further the kinetic parameters of the esterification reaction using Homogeneous acid catalysts were estimated, the influence of temperature on the kinetic constants determined by fitting the results to the Arrhenius equation and hence the thermodynamic nature of the system is checked by calculating the Gibbs free energy. Keywords: Palm Fatty Acid Distillate (PFAD), free fatty acids, Triacylglycerides, Biodiesel, transesterification, Kinetic parameters.
Ghulam Hasnain Tariq **GICICRST1802069**	**Study of Physical Properties of Thermally Evaporated Cu: SnS Thin Films** **Ghulam Hasnain Tariq** **Photovoltaic and Renewable Energy Laboratory (PRE-Lab),** **Department of Physics, Khawaja Fareed University of Engineering & Information Technology, Rahim Yar Khan-64200, Pakistan.** **Muhammad Anis-ur-Rehman** **Applied Thermal Physics Laboratory, Department of Physics, COMSATS Institute of Information Technology, Islamabad, 44000, Pakistan.** **Ghulam Asghar** **Department of Physics, The University of Poonch, Rawalakot AJK, Pakistan** **Amir Shahzadd** **Department of Physics, AIOU, Islamabad, Pakistan.** **Abstract.** **SnS is a group IV-VI nontoxic semiconducting material and is an appropriate candidate for absorbent layer in thin film solar cells. Herein we used Cu:SnS thin films to study the influence of Cu doping on physical properties of SnS thin films. Initially, SnS thin films were deposited on microscopic glass slide substrates by thermal evaporation method. Then Cu was deposited by thermal evaporation on the SnS thin films. For Cu diffusion and improvement in crystalline structure, these Cu:SnS thin films were annealed for 2 hours in vacuum environment at different temperatures. The structural characterization for study of microstructural properties like crystallite size, dislocation density and microstrains was done by using X-ray diffraction (XRD). Diferent optical properties like absorption coefficient and badgap energy were diagnosed by using spectrophotometer. The obtained studies revealed that the physical properties of thermally evaporated Cu:SnS thin films depend exceedingly on annealing temperature and dopant's concentration. These results proposed that the Cu:SnS thin films could be used as an absorbent material in thin film solar cell devices.** **Keywords: Evaporation, Cu:SnS, , Annealing, Diffusion.**
Ramachandra Mohan **GICICRST1802070**	**Detection of biopesticide Azadirachtin and analysis of gill tissues of the fish Glossogobius giuri using HPCL** **M Ramachandra Mohan** **Dept of Zoology,Bangalore University** **Bangalore** **India** **Abstract** **Abstract The impact of Azadirachtin, a natural biopesticide of neem on the gills of the fish Glossogobius giuris and the determination of Azadirachtinin in the gill tissue were verified using high performance liquid chromatography (HPLC)**

	under laboratory conditions, for 96 h exposure period of 1.0 ppm concentration of neem oil. The HPLC data indicated that 1.9 ppm of Azadirachtin was observed after four days of exposure to the treatment, whereas no detectable level of Azadirachtin in the gill tissue was observed 90 days after the treatment. The impact of Azadirachtin caused an initial increase of the hyperplasia, vacuolization of mucus cells, telengiectasia (clumping of blood vessels), opercula ventilation rates, and respiratory distress in the gills. Whereas concern to behavioral aspects as erratic swimming was observed.
Nwobike Innocent Owakah GICICRST1802073	**Maintaining day to day performance of employees in different organization** **Nwobike Innocent Owakah** **Business Adm.,University Of Mediterranean Karpasia,Turkey** **Abstract** **Maintaining day to day performance of employees in different organization is a very huge responsibility because you are laden with the task of bringing out the best in your employees. More than ever, this endeavour requires a lot of effort in the area of encouraging employee performance improvement, in other to help the organization grow in its aim of establishment. If you're a manager and your goal is to change an employee's behavior, you might have to make some adjustments in the manner of dealing with some employees. For instance, when you place someone on disciplinary action, managers frequently make the mistake of concentrating only on documenting negative employee behavior rather than focusing more on guiding the employee Although documentation is important when the behavior is not amended and additional steps in the discipline process are necessary, managers should also hope that their employee can successfully improve rather than expect the worst.** **This academic piece therefore focuses on how employee performance can improve in various organizations today. This is important because poor performance of employees can easily destroy the value of business, thereby causing low production rate, which in turn creates loss of customers and degradation of brand name and these is a threat to the success of any organization today.** **Keyword: Management, Performance, Employees, Organization, Maintenance**
Eriola Hida GICICRST1802075	**Comparison Of Photosynthetic Activity Imaging Between To Different Stressed-Pollution Plants In Metalurgicall Area** **Eriola Hida** **Polytechnic University of Tirana, Department of Physics, Tirana, Albania.** **Abstract** **Industrial pollution and other stresses affect the reduction of photosynthetic activity of the leaf apparatus. Among the pollutants that are generated by processing scrap in Elbasan are sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), fine particles (PM) as well as dioxins and furans. The impact of air pollution from metallurgical plants is analyzed in endemic plant Cercius Silicuastrum and Populus x canadensis poplar) at different distances from the source of pollution ferrocrome factory.Therefore stress effects on plants are detectable via changed on fluorescence signature of leaves. Air pollution could induce decrease of chlorophyll (Chl) content as well as significant decline of photosynthetic activity.** **Metallurgical factory in Elbasan that release chemicals and particulates into the atmosphere is considered a source of air pollution. Some plant species grown in area near the factory were studied to evaluate the efficiency of photosynthetic apparatus in pollution conditions via chlorophyll fluorescence imaging during induction kinetics. Chlorophyll fluorescence images were measured using the FluorCam 700MF imaging system as a technique that offers the possibility to study the distribution and patchiness of fluorescence signatures over the whole**

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

11

leaf area. Chl fluorescence images were measured on the leaves of spontaneous plants grown in sites with different level of steel plant air pollution assessed on base of different distances and different directions from the source of the pollution. Contamination effect reflected on photosynthetic activity of leaves was very high particularly on plants located nearer the metallurgical units.

Keywords: Chlorophyll fluorescence, chlorophyll fluorescence imaging, spontaneous plant, induction kinetics, photosynthetic apparatus.

Realizing the promise of Virtual Reality as a champion for preserving Digital Heritage

Amina Alyamani
Computer Science Department,Omar Al-mukhtar University,Dernah, Libya

Amina Alyamani
GICICRST1802076

Abstract

Virtual Reality technologies have been touted as a vehicle for educational institutions, private enterprises, governments and NGOs to preserve cultural experiences as part of broader Digital Heritage initiatives. Virtual Reality technologies by themselves offer attractive user experiences in many use cases, however specifically concerning Digital Heritage initiatives there are several deficiencies with the current technologies that limit the full potential of this technology in achieving the promise of Virtual Reality technologies as a champion for preserving Digital Heritage.

One of the greatest challenges facing the VR industry today is a fragmented ecosystem of hardware and software development environments. Leading tech companies each have their own hardware and software products, which by and large are not interoperable. This reality makes it challenging for stakeholders pursuing Digital Heritage initiatives to select a technology provider to reach their objectives. From a User Experience perspective, many Human-Computer Interactions that are used by the VR industry are not standardized. The content experiences which must be produced also require selective planning based on the unique development environments for each hardware manufacturer. An emerging trend to mitigate this challenge is single code-based development through video game engines such as Unity 3D, which is able to produce an immersive VR experience which can be exported to multiple VR environments across different hardware platforms.

A challenge faced by stakeholders pursuing Digital Heritage initiatives in Virtual Reality is producing accurate content experiences that allow users to interact with characters and environments in a realistic manner. The promise of VR as a tool to open up an immersive world for users to explore and enjoy is limited in all uses cases by the need to produce content for users to interact with by common HCI's including: button press, proximity, geo-fencing, and verbal triggers. Current limitations in VR technology present users with content experiences that intuitively should be interactive or responsive but in actuality many elements are not interactive or responsive. This lack of interactivity when viewed through the use cases of Digital Heritage Initiatives can be perceived in a cultural or literal sense as opposed to a deficiency in the technology itself.

Specific deficiencies in the current VR landscape include: immersive sound (360/3D sound) and voice control/voice response. These features and functionalities are in the early stage of refinement amongst VR industry stakeholders. Within the broad requirements of Digital Heritage stakeholders wishing to leverage Virtual Reality technologies, these deficiencies must be addressed as part of the core product requirements for these initiatives.

In order to realize the promise of Virtual Reality technologies as a champion for Digital Heritage Initiatives, there is a need for collaboration at the Enterprise level between leading technology and DH stakeholders to align strategically on future product requirements specifically relating to Digital Heritage Initiatives. The planning required for the production of premium VR experiences can rival that of AAA game titles or Hollywood Films, often with similar budgets. As such, the financial and intellectual investment from all parties cannot be taken

	lightly. An open spirit of innovation is also important as best practices in the VR industry are evolving and must be observed from parties outside of those directly involved in a project.
Mustafa Gelen GICICRST1802077	**Adaptive Image Processing System** **Mustafa Gelen** **Ford Otosan Company** **Burak Birinkulu** **Ford Otosan Company** **Erdem Altug** **Ford Otosan Company** **Abstract** **Ford Otosan's Yeniköy plant, which assembles the Transit Courier and Tourneo Courier, has implemented an adaptive image processing system to inspect the vehicle in terms of part presence / absence, vehicle complexity and specification requirements automatically.** **In the Assembly Plant, when the vehicle is finished, the vehicle goes through Customer Acceptance Line for final inspection list of checks to make sure all of the parts are in place, doors fit properly, wipers work, etc. to ensure the vehicle meets engineering specifications and customer expectations as a part of Quality Management System. This inspection workflow is crucial to eliminate customer complaints and warranty costs and to increase of customer satisfaction. All these checks were being done manually by operators, after implementing adaptive image processing system, correct exterior trim part availability and specification checks have been started to be done automatically. With Adaptive image processing system labour efficiency has been improved, non-value added processes have been eliminated and human error on manual processes have been completely reduced to zero.** **Thanks to adaptive image processing system, 32 items which have been started to be checked automatically were used to take 142 seconds per vehicle by 3 operators manually, with the new system 142 seconds per vehicle has been decreased to milliseconds and 3 labour efficiency has been gained.** **Keywords: Automotive, innovation, image processing, quality, inspection, industry 4.0**
Eko Siswoyo GICICRST1802078	**Synthesis and Characterization Hydroxyapatite from Calcium Oxide (CaO) from Chicken Egg Shell with Precipitation Method** **Eko Siswoyo** **Chemistry Department, Faculty of Science and Mathematics, Diponegoro University Indonesia** **Gunawan** **Chemistry Department, Faculty of Science and Mathematics, Diponegoro University Indonesia** **Abstract** **Hydroxyapatite is a constituent compound of tissues in the body such as bones and teeth that can be synthesized from eggshells that have high calcium content. Hydroxyapatite is biocompatible so it can be used as a dental implant. The purpose of this research is to utilize eggshell waste to be synthesized into hydroxyapatite material as base material of dental implant. Hydroxyapatite was synthesized from eggshell calcium oxide nanoparticles (CaO) by mixing HCl, NH3 and Na3PO4 solutions using precipitation method. The synthesis was carried out by 4 samples with the molarity of Na3PO4 4 varied samples ie 4M, 5M, 6M and 7M then calcined at 750 $^\circ$ C for 4 hours. The results of XRD

	characterization, showed that the highest Hydroxyapatite content was found in the addition of Na3PO4 5M ie 58 wt%. The crystalline morphology of SEM (Scanning Electron Microscopy) characterization shows that the hydroxyapatite sample has a regular structure and uniform crystal size, while the EDS analysis shows the most dominant CaO content with a grade of 55.91%. Keywords : Chicken Egg Shells, Hydroxyapatite, XRD and SEM-EDS
Habibu Abdu **GICICRST1802079**	**Differential expression of insecticide resistance genes in Anopheles gambiae from Northern Nigeria** **Habibu U. Abdu** **School of Science Education, Federal College of Education (Technical) Bichi, Kano, Nigeria** **Andrew J. Spiers** **School of Science, Engineering and Technology, Abertay University, Dundee, UK** **Hapca Simona** **School of Science, Engineering and Technology, Abertay University, Dundee, UK** **Mukhtar M. Dauda** **Microbiology Department, Bayero University Kano, Nigeria** **Yusuf Y. Deeni** **School of Science, Engineering and Technology, Abertay University, Dundee, UK** **Abstract** **Vector resistance to insecticides is a major challenge in the crusade towards effective malaria control. We report the differential expression of two genes implicated in insecticides resistance and their putative transcriptional regulator (GCLC, GCLM & Nrf2 respectively). An.gambiae raised from agricultural and residential field-caught larvae from Sudan Savannah region of northern Nigeria selected on three different insecticides (4% DDT, 0.75% Permethrin and 0.1% Bendiocarb) were used according to the recommendation by the WHO (2013d) and subsequently used for the Quantification of expression levels of GCLC, GCLM & Nrf2 using end-point semi-RT-QPCR involving the use Gel densitometry analysis to compare the differential expression of each of the test genes with the housekeeping gene Ubiquitin in the all the mosquito strains tested. The expression analysis of GCLM, GCLC and Nrf2 revealed that the levels of expression of the resistance genes and their transcriptional regulator particularly in the resistant strains of An. gambiae that survived insecticide exposure were significantly (P≤ 0.001) up-regulated relative to A-Base and R-Base strains in agricultural and residential settings respectively. The increased expression levels or up-regulation of these genes in this population suggest their probable roles in the response and adaptation of An. gambiae to insecticide challenges.** **Key words: Differential expression, insecticide resistance, Anopheles gambiae,**
Archana Singh **GICICRST1802080**	**Agro waste properties by using vermicomposting and composting process** **Archana Singh** **Institute of Environment and Sustainable Development** **Banaras Hindu University, Varanasi-221 005, UP, India** **Gopal Shankar Singh** **Institute of Environment and Sustainable Development** **Banaras Hindu University, Varanasi-221 005, UP, India** **Abstract** **Solid waste disposal is a serious environmental pollution issue for human race**

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

14

across the globe. Vermicomposting is used as one of the safest methods for reduction and recycling of organic waste, resulting into humified fractions with great agronomic potential which promotes soil fertility when applied to the soil. In this study, vermicomposting effects on different agro-waste (paddy straw and flower waste) after mixing with cattle dung has been discussed in comparison to composting. And, comparison are done on the basis of chemical properties and particle size fractions of agro-waste. Different agro-waste have resulted into different particle size fractions after composting and vermicomposting according to substrate composition. In addition, the potential of agro-waste generally increased by conversion of the substrate into finest particles with low C:N ratio and high enzymatic activities through vermicomposting. All the bio-wastes were pre-composted for 15 days and followed by vermicomposting process to make the substrate palatable for earthworms. Earthworm gut is biologically active reactor which turns the coarser particles into finest particles. Composting process is somehow, decomposes the agro-waste but, using the process coarser sized particles formed in comparison to vermicomposting. However, composting process results into the better agricultural potential having finer and identical particles size (< 5mm) than cruder compost. This study concluded that vermicompost has exceeded the conventional compost in all aspect of agrochemical properties. Although, effects of vermicomposting on properties of other bio-wastes in the direction of particle size fractions needs more investigation.

Keywords: Vermicomposting, composting, agro-waste, waste generation, particles size

Sanusi Moyi Salame
GICICRST1802081

Analysis Of The Prevalence Of Gastrointestinal Nematodes Affecting Sheep And Goats In Sokoto Metropolis

MOYI S.S.,
College of Agriculture, Umaru Ali Shinkafi Polytechnic,Sokoto

UMAR L.A.,
College of Agriculture, Umaru Ali Shinkafi Polytechnic,Sokoto

A. BELLO
Faculty of Veterinary Sciences , Usmanu Danfodiyo University Sokoto, Nigeria

Abstract
A research was conducted in some selected areas in Sokoto Metropolis. To find out the Prevalence of Gastro Intestinal Nematodes affecting sheep and goats in Sokoto metropolis between March to september 2017. A random sampling techniques was employed to select the study animals. A total number of 514 small ruminants (309 Goats and 205 sheep) of all sexes and ages were used in this study. Those animals with the age of less than one year were considered as young, while those greater than or equal to one year were considered as adults. The total sample size was calculated based on the predetermination of the following parameters a 95% level of confidence, 5% desired level of precision and 50% expected prevalence. The prevalence was calculated by dividing the number of positive animals by the total number of animals examined and times 100. Percentage was used to measure prevalence and Chi Squared test was used to measure the association between the prevalence of the parasites and the age, sex and species of the animals. In all analyses, confidence level was held at 95% and $P<0.05$ was set for significance. A total of 914 faecal samples were collected and analyzed in the parasitology laboratory of Usmanu Danfodiyo University Sokoto by using simple test tube floatation technique, 390 or 42.7% of the samples revealed different types of nematodes eggs while 524 or 57.3% did not reveal nematodes eggs. Five hundred and sixty-nine (569) faecal samples were from goats while three hundred and forty-five (345) faecal samples were from the sheep. The result obtained indicated that the prevalence of parasitic gastro intestinal nematodes in Sokoto metropolis is higher in goats 43.2%, while sheep

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

15

	is 41.7%. the nematodes are higher in adult animals than in young animals. Adult sheep is 44.4% while adult goats is 47.2%. young sheep is 20.5% while young goats is 35.9%. The male sheep is 36.7% while the male goat is 43.7%. The female sheep is 44.4% while the female goat is 42.3%.From these results it was clear that the male goats and female sheep were more infected than female goats and male sheep, however; there was no statistical significance (P>0.05) among male and female animals. it was recommended that sokoto government should encourage rearers on strategic routine deworming of all ruminants. Keywords: Samples, prevalence, nematodes and gastro intestinal.
Mr. Okunlola Babatunde Abraham GICICRST1802008 2	**Climate Change Research On Earth Observation Of Big Data** **Mr. Babatunde Abraham Okunlola** **Senior Technologist** **Federal University Of Technology (Akure)** **Department Meteorology And Climate Science** **P.M.B 704 Akure, Ondo State** **Nigeria** **Abstract** **Earth observation technology has provided highly useful information in global climate change research over the past few decades and greatly promoted its development, especially through providing biological, physical, and chemical parameters on a global scale. Earth observation data has the 4V features volume, variety, veracity, and velocity of big data that are suitable for climate change research. Moreover, the large amount of data available from scientific satellites plays an important role. This study reviews the advances of climate change studies based on Earth observation big data and provides examples of case studies that utilize Earth observation big data in climate change research, such as synchronous satellite–aerial–ground observation experiments, which provide extremely large and abundant datasets, Earth observational sensitive factors e.g., glaciers, lakes, vegetation, radiation, and urbanization, and global environmental change information and simulation systems. With the era of global environment change dawning, Earth observation big data will underpin the Future Earth program with a huge volume of various types of data and will play an important role in academia and decision making. Inevitably, Earth observation big data will encounter opportunities and challenges brought about by global climate change.** **Keywords** **Earth observation big data Climate change Information and simulation systems Sensitive factors Synchronous satellite-aerial-ground observation experiments**
Sanusi Moyi Salame GICICRST1802083	**Analysis Of The Prevalence Of Gastrointestinal Nematodes Affecting Sheep And Goats In Sokoto Metropolis** **Moyi S.S.,** **College Of Agriculture, Umaru Ali Shinkafi Polytechnic,Sokoto** **Umar L.A.** **College Of Agriculture, Umaru Ali Shinkafi Polytechnic,Sokoto** **Bello A.** **Faculty Of Veterinary Sciences , Usmanu Danfodiyo University Sokoto, Nigeria** **Abstract** **A research was conducted in some selected areas in Sokoto Metropolis. To find out the Prevalence of Gastro Intestinal Nematodes affecting sheep and goats in Sokoto metropolis between March to september 2017. A random sampling techniques was employed to select the study animals. A total number of 514 small ruminants (309 Goats and 205 sheep) of all sexes and ages were used in this study. Those animals with the age of less than one year were considered as**

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

16

young, while those greater than or equal to one year were considered as adults. The total sample size was calculated based on the predetermination of the following parameters a 95% level of confidence, 5% desired level of precision and 50% expected prevalence. The prevalence was calculated by dividing the number of positive animals by the total number of animals examined and times 100. Percentage was used to measure prevalence and Chi Squared test was used to measure the association between the prevalence of the parasites and the age, sex and species of the animals. In all analyses, confidence level was held at 95% and $P<0.05$ was set for significance. A total of 914 faecal samples were collected and analyzed in the parasitology laboratory of Usmanu Danfodiyo University Sokoto by using simple test tube floatation technique, 390 or 42.7% of the samples revealed different types of nematodes eggs while 524 or 57.3% did not reveal nematodes eggs. Five hundred and sixty-nine (569) faecal samples were from goats while three hundred and forty-five (345) faecal samples were from the sheep. The result obtained indicated that the prevalence of parasitic gastro intestinal nematodes in Sokoto metropolis is higher in goats 43.2%, while sheep is 41.7%. the nematodes are higher in adult animals than in young animals. Adult sheep is 44.4% while adult goats is 47.2%. young sheep is 20.5% while young goats is 35.9%. The male sheep is 36.7% while the male goat is 43.7%. The female sheep is 44.4% while the female goat is 42.3%.From these results it was clear that the male goats and female sheep were more infected than female goats and male sheep, however; there was no statistical significance $(P>0.05)$ among male and female animals. it was recommended that sokoto government should encourage rearers on strategic routine deworming of all ruminants. Keywords: Samples, prevalence, nematodes and gastro intestinal.

Farah Hannan Anuar
GICICRST1802089

Synthesis, Characterisation and Antifouling Properties of Poly(ethylene glycol)-Polydimethylsiloxane Polyurethane Copolymers

Farah Hannan Anuar
School of Chemical Sciences and Food Technology, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia

Ain Athirah Zainuddin
School of Chemical Sciences and Food Technology, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia

Wan Syaidatul Aqma
School of Biosciences and Biotechnology, Faculty of Science and Technology, Univeristi Kebangsaan Malaysia,
43600 Bangi, Selangor, Malaysia

Rizafizah Othaman
School of Chemical Sciences and Food Technology, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia

Abstract.
Wetted surfaces give potential to the formation of biofilms. Biofilm is a process where it can give adverse impacts. Uncontrolled biofilms will cause surface to damage and eventually increases the consumption of energy, time and cost of an operation. One of the alternatives to control biofilms is by the application of antibiofilm coatings on the surface. This study was conducted to produce a new type of antibiofilm coating containing poly(ethylene glycol) and polydimethylsiloxane crosslinked copolymers. Poly(ethylene glycol)-polydimetylsiloxane (PEG-PDMS) crosslinked copolymers with four PEG:PDMS weight percentages of 30%:70%, 45%:55%, 65%:35% and 100%:0% were synthesised. In the copolymers synthesis, the terminal hydroxyl groups glycerol, PEG and PDMS were reacted with isocyanate groups from hexamethylene diisocyanate (HMDI). Glycerol was added to act as crosslinking agent. The synthesised copolymers were characterised by FTIR spectroscopy,

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

17

	while thermal characterisation was carried out through DSC and TGA analyses. The surface of the copolymers was investigated by conducting contact angle analysis, SEM and XPS. The antibiofilm test was conducted with marine bacteria that have the ability to produce strong or moderate biofilms. All bacteria that have been used in this study were isolated from Port Klang's seawater. The presence of crosslinks in the polymer chains has enhanced the physical and structural properties as well as thermal stability of the PEG-PDMS crosslinked copolymers. The synthesis of PEG-PDMS crosslinked copolymers was achieved by the appearance of crucial absorption peaks in FTIR spectra. Through DSC and TGA analyses, thermal stability of the copolymers was better than homopolymer. Contact angle analysis and SEM showed that the surface of PEG-PDMS crosslinked copolymers has low surface energy. The XPS spectroscopy indicates that there was $Sn3d5$ signal recorded that might be due to the excess catalyst used. Based on the antibiofilm test, PEG-PDMS crosslinked copolymers with weight percent PEG:PDMS of 30%:70% has good antibiofilm properties compared to other copolymers. Keywords. poly(ethylene glycol), polydimethylsiloxane, crosslink, copolymers, thermal
Mohd Ikmar Nizam Mohamad Isa GICICRST1802090	**Effect of ethylene carbonate on the properties of 2-hydroxyethyl cellulose–ammonium nitrate solid polymer electrolyte** **Nur Hafiza Bt. Mr Muhamaruesa** **Advanced Materials Team, Ionic State Analysis (ISA) Laboratory, School of Fundamental Science, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu Darul Iman, MALAYSIA.** **Mohd Ikmar Nizam B. Mohamad Isa** **Advanced Materials Team, Ionic State Analysis (ISA) Laboratory, School of Fundamental Science, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu Darul Iman, MALAYSIA.** **Abstract** This paper reports the properties of 2-hydroxyethyl cellulose–ammonium nitrate solid polymer electrolyte (2-HEC–NH4NO3 SPE) after plasticized with ethylene carbonate (EC). The SPE has been prepared via solution casting method, and then was characterized by Electrical impedance spectroscopy (EIS), Fourier transform infrared (FTIR) spectroscopy, X-ray diffraction (XRD) and Linear sweep voltammetry (LSV). EIS analysis shows that the ionic conductivity, σ was enhanced to 10^{-3} Scm-1 upon addition of 16 wt.% of EC. From FTIR analysis, the interaction of 2-HEC–NH4NO3–EC SPE was observed by the presence of new doublet C=O stretching band of EC at 1802 cm-1 and 1773 cm-1. XRD analysis reveals the amorphous nature for all SPEs, and exhibits the most amorphous nature at EC-16. LSV measurement shows that the SPE was stable up to 2.7 V. The results obtained from this study indicate that the 2-HEC–NH4NO3–EC SPE has a great potential as a conducting medium in a protonic battery. Keywords: 2-hydroxyethyl cellulose; solid polymer electrolyte; ionic conductivity; structural study; linear sweep voltammetry.
Henry Okoh GICICRST1802091	**Design of a Virtual Instrument System for Scientific Research** **Okoh, Henry** **Department of Physics, Delta State College of Physical Education, Mosogar.** **Osagie, Gladys** **Department of Biology, Delta State College of Physical Education, Mosogar.** **Abstract** This project focuses on design of virtual instrument (VI) modified system for scientific measurements. Vertical electrical sounding was done using the

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

18

Schlumberger array for 1-dimensional survey. The VI system was tested alongside the ABEM terrameter SAS 4000 device to achieve project objectives. VI system comprises of personal computer for display, signal generator (oscillator) for ac current, data acquisition (DAQ) device for voltage and current measurement. VI system is cheap, flexible, and cost-effective, makes it easy to view full waveforms in real time, effective, user-friendly and can be modified for many different applications.

The oscillator generates a signal of 0.5 and 0.9Hz for passage into the earth. NI USB-6255 data acquisition device measures voltage response from earth across potential electrodes (MN) and voltage across 10Ω resistor respectively. Data obtained from Schlumberger survey was interpreted using IPI2Win analysis software and results compared with that of a conventional ABEM terrameter SAS 4000 device.

The interpreted results for 1-dimensional (Schlumberger) surveys showed a noticeable level of consistency in the calculated percentage error for both VI and ABEM terrameter SAS 4000 respectively. The percentage error of 1-D result was 5.68% and 6.18% for VI, 5.74% and 3.63% for ABEM terrameter. The results obtained from both VI and ABEM terrameter SAS 4000 revealed a close semblance.

Keywords: Cost-effective, Data acquisition (DAQ), Full-waveform, Multi-disciplinary, Schlumberger array, Virtual Instrumentation (VI).

Roufia Mezaache GICICRST1802092	**Diarylmethyl ethers and Pd salts or complexes : a perfect combination for the protection and deprotection of alcohols**

Yann Bikard
Laboratoire de synthèse et réactivité organiques, associé au CNRS, Institut de Chimie, Université de Strasbourg, France.

Roufia Mezaache
Laboratoire de Chimie et Chimie de l'Environnement, Département de Chimie, Faculté des Sciences, Université de Batna, Batna 05000, Algeria

Jean-Marc Weibel
Laboratoire de synthèse et réactivité organiques, associé au CNRS, Institut de Chimie, Université de Strasbourg, France.

Abdelhamid Benkouider
Laboratoire de Chimie et Chimie de l'Environnement, Département de Chimie, Faculté des Sciences, Université de Batna, Batna 05000, Algeria

Claude Sirlin
Laboratoire de synthè`ses mé́tallo-induites, associé́ au CNRS, Institut de Chimie, Universite, L. Pasteur, 67000 Strasbourg, France

Patrick Pale
Laboratoire de synthèse et réactivité organiques, associé au CNRS, Institut de Chimie, Université de Strasbourg, France.

Abstract
The syntheses of highly functionalized molecules usually require several steps dealing with the protection and deprotection of those functional groups.[1, 2] The choice of protecting groups is often critical for synthesis success, specially for the total synthesis of complex natural products and analogs.[2,3] Benzyl type protecting groups are among the most commonly used, due to their deprotection conditions orthogonal to other protecting and functional groups[1-3], and they have been applied to the protection of alcohols, thiols, amines, and acids.[1, 2] Nevertheless, their introduction is not always simple due to the basic or acid condition required,[2] in order to solve this problem, we recently described a convenient and efficient method based on palladium catalysts

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

19

	(PdCl2, PdCl2(CH3CN)2) has been developed for the protection of Primary and secondary alcohols with bis(4-methoxyphenyl)méthanol (BMPMOH) in good yield. Deprotection could easily be achieved using the same catalyst but in ethanol. Both Pd-catalyzed protection and deprotection were orthogonal to other methods and fully compatible with other functional groups. The mildness of these protection and deprotection methods as well as their selectivity render them very useful tools for total synthesis Key words : alcohols, ethers, protection, déprotection, BMPMOH, PdCl2, PdCl2(CH3CN)2, DCE.
Gilda Akhtarian GICICRST1802096	**Travel and Tourism Impact to the local People Economy in Iran** **Gilda Akhtarian** **FAZA GOOYA Institute, Prof. Eqlima Mahdavi** **University of Tehran** **Abstract** Iran is one of the central Asia countries with a population of 81 million. Moreover, every year approximately one million tourists come to visit Iran. Most of the tourist places are located in the north and capital of Iran. In this research, the effect of tourism in the economy of local people has been studied. A questionnaire survey has been done during the winter season and the questionnaire has been answered by the tourists and the local people of Iran. Finding of this research shows a 25% increase in the income of tourist places inhabitant than the people in the normal area with the same level of. Outcome of this research propose a system to the government for improvement of the local residents in the normal area by giving some subsidies. Key word: Tourism, Economy, Questionnaire survey, Iran
Sadegh Ehyaeian GICICRST1802097	**A Study on Unplanned settlement in Kabul, Afghanistan** **Samir Ranjbar** **Dept. of administration, Nasrullah Istanekzai** **Professor, Dept. of administration Kabul University, Kabul Afghanistan** **Sadegh ehyaeian** **Dept. of administration, Nasrullah Istanekzai** **Professor, Dept. of administration Kabul University, Kabul Afghanistan** **Abstract** According to a report published in The Guardian, Kabul, the capital city of Afghanistan is the fifth fastest growing city in the world, whose population has increased fourfold since 2001 from 1.2 million to 4.8 million people. The main reason of this increment is identified as the return of Afghans migrated during the civil war. In addition to the return of immigrants, a steep economic growth due to foreign assistance in last decade creating lots of job opportunities in Kabul resulted in attraction of individuals from the neighboring provinces as well. However, the development of urban facilities such as water supply system, housing transportation and waste management systems has yet to catch up to this rapid increase in population. Since Kabul city has developed traditionally and municipal governance had very limited capacity to implement municipal bylaws. As an unwanted consequence of this growth 70% of Kabul citizens contributed to developing informal settlement for which we can say that around three million people living in informal settled areas, lacking the very vital social and physical infrastructures of livelihood. This research focuses on a region with 30 ha area and 2100 people residents in the center of Kabul city. A comprehensive land readjustment concept plan has been formulated for this area. Through this concept plan physical and social infrastructure has been demonstrated and analyzed. Findings of this paper propose a solution for the problems of this unplanned area in Kabul which is readjusting of unplanned area by a self-supporting

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

20

process. This process does not need governmental budget and can be applied by government, private sectors and landowner associations. Furthermore by implementing the Land Readjustment process, conceptual plans can be built for unplanned areas, maximum facilities can be brought to the residents' urban life, improve the environment for the users' benefit, promote the culture and sense of cooperation, participation and coexistence in the mind of people, improving the transport system, improvement in economic status (the value of land increases due to infrastructure availability and land legalization). In addition to all these benefits for the public, we can raise the revenue of government by collecting the taxes from land owners. This process is implemented in most of countries of the world, it was implemented for the first time in Germany and after that in in most cities of Japan as well, and is known as one of the effective process for infrastructural development.

To sum up, the notable characteristic of the Land readjustment process is that it works on the concept of mutual interest in which both land owners and government takes advantage. Though in this process, the engagement of community is very important and without public cooperation this process can face the failure.

Key words: Land Readjustment, Informal settlement, Kabul, Afghanistan

Odogiyon A.H **GICICRST1802100**	**Layout Plans and Its Implications on Land Use in Ifon, Ondo State, Nigeria.** **Tpl. Adeniyi J.O** **Department of Urban & Regional Planning** **Rufus Giwa Polytechnic, Owo** **Tpl. Odogiyon A.H** **Department of Urban & Regional Planning** **Rufus Giwa Polytechnic, Owo** **ABSTRACT** The research appraises layout plan and its implications on land use in Ifon, Ondo State, Nigeria. It identifies all the existing families and corporate organization's lands big enough for subdivision, it also examine the impact of non-approval of layout on land use. Information and data were collected from inhabitants, using structured questionnaire, personal observations and in depth interview. Questions provided in the questionnaire were directed to households in the area. Personal observations were complemented with the use of photographs. 150 residential buildings representatives were sampled with the use of systematic sampling techniques. Univariate techniques were employed for data analysis, in form of tables, and photograph. The findings revealed high number of households who built without approved layout. The research recommends among others that, the Land Use Decree of 1978 be used to back up the study with development control carried out by Planning Authority in the State. The research concluded that, workable formulation and effective control of developments will go a long way at alleviating the seemingly intractable problems of layout plan and approval in order to ensure that population growth and urbanization does not infringe on the sustainability of Ifon people.
Parastoo Souezi **GICICRST1802101**	**Reflections of folklore culture in childrens Literature in Iran** **Parastoo Souezi** **Assistant Professor, Director of children and Youth department of the** **international GAJ Publishing** **Abstract** Culture refers to the lifestyle of people. It includes culture traits such as customs, locations, and vogues. Folk cultures are usually small traditional communities, but sometimes it is very wide and too large in community level. It is ways of living along with pass down traditions. Folk literature has come in various forms in texts. Manifestations of the culture can be found in the

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

21

	literature of the country. Nowadays, Children's books have a wide place in the realm of Persian literature. Traditional poetry, prose, verses, and stories and some heroes and fairy tale figures are signs of the folk culture in literature. Folklore is used frequently as a basis for literature for children. Elements of folk culture are seen in poems dedicated to children and adolescents. There are traditions such as parties, festivals, religious and non-religious beliefs such a vow, a legendary character in that poem. In this article we are introducing these elements. The poets have tried to make children familiar with popular culture by transferring indirectly folk customs and beliefs in the poems. Entering folklore to children's literature especially in the poems shows the folk is very important in the life of Iranians and they respect it. This is because the transmission of the folk culture to the children with literature and poem. Key Words: folklore, children's literature, poem, contemporary.
Krishna Kaustubh **GICICRST1802103**	**Machines Trumps Humanity: Rising Impact Of AI And Technology And Its Effect On Workforce Panorama** **Krishna Kaustubh** **School of Liberal Studies Gandhinagar, Gujarat.** **Abstract** Technology has emerged at a much quicker pace than workforce did. It has become an inseparable part of people's life. The accelerating scope of the technology targeting high skilled knowledge work is driving the society into some new era which it has never experienced before. As was the case in the industrial revolution, that machines and technology will take away people's job and hence create income inequality among the groups and this is the actual reality. Unemployment is at its boom making a rate of 7.9 % of the total world population claimed by The World Bank. Technology has exponentially divided and conquered the work force and the market. Statistics says that more than 47% of jobs will be taken over by artificial humans in the coming two decades and which has imperilled job creation. Technology has increasingly taken over roles hitherto performed by human beings and eliminating jobs, shifting towards automation to cut down on their cost and bring in efficiency. But in order to gain automation, society cannot sacrifice its own worthy asset, which is workforce. However it is being substituted, the workforce must be embraced and trained in order to make them capable and much more productive of artificial humans. Indeed it's the humans who write the algorithms and make robots, then the robot pulls the trigger becomes a job killer and there is no combat to this attack on humans. There are countries with two digit unemployment rate irrespective of bulk production, the GDP would be running closely parallel to the ground, FDI would be dipping as low as ever, Crime rate would definitely make a boom. Hence, this paper looks at proposing a solution to the problems created by automation…… Keywords: automation, artificial humans, unemployment, reskilling, workforce
 Ganzorig Aduuch **GICICRST1802104**	**Pyrolysis Of Mongolian Animal Bones And Used Tires** **Ganzorig Aduuch** **Chemistry Department, Natural Science and Technology Institute, Khovd University, Khovd province, Mongolia** **Abstract** It was proven that doing a pyrolysis research in used tires and Mongolian animal bones is possible to produce a resin from petroleum similar to the coal. A better solution from an environmental and economic standpoint is to thermally reprocess the used tires, animal bone into valuable products such as activated carbon, other solid carbon forms (carbon black, graphite, and carbon fibers), and liquid fuels. Keyword: Used tires, animal bones, pyrolysis
Mohammad Shafi	**Transportation Planning and policy for Kabul City**

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

22

Behbudy GICICRST1802107	**Mohammad Shafi Behbudy** **Civil Engineering, UN Habitat, Kabul, Afghanistan** **Abstract** **Kabul city (capital of Afghanistan) is one of the fastest growing cities in the world. This city is suffering from a highly congested traffic, caused by a dramatic increase of its population and a growing flow of economy during the last decade. This research is a very important and initial step towards transportation planning of Kabul city. In this thesis, the travel demand of Kabul city has been analyzed and forecasted for the current year of 2015 and mid-term future year of 2025. Traffic assignment analysis and a simulation were performed to comprehend the main causation of congestion. The results signify that the private transportation demand is less than the physical capacity of road network in Kabul city. Thus, in the short term there is no need to introduce any new link to the road network of Kabul city and the actual capacity of the road network should be raised to reach its physical capacity by developing the road infrastructure and improving the traffic management. On the other hand, the traffic assignment results pinpoint that the main factor in creating congestion in Kabul city is the large proportion of public transportation demand. Therefore, it is recommended that high capacity public transportation facilities should be introduced to the highly required links as shown in the study. The simulation results indicate that in the long-term the travel time will dramatically increase by the growth of population. Hence, in the near future (2025) the capacity of highly congested links should be improved by introduction of new links. The data for analyzing transportation of Kabul city is not fully sufficient, yet this study can quantify the large scale transportation problems. At the end of the study, the required transportation data is quoted, which is to be gathered for more precise results.** **Key Words: Transportation, Planning, Policy, Kabul, Afghanistan.**
Rong-Mao Lee GICICRST1802108	**Combination Design of Axial and Radial Regulation Function for the Active Magnetic Bearing** **Zhi-Bin Wu** **Department of Mechanical engineering, National Chin-Yi University of Technology, Taichung, Taiwan** **Yi-Hsing Yu** **Department of Mechanical engineering, National Chin-Yi University of Technology, Taichung, Taiwan** **Rong-Mao Lee** **Computer and Intelligent Robot Program for Bachelor Degree, National Pingtung University, Pingtung County, Taiwan** **Tsung-Chia Chen** **Department of Mechanical engineering, National Chin-Yi University of Technology, Taichung, Taiwan** **Abstract** **Active magnetic bearings (AMBs) have been gradually developed and applied to industrials. For the development of a full magnetic support milling spindle system, one axial AMB and two radial AMBs should be included at least. As a result, the dimension of the milling spindle is usually too large for the application of machine tools. A combination design of one axial AMB and one radial AMB is reported in this work. A permanent magnet (PM) has been embedded to provide axial force to support the rotor weight so that the force specification requirement and the dimension of the axial AMB can be reduced. On the other hand, magnetic fluxes from the two AMBs share a part of the**

structure to further reduce the full structure dimensions. The analysis of the proposed design has been introduced in this paper, including the size, materials and the regulation force strength.

Keywords :Active Magnetic Bearing, Magnetic Loop Analysis, Axial Magnetic Bearing, Radial Magnetic Bearing

Rofi Rosdiani **GICICRST1802109**	**FINTECH Utilization in Optimizing the Potential of Micro, Small and Medium Enterprises (MSMEs) through Global Halal Hub as an Effort to Achieve Sustainable Development Goals** **Raudatul Munauwarah** **University of Gunadarma** **Rofi Rosdiani** **University of Gunadarma** **Sania Karaman** **University of Gunadarma** **Abstract** MSMEs is a growing business unit and not a few in Indonesia. Many of MSMEs entrepreneurs who are members of micro business are still in poverty line. MSMEs only have access to global production chains which enter the sector without a plan because it is not absorbed by the formal sector. Lack of attention from the government also became the trigger. UMKM in Indonesia to date can be said to be less developed because it has access to financing access and technology. Community-managed MSMEs and collaboration between government and communities is one way to advance MSMEs in Indonesia on capital and financial issues. Not quite there MSMEs can be more optimal when collaborating with MSMEs halal hub. Given Indonesia is the largest Muslim country that has great potential to be a halal product industry. The combination of technology with finance or known as fintech is also no less in supporting the smoothness of MSMEs which is concluded with halal hub. Halal optimization hubs that synergize with government programs in terms of poverty alleviation and improving MSMEs will be more developed if the government directly assist the community through communities established each region. This program that drives a region to develop regional potential will be more efficient because we can mobilize local communities to jointly manage a product and develop a halal industry, infrastructure and increase public purchasing power. This program can also improve the economy and create jobs. In addition, ZISWAF instruments can be more productive as a source of capital and cooperate with sharia banking as a means to simplify the financial system will benefit from the program and significant capital growth. Keyword: Financial Technology, Halal hubs, Indonesia, MSMEs
Nuanpan Lawson **GICICRST1802054**	**An Efficient General Family Of Estimators For Population Mean When Non-Response Occurs In The Study Variable** **Nuanpan Lawson** **Department of Applied Statistics, Faculty of Applied Science, King Mongkut's University of Technology North Bangkok, Thailand** **Thanapanang Rachokarn** **Department of Applied Statistics, Faculty of Applied Science, King Mongkut's University of Technology North Bangkok, Thailand** **Abstract** This paper deals with the problem of estimating population mean in the presence of non-response for the study variable y utilizing a few known population parameters of the auxiliary variable x under simple random

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

24

sampling with sub-sample of non-response. We have proposed a new estimator for estimating population mean and based on the new estimator we suggested an improved general family of estimators to estimate the population mean in the presence of non-response of study variable y, when the population mean of auxiliary variable x is known. The asymptotic properties of the proposed estimators such as bias, mean square error (MSE), and minimum mean square error have been obtained. In addition this study supports the presupposition with numerical results showing the performance of the proposed estimators as clearly more efficient than the other relevant estimators.

Keywords: Family of estimators, Auxiliary variables, Non-response, Minimum mean square error

---

Artificial Intelligence License Plate Recognition for Vehicle Entrance System.

Ashardi Abas
Computing Department,University Pendidikan Sultan Idris, Tanjong Malim 35900 Perak,Malaysia

Ashardi Abas
GICICRST1802055

Abstract
Due to the increasing number of vehicles accessing UPSI main campus nowadays, it is difficult to monitor the rule regulations, enforcement and security. Currently, the security checkpoint is still using the manual procedures to monitor driver's data entrance. At the same time, it is time-consuming for an officer to check the car sticker/plate every day physically. Also, it is not feasible to a hire full-time security officer just to check on the sticker/car plate. As a solution, an artificial intelligence system to identify the car plate has been building up. By implementing this intelligence system, it's capable to enhance the management security and controlling of vehicles accessing by utilizing license plate recognition. While the vehicle approaches the main security gate, the license plate system recognition will process and execute license plate numbers to the system database. While a vehicle exits through the exit security gate, the same procedure will be repeated. The archives of car entrances and exits will be utilized for parking price calculations.

Locally and globally small Riemann sums and Henstock-Stieltjes integral of set-valued functions

Muawya Elsheikh Hamid
School of Mathematical Science, Yangzhou University, Yangzhou 225002, P.R. China

Luoshan Xu
School of Mathematical Science, Yangzhou University, Yangzhou 225002, P.R. China
School of Management, Ahfad University for Women, Omdurman, Sudan

Dr. Muawya Elsheikhhamid Ebrahim Mohmed GICICRST1802062

Abstract

In recent years there has been increasing interest in multifunction's (set-valued functions) because of their importance in several applied areas of research, such as mathematical economics, optimization and optimal control and statistics. Furthermore, integrals of set-valued functions have been studied in connection with statistical problems. In this study, we first define and discuss the locally small Riemann sums (LSRS) for set-valued functions. In addition the necessary and sufficient conditions have been obtained for set-valued functions which has (LSRS), i.e., if the set-valued function is Henstock-Stieltjes integrable on [a,b] then it has (LSRS) and the converse is always true. Secondly, the globally small Riemann sums (GSRS) for set-valued functions is defined and discussed, the necessary and sufficient conditions have been given for set-valued functions which has (GSRS), i.e., if the set-valued function is Henstock-Stieltjes integrable on [a,b] then it has (GSRS) and the converse is always true.

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

25

	Keywords: Set-valued functions; Henstock-Stieltjes integral; support functions $\sigma(x; F(\zeta))$ of set; locally small Riemannsums (LSRS); globally small Riema
Rajendra Singh **GICICRST1802065**	**Impact of Climate Change and Human Intervention on River Flow Regimes** **R. Singh** **Agricultural & Food Engineering Department** **IIT Kharagpur** **N. Mittal** **Agricultural & Food Engineering Department** **IIT Kharagpur** **A. Mishra** **Agricultural & Food Engineering Department** **IIT Kharagpur** **Abstract** Climate change and human interventions like dam construction bring freshwater ecosystem under stress by changing flow regime. It is important to analyse their impact at a regional scale along with changes in the extremes of temperature and precipitation which further modify the flow regime components such as magnitude, timing, frequency, duration, and rate of change of flow. In this study, the Kangsabati river is chosen to analyse the hydrological alterations in its flow regime caused by dam, climate change and their combined impact using Soil and Water Assessment Tool (SWAT) and the Indicators of Hydrologic Alteration (IHA) program based on the Range of Variability Approach (RVA). Results show that flow variability is significantly reduced due to dam construction with high flows getting absorbed and pre-monsoon low flows being augmented by the reservoir. Climate change alone reduces the high peaks whereas a combination of dam and climate change significantly reduces variability by affecting both high and low flows, thereby further disrupting the functioning of riverine ecosystems. Analysis shows that in the Kangsabati basin, influence of dam is greater than that of the climate change, thereby emphasising the significance of direct human intervention. Keywords: Climate change, human impact, flow regime, Kangsabati river, SWAT, IHA, RVA.
Nazaitulshila Rasit **GICICRST1802066**	**Production and characterization of bio catalytic enzyme produced from fermentation of fruit and vegetable wastes and its influence on aquaculture sludge solubilisation.** **Fatma Syahirah Mohammad** **School of Ocean Engineering, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia.** **Nazaitulshila Rasit** **School of Ocean Engineering, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia.** **Abstract** The aquaculture wastewater discharge from shrimp aquaculture industry may resulted in high organic content and nutrients that may considered as a source of surface and ground pollution. Hence, before disposing the wastewater, it has to be treated efficiently to reduce its pollutants concentration. Anaerobic digestion is one of common method used for wastewater treatment but it has limitation in terms of long retention times and low overall degradation efficiency of the organic matter. Therefore, a pretreatment is usually applied before further treatment. This study focused on the production of bio catalytic enzyme from fermentation of fruit and vegetable wastes such as pineapple,

mango, orange and tomato dregs to increase aquaculture wastewater solubility. The fermentation of the wastes were produced by three months fermentation of the mixture of molasses, waste and water with the ratio of 1: 3: 10. Characterization of the enzyme showed that the enzyme possessed lipase, amylase and protease activity. All type of fruit and vegetable wastes were performed at different pH and treatment time for 120 hours and the increase in reduction of total suspended solid (TSS) and volatile suspended solid (VSS) were observed when sludge treated with all type of enzyme solution. The chemical oxygen demand (COD) and total ammonia nitrogen (TAN) solubility were determined to identify the sludge solubilisation. The COD and TAN solubilisation were highest found to be 88% and 64% respectively for Orange Garbage Enzyme (OGE) at condition of pH 7.0 in treated sludge compare with other type of enzyme. Consequently, the finding from this study showed that the enzyme produced from different type of fruits and vegetables wastes has potential to improve the aquaculture sludge solubility from insolubilize to solubilize substances for further anaerobic digestion system efficiency.

Keywords: enzyme, fermentation, fruits and vegetables waste, solubilisation, solubility, aquaculture sludge.

Worplace Safety Improvement In Sme Manufacturing: A Government Intervention Programme

S.S. Zulkiflya, Izani Mohd Zain
Department of Occupational Safety and Health Negeri Sembilan, Seremban, Negeri Sembilan, Malaysia

N.H. Hasana, Mohd Rafee Baharudin
Department of Community Health, Faculty of Medical and Health Science, Universiti Putra Malaysia,Serdang, Selangor, Malaysia

Nor Halim Hasan
GICICRST1802071

Abstract

Small and medium enterprises (SMEs) continue to play their main roles towards Malaysia's economy. SMEs contribute 32% into national GDP and own 63% of total workforces in the nation. Despite their vital roles in country development, SMEs contribute the highest percentage of the total workplace accidents in every year. This scenario caused by poor level of occupational safety and health compliance practices among the SMEs especially within the manufacturing sectors. Underlying factors which hinder the SMEs to practise good safety management are including financial constraint, lack of knowledge and expertise, limited human resources and inexistence of knowledgeable safety personnel. In realizing these problems, Department of Occupational Safety and Health (DOSH) conducted an intervention programme with its objective to increase the level of compliance in OSH among SME manufacturing. A total number of 59 SME manufacturings within Negeri Sembilan has been selected to undergo the intervention programme based on their poor grading in OSH audits. The intervention which in the form of trainings and workshops then being conducted 4 times in a year and being presented by the qualified and experienced DOSH officers towards the companies' representatives. The modules were including "occupational safety and health legislations", "workplace safety and health committee", "hazard identification-risk assessment-risk control", "chemical safety management compliances" and "accident investigation reporting system". To measure the effectiveness of the intervention, DOSH has performed compliance audits pre and post to the intervention. Based on the audits' grading results, there was the improvement of 38% in OSH compliance performance among the participating SMEs. T-test analysis was furthermore performed to compare the mean of compliance grades achieved by the companies before and after the intervention programme. The result showed significant different in the increment of OSH compliance grading among the participating SME manufacturing companies (P-value <0.01). These results proved that government intervention conducted by DOSH could help the

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

27

	SMEs in elevating their OSH performances. Keywords: Occupational Safety and Health, Safety Intervention, Government Intervention, Safety Compliance, Safety Management, Manufacturing, Small and Medium Enterprises, Workplace Accidents.
Eriola Hida **GICICRST1802075**	**Comparison Of Photosynthetic Activity Imaging Between To Different Stressed-Pollution Plants In Metalurgicall Area** **Eriola Hida** **Polytechnic University of Tirana, Department of Physics, Tirana, Albania.** **Abstract** Industrial pollution and other stresses affect the reduction of photosynthetic activity of the leaf apparatus. Among the pollutants that are generated by processing scrap in Elbasan are sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), fine particles (PM) as well as dioxins and furans. The impact of air pollution from metallurgical plants is analyzed in endemic plant Cercius Silicuastrum and Populus x canadensis poplar) at different distances from the source of pollution ferrocrome factory.Therefore stress effects on plants are detectable via changed on fluorescence signature of leaves. Air pollution could induce decrease of chlorophyll (Chl) content as well as significant decline of photosynthetic activity. Metallurgical factory in Elbasan that release chemicals and particulates into the atmosphere is considered a source of air pollution. Some plant species grown in area near the factory were studied to evaluate the efficiency of photosynthetic apparatus in pollution conditions via chlorophyll fluorescence imaging during induction kinetics. Chlorophyll fluorescence images were measured using the FluorCam 700MF imaging system as a technique that offers the possibility to study the distribution and patchiness of fluorescence signatures over the whole leaf area. Chl fluorescence images were measured on the leaves of spontaneous plants grown in sites with different level of steel plant air pollution assessed on base of different distances and different directions from the source of the pollution. Contamination effect reflected on photosynthetic activity of leaves was very high particularly on plants located nearer the metallurgical units. Keywords: Chlorophyll fluorescence, chlorophyll fluorescence imaging, spontaneous plant, induction kinetics, photosynthetic apparatus.
Yang Zhang **GICICRST1802086**	**Unsteady characteristics of the shock propagation in a convergent shock tube with small angle** **Yang Zhang** **Center for Engineering and Scientific Computation, and School of Aeronautics and Astronautics, Zhejiang University, Hangzhou, Zhejiang, 310027, PR China** **Jianfeng Zou** **Center for Engineering and Scientific Computation, and School of Aeronautics and Astronautics, Zhejiang University, Hangzhou, Zhejiang, 310027, PR China** **Yao Zheng** **Center for Engineering and Scientific Computation, and School of Aeronautics and Astronautics, Zhejiang University, Hangzhou, Zhejiang, 310027, PR China** **Abstract** The whole evolution of the incident shock propagation in a convergent shock tube with small angle is studied in detail by using the direct numerical simulation. Specifically, the shape of the curved shock and the unsteady flow patterns which differs from the K-H instability, have been evaluated. The results show that as a disturbance of the inclined wall on the shock, the bending position of the incident shock represents periodically changed and its non-dimensional wavelength is larger when the convergent angle becomes greater, indicating a faster response to the curvature variation. At the same time, two different flow instable patterns for the shock propagation in the area reduction

	channel are discovered, one of which is the asymmetric shock bifurcations when the reflected shock from the collision of the right wall interacts with the boundary layer. This instability is closely related to the unsteady vortex shedding behind the bifurcated feet, resulting in the dramatic pressure fluctuation. Another pattern occurs when the reflected shocks generated by the curved incident shock impinge on the upper and lower walls. The collision position moves at a modest speed, which causes the formation of small vortices near the reflection regions.
Ejaz Ahmed **GICICRST1802106**	**Investigation of Rydberg Energy levels and Quantum defects of Boron, Germanium & Silicon** **Ejaz Ahmed** **Affiliation: Physics Ph.D. (Scholar), Physics Department, Hazara University, KPK, Pakistan** **Abstract** **Weakest bound Electron Potential Model Theory has turned out to be a successful theory in explaining many atomic properties, namely, energy levels, transition probabilities and oscillator strengths. The theory has also been used to calculate Rydberg energy levels and quantum defects. In this research, the characteristics of semiconductor & metalloids characteristics hold elements are studied especially focused on Boron (B), Silicon (Si) and Germanium (Ge), energy levels of Rydberg atoms of Boron, Silicon and Germanium are calculated up to n = 50 levels using WBEPMT including calculationof quantum defects in principle quantum number for various configurations of these elements.**

LISTENERS

Oluwasegun Akinbonja Mulemora **Cottage Industries Microfinance Institute,Association of Cottage Industrialists of Nigeria,Nigeria** **GICICRST1802051**
Olawuyi Olusegun David **Tax Section,Board of Internal Revenue Service Ogun State Government,Sango Ota, Ogun State Nigeria** **GICICRST1802**
Edward Fokuo **King Edoff Foundation,,Accra, Ghana** **GICICRST1802053**
Muhammed Opoku Gyamfi **Department Of Plant And Environmental Biology, School Of Biological Sciences,University Of Ghana, Legon,Ghana** **GICICRST1802056**
Steven Albert Ogwal **School Of Science And Technology,United States International University,Nairobi,** **GICICRST1802074**
Abubakar Mohammed Binji **Computer & Electrical Engineering/Ahmadu Bello University,Ahmadu Bello University, Zaria,Nigeria** **GICICRST1802084**
Samuel Saidu Bangura **Revenue Controller,Glory Baptist Schools,Gambia,West Africa** **GICICRST1802085**
Benjamin De-Graft Donkor **Department of Plant and Environmental Biology, School of Biological sciences,University of Ghana, Legon,Ghana**

ICRST (2018) IVth International Conference on Researches in Science & Technology, 13-14 April 2018, London, UK
South Kensington Campus, Imperial College London | London SW7 2AZ, United Kingdom

29

GICICRST1802087
Richmond Boakye   **Department of Psychology,University of Ghana, Legon,Ghana**   **GICICRST1802088**
Diary Khalid   **Mass for Ironand steel industry,Iraq,**   **GICICRST1802093**
Ibrahimu Athumani Semkuya   **Tuff Kings Communications,Tuff Kings Communications,Dar Es Salaam, Tanzania**   **GICICRST1802098**
Issa Khamis Omary   **Tuff Kings Communications,Tuff Kings Communications Ltd,Dar Es Salaam, Tanzania**   **GICICRST1802099**
Steven Albert Ogwal   **School Of Science And Technology,United States International University,Nairobi, Kenya**   **GICICRST1802060**
Khaled Hamouid   **Computer Science Department, University of Batna 2,Batna, Algeria**   **GICICRST1802094**
Aouag Hichem   **Industrial Engineering, University of Batna, Batna, Algeria**   **GICICRST1802095**
Dr Bekir Zihni Yuksek   **Bursa Orhangazi University ,Bursa, Turkey**   **GICICRST1802111**