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Asian Institute of Technology (AIT) , Conference Centre, Bangkok, Thailand

## **KEYNOTE SPEAKER**



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9th International Conference on Researches in Science and Technology (ICRST), 29-30 Dec 2016, Bangkok, Thailand  
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GICECG1610051

**Documentation Of Ethnomedicinal Plants Used By Tribal's Of Yavatmal District,  
Maharashtra,India**

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**ABSTRACT**

An ethnobotanical survey was conducted to collect information about medicinal plants used for the treatment of various health complications by tribals in Yavatmal district. The indigenous knowledge of local traditional healers and native plants used for the treatment of different health disorders were collected through questionnaire and personal interviews. Extensive field survey of different parts of the district was made along with the local tribal villagers and ethnomedicinal / ayurvedic drug practitioners. A survey of herbarium specimen of different herbaria of the district was done. The investigation revealed that, the traditional healers and the inhabitants use 20 species of plants belonging to 18 families to treat various health complications. Results depict that fresh plant materials were invariably preferred for the treatment of long term complications. Ethnomedicinal plants used by tribals of Yavatmal district have been listed along with plant parts used.

**Keywords:** Yavatmal, Ethnomedicine, Traditional Knowledge.



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**Past, Present and Future of Unconventional Gas in the United States**

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**ABSTRACT**

Production of natural gas from unconventional sources, primarily coalbed methane (CBM) and shale gas, has a short history. Production of CBM in the United States was almost zero in 1980, which grew to almost two trillion cu ft (TCF) in 2010, accounting for ~8% of natural gas consumption. Similarly, shale gas production started in 2000 in the US and exceeded eight TCF in 2013. Hence, relatively speaking, CBM is a mature industry, with growing interest in Australia, Canada, Indonesia, India and China. Its future, however, is somewhat dependent on the growth of shale gas, given that shale gas has not been very successful in other parts of the world. The potential is definitely significant.

For CBM production, the most prolific basins in the US at this time are the San Juan and Powder River, with Appalachian emerging at a fairly fast pace. The primary reason for the success of CBM production in the San Juan basin has been the pressure-dependent-permeability characteristic of coal, with permeability increases of between ten and hundred times, resulting in phenomenal production over long

	<p>periods of time. In the Powder River Basin, it is the shallow depth and very high initial permeability that have accelerated basin-wide production. Shale gas production has primarily been from the Barnett, Marcellus and Haynesville formations. Nine other formations are coming up although the production from these has not been significant to date. Also, a critical factor influencing future production is the price of gas in the future.</p> <p>This presentation will include the history, current status, and future of production of these two sources of unconventional gas, along with the associated uncertainties.</p> <p>Keywords: coalbed methane, shale gas</p>
<p>Janjira Muenrew GICECG1610053</p>	<p>Effect of NO<sub>3</sub><sup>-</sup>/NH<sub>4</sub><sup>+</sup> ratios on growth, morphology, N uptake and mineral contents of <i>Pennisetum purpureum</i> × <i>P. americanum</i> cv. Pakchong1</p> <p>Janjira Muenrew and Arunothai Jampeetong Department of biology, Faculty of science, Chiang Mai University, Meuang, Chiang Mai, Thailand <a href="mailto:arunothai.2519@gmail.com">arunothai.2519@gmail.com</a></p> <p><b>ABSTRACT</b></p> <p>Wastewater problem has become a serious issue in many countries. It is caused mainly by community, industry and agriculture where inorganic nitrogen, mainly NH<sub>4</sub><sup>+</sup> and NO<sub>3</sub><sup>-</sup>, contaminates in water bodies leading to eutrophication and harm for human health. Biological treatments by using plants is one of low cost, easy, and effective methods for treating wastewater. Hybrid Napier grass (<i>Pennisetum purpureum</i> × <i>P. americanum</i> cv. Pakchong1) can be a good candidate for wastewater treatment because it has fast growth, and numerous fibrous root for nutrient uptake. However, different ratios of NO<sub>3</sub><sup>-</sup>/NH<sub>4</sub><sup>+</sup> in wastewater may affect to the plant and treatment efficiency. Hence, the effects of NO<sub>3</sub><sup>-</sup>/NH<sub>4</sub><sup>+</sup> ratio on growth, morphology, N uptake, and mineral contents of the hybrid Napier grass cultivar Pakchong1 were investigated. The 30 days old hybrid Napier grass with similar plant sized (N=7) were grown on nutrient solution at the same concentration of nitrogen (500 μM) with different NO<sub>3</sub><sup>-</sup>/NH<sub>4</sub><sup>+</sup> ratios (100:0, 75:25, 50:50, 25:75 and 0:100). All plants were cultivated in greenhouse for 70 days. From the study, plant growth rates were not significantly affected by the NO<sub>3</sub><sup>-</sup>/NH<sub>4</sub><sup>+</sup> ratio, but shoot elongation rates, root number, average leaf area, and leaf numbers were the highest in the treatment of 25:75 NO<sub>3</sub><sup>-</sup>/NH<sub>4</sub><sup>+</sup>. Both NH<sub>4</sub><sup>+</sup> and NO<sub>3</sub><sup>-</sup> uptake rate were slightly affected by the NO<sub>3</sub><sup>-</sup>/NH<sub>4</sub><sup>+</sup> ratios and found to be the highest in the plant treated with only NH<sub>4</sub><sup>+</sup> (0:100 NO<sub>3</sub><sup>-</sup>/NH<sub>4</sub><sup>+</sup>). Furthermore, the NH<sub>4</sub><sup>+</sup> uptake rates were higher than the NO<sub>3</sub><sup>-</sup> uptake rates in all treatments. The mineral contents especially P, K, Ca and Mg concentrations in plant tissue were significantly reduced whilst the ratios of NH<sub>4</sub><sup>+</sup> increased. We concluded that the best ratio for growth and morphology of the hybrid Napier grass was 25:75 NO<sub>3</sub><sup>-</sup>/NH<sub>4</sub><sup>+</sup>. However, the plant can grow well with high N uptake rate in all ratios. Thus, it can be a potential candidate for wastewater treatment.</p> <p>Keywords: Napier grass, Wastewater treatment, NH<sub>4</sub><sup>+</sup> and NO<sub>3</sub><sup>-</sup> uptake</p>
<p>Dr. M. Shakaib GICECG1610055</p>	<p>Modeling Of Unsteady Velocity And Temperature Profiles In Membrane Distillation Process Using Cfd</p>

	<p><b>M. Shakaib</b> Mechanical Engineering Department, NED University of Engineering &amp; Technology, Karachi, Pakistan <a href="mailto:mshakaib@eduet.edu.pk">mshakaib@eduet.edu.pk</a></p> <p><b>ABSTRACT</b> Membrane distillation (MD) process utilizes spacer to disrupt thermal boundary layer and thus to improve the thermal efficiency of the process. The inappropriate spacer dimensions can however result in temperature polarization or less heat transfer rates thereby leading to inefficient MD modules. In this paper flow behaviour is computed in spacer filled membrane distillation channel with spacer mesh length of 3mm. The regions of higher and lower temperature polarizations are identified. Keywords: Membrane process, Spacer, Heat Transfer</p>
 <p><b>Tulakorn Manakhajornvej</b> GICECG1610056</p>	<p><b>Application of high electric field pulses for plant cell disintegration</b></p> <p><b>Tulakorn Manakhajornvej,</b> Department of Chemical Engineering, Mahidol University, Salaya 73170 Thailand <a href="mailto:tulakorn.man@student.mahidol.ac.th">tulakorn.man@student.mahidol.ac.th</a></p> <p><b>Mohammad Naghi Eshtiaghi,</b> Department of Chemical Engineering, Mahidol University, Salaya 73170 Thailand <a href="mailto:mohammad.esh@mahidol.ac.th">mohammad.esh@mahidol.ac.th</a></p> <p><b>Nuttawan Yoswathana</b> Department of Chemical Engineering, Mahidol University, Salaya 73170 Thailand <a href="mailto:nuttawan.yos@mahidol.ac.th">nuttawan.yos@mahidol.ac.th</a></p> <p><b>ABSTRACT</b> High Electric Field Pulses (HELP) is a non-thermal cell disintegration method for extraction of intracellular compounds. The aim of this study is to investigate the effect of HELP process parameters on cell disintegration of plant cell materials. And also evaluated the prediction model for sugar cane HELP treatment using Response Surface Methodology (RSM). At 9 kV/cm and 60 pulses up to 70% cell disintegration of sugar cane was observed. Similarly, cell disintegration of coconut meat using HELP at 4 kV/cm, 60 pulses was achieved. Comparison between heat and HELP cell disintegration clearly indicated that it is possible to disintegrated plant cell with similar or higher disintegration degree at very shorter time (about 1 min) compare to thermal method (15 min). In addition the energy consumption for HELP treated sample was distinct lower (3 kJ/kg) compare to thermal treatment (200 kJ/kg). Keywords: High Electric Field Pulses (HELP), cell disintegration, energy consumption, non-thermal process</p>



Ramit Singla  
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**Enzymatic biotransformation of stevioside derived from Stevia rebaudiana to rebaudioside A and molecular mechanism behind taste reception**

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**ABSTRACT**

Diabetes is a global rising issue. The management of diabetes lies in the niche of maintenance of blood glucose levels by a balanced diet. Fortunately, having diabetes does not mean to give up all of the favorite foods, here the Stevia rebaudiana fits in. Steviol glycosides (SG's) from Stevia rebaudiana (Bertoni) have been used as a natural low-calorie general purpose sweetener for use in foods, beverages, and pharmaceutical industry. It is not only 30 times sweeter than sugar but also regulates blood glucose levels and improves insulin sensitivity. Stevia rebaudiana has been also used in the management of weight in obese which is a most common problem in the diabetic population. But the unpleasant bitterness restricts its use for human consumption and limits its application in food and pharmaceutical industry. In our present research, we have enzymatically bio-transformed rebaudioside A from stevioside, using  $\beta$ -1,3-glucanase from *Irpex lacteus* thereby meeting the rising commercial demands of low-calorific sweetener. The rebaudioside A obtained was of high quality with percent conversion of 62.5%. In addition to the development of the semi-synthetic intervention, we have also performed computational analysis in order to investigate the interaction of two major constituents of SG's against homology model of the hTAS2R4 receptor (human bitter taste receptor). The molecular simulation study was performed using stevioside and rebaudioside A revealed that, sugar moiety at the C-3 position in rebaudioside A causes restriction of its entry into the receptor site thereby unable to trigger the bitter reception signaling cascade. The mechanistic insight of bitter taste reception and developed protocol for the synthesis of high-quality rebaudioside A from bitter stevioside have addressed the problem of bitterness which restricts its commercial usage in food and pharmaceutical industry.



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**Religious Faith and Indigenous Knowledge for Sustainable Development in India and Africa: A Perspective for Clean and Green Environment**

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**ABSTRACT**

As creatures living on this planet, we are totally dependent on what the Earth bestows upon us for food, water, minerals and energy resources. The environmental issues appear to be important challenges in the twenty first century. In previous years, world politics and every person in general was busy with politics and war. But with the development there are many environmental challenges emerges. On the

	<p>other hand, people living in marginal lands have long been exposed to numerous types of environmental changes and have developed strategies for coping with these phenomena. Religion blended with 'वसुधैव कुटुम्बकम्' (the world is one family) can be a powerful tool for this planet. The idea of environmental management and conservation are not fresh for India and Africa. Through the lectures of Buddha, Ashoka, Gandhi, the concept of sacrifice for other in India as well as in African tribal community became the integral part of the oriental philosophy. Veda, Bhagwad Gita, Upanishads, Kuran are also believe in supremacy of the nature. So, my paper describes the religious faith and traditional knowledge as a tool for sustainable development as well as clean and green environment. Key Words: Religion, Traditional Knowledge, sustainable development, Environment etc.</p>
 <p>Hend Mohamed El-Sayed Mandour GICICRST1601051</p>	<p>Genetic analysis an in vitro selection for drought tolerance in wheat (<i>Triticum aestivum</i> L.)</p> <p>Hend Mandour National Research Centre, Dokki, Giza, Egypt</p> <p><b>ABSTRACT</b></p> <p>Selection for drought tolerance of fifteen wheat genotypes (five parents and their ten F1 hybrids) was performed under laboratory. Three different callus induction media were used to determine the optimum hormone balance for callus induction from mature embryos of wheat genotypes and also to study the genetic response of the studied wheat genotypes to callus induction. MS media supplemented with different concentrations of poly ethylene glycol (PEG) were used to evaluate the obtained calli for drought tolerance. Then the drought stressed calli were then transferred to plant regeneration medium for studying their ability to regenerate.</p> <p>M2 medium (2mg/l 2,4D+300 mg/l casein hydrolysate) gave the highest callus induction frequency (85.5%) followed by M1 (2mg/l 2,4D) medium (85%) and M3 (2mg/l 2,4D +4 mg/l AgNo3) medium (81.6%). The differences between the three callus induction media were significant for all characters except callus induction frequency (CIF %) and M2 medium was the best media for callus induction.</p> <p>Regeneration was obtained in all genotypes under 0, 5 and 10% PEG, and in most genotypes under 15% PEG, but was completely absent under 20% PEG.</p> <p>Data obtained revealed that the parental cultivars, Giza168 and Sids13 and their hybrid (Giza168 xSids13) were the most drought tolerant genotypes, while the parent Misr1 was the most sensitive to drought.</p> <p>A set of ISSR markers for drought tolerance and (BSA) approach were used in molecular studies. Five tolerant molecular markers appeared in positive molecular markers for drought tolerance.</p>
<p>R.G. Pradhan GICICRST1601052</p>	<p>On new species <i>Circumoncobothrium anushrii</i> n.sp. of Genus <i>Cotyloida</i> (Wardle, McLeod and Radinovsky, 1974.) from fresh water fish <i>Mastacembellus armatus</i>.at Wakdi dam: Dist. Parbhani (M.S.) India.</p> <p>R.G. Pradhan. Dept. of Zoology, Lalbahadur Shastri College, Partur Dist. Jalna. (M.S.) India. <a href="mailto:ravigpradhan@yahoo.co.in">ravigpradhan@yahoo.co.in</a></p>

	<p style="text-align: center;"><b>ABSTRACT</b></p> <p>The present paper deals with the new species of <i>Circumonchobothrium anushrii</i> n.sp. It is different from the all known species of the Genus <i>Cotyloa</i> (Wardle, McLeod and Radinovsky, 1974). The new species is characterized by having scolex large, triangular with two bothridia, rostellar hooks are unequal, Neck is absent, Mature segments are squarish, testes are medium, oval to round, pre-ovarian, Cirrus pouch is oval, pre-ovarian, vas deferens short, ootype is almost rounded, ovary distinctly bilobed, vitellaria are follicular, oval, marginal on either side of the segment. Key word: Cestode, <i>Mastacembellus armatus</i>, <i>Circumonchobothrium</i>.</p>
<p><b>Dr Rajendra R. Dandawate</b> GICICRST1610054</p>	<p>A new species <i>Stilesia maharashtrii</i> (cestode parasite) from, <i>Ovis bharal</i> (sheep) from Shrirampur, district Ahmednagar, M.S. India</p> <p style="text-align: center;"><b>R.R. DANDAWATE</b> Dept. of Zoology, Arts, Commerce and Science College, Sonai, Tal- Newasa, Dist- Ahmednagar, M.S. India <a href="mailto:d_rajendra2006@rediffmail.com">d_rajendra2006@rediffmail.com</a></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The present study deals survey of cestode parasites from <i>Ovis bharal</i> from Shrirampur in district Ahmednagar, M.S. India during January 2015 to December 2015. The present communication deals with the new species <i>Stilesia</i> is worm having scolex median, globular, suckers overlaps with each other. Mature segment fourteen times broader than long. Testes rounded 5-6 in numbers, vas-deferens short, median, cirrus pouch oval, cirrus thin. Paruterine organ oval, posteriorly placed genital pores medium, oval, marginal and regularly alternate. Key Words: <i>Stilesia</i>, <i>Ovis</i>, Scolex, Sucker.</p>
<p><b>Rattachon Angmanee</b> GICICRST1610057</p>	<p>Effect of different plant growth regulators on callus induction of <i>erinocarpus nimmonii</i> Graham. Critically endangered species in western ghats</p> <p style="text-align: center;">Survase S. A.</p> <p>Department of Botany, Lalbahadur Shastri Senior College, Partur Dist. Jalna – 431501 (M.S.) India. <a href="mailto:sasurvase@gmail.com">sasurvase@gmail.com</a></p> <p style="text-align: center;">Kulkarni A. U.</p> <p>Department of Botany, Lalbahadur Shastri Senior College, Partur Dist. Jalna – 431501 (M.S.) India. Email.: <a href="mailto:sasurvase@gmail.com">sasurvase@gmail.com</a></p> <p style="text-align: center;">D. S. Pokle</p> <p>Department of Botany, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad – 431004 (M.S.) India. Email.: <a href="mailto:kulkarniau@rediffmail.com">kulkarniau@rediffmail.com</a></p>

**ABSTRACT**

The present study describes a reliable method for callus induction of *Erinocarpus nimmonii* plant. Calli were in vitro initiated from root, stem, petiole and leaves segments using MS basal media. The effect of combinations of BAP (6-benzyl adenine pure) and NAA (-naphthalene acetic acid) on callus induction was investigated. It was found that growth regulators and their concentrations have obvious effects on the callus induction, the increment of callus index and callus physical appearance. Moreover, callus was formed at different times among four kinds of explants that is, root, stem, petiole and leaves, segment. The best callus induction capabilities were obtained with low levels of NAA in combinations with BAP. However, supplemented medium with high concentrations of NAA led to relatively low callus frequency and the callus obtained turned to brown color. Generally, the highest frequencies of callus formation from root, stem, petiole and leaves, explants were observed in the medium containing 1.5 mg/l of NAA and 2.0 mg/l of BAP. However, petiole leaves is the most potential explant for callus induction.

**Key words:** *Erinocarpus nimmonii*, tissue culture, plant growth regulators, callus.



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**Effect of Corn-waste Biochar on Available Water Capacity in Sandy Soil at Tambon Phaniat, Amphoe Khok Samrong, Changwat Lopburi.**

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**ABSTRACT**

The purpose of this research aimed to study the effect of biochar on available water capacity in Sandy Soil. Biochar was prepared from field corn residue in the combination of gasification and pyrolysis techniques. The RCBD was used in experimental design with four biochar application rates 0 t h<sup>-1</sup>, 1 t h<sup>-1</sup>, 2 t h<sup>-1</sup>, 4 t h<sup>-1</sup> and 8 t h<sup>-1</sup>. Soil before mixed with biochar or original soil and 90 day after mixed with biochar were sampling for analyzed an available water capacity. Physical and chemical properties of soil were also measured. The results indicated that the soil amended with biochar at rate 8 t h<sup>-1</sup> demonstrated the highest of water and nutrient holding capacity as well as physical and chemical properties of soil expressed the statistical significance difference. Therefore, it can be remarked here that the biochar amended soil can enhance the higher water holding capacity in soil.

**Keywords:** Biochar, Soil Amendment, Available Water Capacity

<p><b>Paritosh Bhattacharya GICICRST1610059</b></p>	<p><b>Differential-Transform-Method For Solving Lotka -Volterra Equations By Using Holling Type Iii Functional Response</b></p> <p><b>Paritosh Bhattacharya</b> Associate Professor Mathematics Department NIT Agartala, Tripura, India</p> <p><b>Anirudhya Roy</b> Research Scholar Mathematics Department NIT Agartala, Tripura, India</p> <p><b>Susmita Paul</b> Research scholar Mathematics Department NIT Agartala, Tripura, India</p> <p><b>ABSTRACT</b> In this paper, the Differential-Transform-Method (DTM) is applied for solving one-species Lotka-Volterra model and its modified form by introducing Holling type III functional response. Comparison with the Laplace Adomian Decomposition Method (LADM) to shows that the Differential-Transform-Method (DTM) is a most powerful numerical technique for nonlinear differential equations. We try to find the difference between the exact solution and numerical solutions. <b>Keywords:</b> Laplace Adomian Decomposition Method, Differential-Transform-Method, Lotka-Volterra model, Holling Type III Functional Response.</p>
<p><b>Minal Saxena GICICRST1610060</b></p>	<p><b>Channel Estimation Techniques for 5G Technology</b></p> <p><b>Minal Saxena</b> VLSI Design, Maulana Azad National Institute of Technology, Bhopal, India</p> <p><b>ABSTRACT</b> A new mobile generation has appeared approximately every 10 years since the first 1G system, Nordic Mobile Telephone, was introduced in 1981. The first 2G system was commercially deployed in 1992, and the first 3G system appeared in 2001. 4G systems fully compliant with IMT Advanced were first standardized in 2012. The development of the 2G (GSM) and 3G(IMT-2000 and UMTS) standards took about 10 years from the official start of the R&amp;D projects, and development of 4Gsystems began in 2001 or 2002.[3][4] Predecessor technologies have been present on the market a few years before the new mobile generation, for example the pre-3G system CdmaOne/IS95 in the US in 1995, and the pre-4G systems Mobile WiMAX in South-Korea 2006, and first release-LTE in Scandinavia 2009. In April 2008, NASA partnered with Machine-to-Machine Intelligence (M2Mi) Corp to develop 5G communications technology. 5G Technology and its features New mobile generations are typically assigned new frequency bands and wider spectral bandwidth per frequency channel (1G up to 30 kHz, 2G up to 200 kHz, 3G</p>

up to 20 MHz, and 4G up to 100 MHz). There is still room for larger channel bandwidths and new frequency bands suitable for land-mobile radio. From users' point of view, previous mobile generations have implied substantial increase in peak bitrate (i.e. physical layer net bitrates for short-distance communication), up to 1 Gbit/s to be offered by 4G. 4G offers download speeds that are roughly equivalent to your superfast broadband (around 30-40Mbps) at homes but 5G will go well beyond that. One of the chief complaints with 4G is that it offers a new level of speed, but sticks its users with the same old data restrictions. It's estimated 5G technology will offer upwards of 1,000 times the capacity of 4G. This means that there'll be more space for everyone to access this advanced network, which should negate the need for mobile operators to throttle or limit your access to their networks.

That being said, various entities working on potential 5G network standards, including Samsung and researchers at New York University, has come up with the idea of utilizing millimeter-wave frequencies. This frequency range lies between 3 to 300MHz, which is much higher than current network standards. The main advantage of using this frequency range is that it's scarcely used by other broadcast technologies.

- 5G technology offer high resolution for crazy cell phone user and bi-directional large bandwidth shaping.
- 5G technology also providing subscriber supervision tools for fast action.
- 5G technology is providing large broadcasting of data in Gigabit which supporting almost 65,000 connections.
- 5G technology offer transporter class gateway with unparalleled consistency.
- The traffic statistics by 5G technology makes it more accurate.
- Through remote management offered by 5G technology a user can get better and fast solution.
- The 5G technology is providing up to 25 Mbps connectivity speed.
- The uploading and downloading speed of 5G technology touching the peak.

#### Orthogonal Frequency Division Multiplexing

Orthogonal Frequency Division Multiplexing (OFDM) is a multicarrier transmission technique, many carriers, each one being modulated by a low rate data stream share the transmission bandwidth. Orthogonality is a property that allows multiple information signals to be transmitted perfectly over a common channel and detected without interference. However, OFDM uses the spectrum much more efficiently by spacing the channels much closer therefore thi scheme is recommended for 5G and HSOPA Communication. The OFDM is a digital modulation scheme that can support high-speed video communication along with audio with elimination of Intersymbol Interference (ISI) and Interchannel Interference (ICI) [2002, M. Luise, M. Marselli, and R. Reggiannini, IEEE]. At the same time, it can accommodate more number of users showing the spectral efficiency. Because of high capacity transmission of OFDM ,It has been applied to Digital transmission system, such as Digital audio broadcasting(DAB) system ,Digital video broadcasting TV(DVB-T)system, Asymmetric digital subscriber line(ADSL),Ultra wideband(UWB) system, IEEE 802.11a/g Wireless local area network(WLAN),IEEE 802.16 Worldwide interoperability for microwave access (WiMax)systems and HIPERLAN2(High performance local area network).Its application in mobile communication is more complex especially because of the mobility of the mobile user, thus more exact symbol and frequency offset control must be used to ensure that the subcarrier remain orthogonal. During the transmission the signal suffers due to the fading environment and hence results in two major problems. One problem is the unknown

	<p>time instant to start sampling a new OFDM symbol, known as Timing Offset. A second problem is the mismatch of the oscillator frequencies between the transmitter and receiver resulting in frequency offset. The demodulation of a signal with an offset in the carrier frequency can cause large bit errors and may degrade the performance of a symbol synchronizer [2005, OFDM Transceiver Reference Design”, Lattice Semiconductor OFDM Transceiver design package]. Also, Sensitivity to a timing offset is higher in multi-carrier systems than in single-carrier systems .It is therefore important to estimate this offset and minimize its impact. Frequency offset is estimated at the instant the start of the frame is detected, therefore its value is directly related to timing offset.</p>
<p>Radhika Chelamalla GICICRST1610061</p>	<p>Molecular docking studies and ADMET predictions of pyrimidine coumarin scaffolds as potential IDO inhibitors</p> <p>Radhika Chelamalla Ajitha Makula Centre for Pharmaceutical Sciences, Jawaharlal Nehru Technological University, Kukatpally, Hyderabad-500085, TS, India <a href="mailto:cradhika8@gmail.com">cradhika8@gmail.com</a></p> <p>ABSTRACT</p> <p>Indoleamine 2,3-dioxygenase (IDO) is emerging as an important new therapeutic drug target for the treatment of cancer. IDO catalyzes the rate-limiting step of tryptophan degradation through kynurenine pathway. Reduction in local tryptophan concentration and the production of immunomodulatory tryptophan metabolites contribute to the immunosuppressive effects of IDO. Presence of IDO on dendritic cells in tumor-draining lymph nodes leading to the activation of T cells results in formation of immunosuppressive microenvironment for the survival of tumor cells, shows the importance of IDO as a novel anticancer immunotherapy drug target. Pyrimidine has the unique ability to act through many different mechanisms and its multiple biological activities make it an ideal therapeutic agent in treating cancer. In this effort directed towards the discovery of novel, potent IDO inhibitors for the treatment of cancer. In the present study a library of pyrimidine derivatives has been designed and evaluated for their anti-cancer activity targeting IDO using various computational approaches. Twenty new pyrimidine series of compounds were designed and docking studies were performed. All of them have found to be successfully docked inside the active binding domain of IDO with a binding energy in a range of -4.59 to -9.53 Kcal/mol with predicted IC50 value range of 4.72 micro molar to 456.19 nano molar. On the other hand, calculated 2DQSAR molecular descriptor properties of the compounds showed promising ADME parameters and found to be in compliance with Lipinski's rule of five. Among all the twenty compounds tested, compound 14 (N'-(6-chloro-2-oxo-chromene-3-carbonyl)-4-(4-methoxyphenyl)-6-methyl-2-thioxo-3,4-dihydro-1H-pyrimidine-5-carbohydrazide) was found to be the best lead like molecule with a binding energy of -9.53 kcal/mol. Conclusively, newly designed compound 14 of the present study have shown promising anti-cancer potential worth considering for further evaluations.</p> <p>Keywords: IDO domain, pyrimidine, coumarin, docking, ADME, QSAR, anti-cancer.</p>

 <p>R.G. Pawar GICICRST1610062</p>	<p>A new species <i>Stilesia indiana</i> from goat, <i>Capra hircus</i> from Shirasgaon, Taluka Shrirampur, district Ahmednagar, M.S.,</p> <p>R.G. PAWAR, Dept. Of zoology, s.s.g.m.college, kopargaon dist ahmednagar ms india <a href="mailto:rgpawar.2009@rediffmail.com">rgpawar.2009@rediffmail.com</a></p> <p><b>ABSTRACT</b></p> <p>The present study deals survey of cestode parasites from goat species like <i>Capra hircus</i> from Shirasgaon, Taluka Shrirampur in district Ahmednagar during January 2012 to December 2012. The present communication deals with the new species <i>Stilesia indiana</i> from the genus <i>Stilesia</i> is worm having scolex, medium, globular, suckers 4 in numbers, arranged in a line. Slightly overlapping neck long. Mature segments broader than long, with slight projections at the posterior side. Testes are 4-5 in numbers, in two lateral fields, ovary small, compact, 'U' shaped cirrus pouch small, cirrus thin, genital pore is small.</p> <p><b>Key Words:</b> <i>Stilesia</i>, <i>Capra hircus</i>, Scolex, Sucker.</p>
 <p>Dr. Vikas Gupta GICICRST1610063</p>	<p>Removal Of Cu(II) And Pb(II) From Their Aqueous Solutions By Using Eggshell Powder As An Adsorbent</p> <p>Vikas Gupta Department of Chemistry IFTM University, Moradabad Lodhipur Rajpoot, Delhi Road MORADABAD 244 001(UP), India <a href="mailto:dvg_1974@yahoo.co.in">dvg_1974@yahoo.co.in</a></p> <p><b>ABSTRACT</b></p> <p>The removal of heavy metals from waste water has recently become the subject of considerable interest owing to strict legislations introduced to control water pollution. In the present study the adsorption efficiency of eggshell powder is determined for the removal of copper and lead from their aqueous solutions. The studies also shows the effect of adsorbent dose, contact time, and pH on the removal efficiency of eggshell powder. Atomic adsorption studies were done to examine the extent of adsorption of Cu(II) and Pb(II). The maximum % removal of Cu(II) was obtained about 90% at the dosage of 5gm and that for Pb(II) was about 88% at the same dose. The results also showed that Pb(II) and Cu(II) removal was maximum at a pH around 5 and decreases beyond pH 5. In order to study the controlling mechanism of adsorption process such as mass transfer and chemical reaction, the first order and second order equation were used to test the experimental data. These studies indicate that eggshell powder is an effective adsorbent for the collection of Cu(II) and Pb(II) from their aqueous solution as well as from waste water.</p> <p><b>Keywords:</b> Adsorption, Heavy metals, Eggshell and industrial pollution</p>
<p>A.Panneerselvam GICICRST1610064</p>	<p>Brush Plated CuInS<sub>2</sub> Films and Their Photo electrochemical Behaviour</p> <p>A.Panneerselvam, Department of Physics, Paavai Engineering College, Pachal, Namakkal 637018, Tamil Nadu, India.</p> <p>B. Kajamaideen,</p>

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#### ABSTRACT

Copper indium disulphide (CuInS<sub>2</sub>), a I-III-VI<sub>2</sub> compound semiconductor, is a promising absorber material for thin film photovoltaics. It meets two important requisites of high solar energy conversion efficiency—it has a direct band gap of about 1.5 eV which perfectly matches the solar spectrum and has a fairly high absorption coefficient as well. The theoretical limit of the conversion efficiency of CuInS<sub>2</sub> based photovoltaic devices is as high as 30% while hitherto cells having 10–12% efficiencies have been made. The interest in the compound also stems from the facts that in comparison to CuInSe<sub>2</sub>, a widely used absorber material, it is economical and non-toxic. Several methods that include wet-chemical and vacuum based approaches, have been developed to prepare CuInS<sub>2</sub> films.

Brush plating was carried out using Selectron Power Pack MODEL 150A-40 V. Layers were brush plated on tin oxide coated conducting substrates of about 5.0 cm<sup>2</sup> which is the negative electrode. The bath contained 5.0mM of InCl<sub>3</sub>, 2.0mM of CuCl<sub>2</sub> and 1.0 mM of sodium thiosulphate at a pH of 1.5 was maintained. In each case, the power unit was preset at a current density of 5.0 mA cm<sup>-2</sup>. The electrolyte temperature was varied from 30°C - 80°C. The total deposition time was 20 min. Thickness of the CuInS<sub>2</sub> films measured by Mitutoyo surface profilometer.

XRD patterns of CuInS<sub>2</sub> films deposited at different electrolyte temperatures exhibited polycrystallinity with peaks corresponding to the chalcopyrite phase of CuInS<sub>2</sub> (JCPDS 75-0106). The crystallite size of the films calculated using Scherrer's formula increased from 300 nm -1000 nm with increase of electrolyte temperature. For the films deposited at electrolyte temperature of 80°C, Cu/In ratio was ~1.0. SEM micrographs for all the CuInS<sub>2</sub> films deposited at different electrolyte temperature exhibited smooth and homogeneous surfaces with grain size around 300 nm for electrolyte temperature of 30°C. The grain size further increased to 1000 nm for an electrolyte temperature of 80°C. The optical band gap  $E_g$  is in the range of 1.30 to 1.42 eV, which is in good agreement with the value of 1.30 and 1.43 eV reported by other workers. Mobility is 5.76 cm<sup>2</sup>V<sup>-1</sup>s<sup>-1</sup> for Cu/In ratio of unity is higher than 4.92 cm<sup>2</sup>V<sup>-1</sup>s<sup>-1</sup> and carrier density value of 12.31 x 10<sup>17</sup> cm<sup>-3</sup> for Cu/In ratio of unity in this study is higher than 1.2 x 10<sup>16</sup> cm<sup>-3</sup> for Cu/In ratio of unity reported earlier.

To increase the photo output, the films deposited at 80°C were post heated in argon atmosphere at different temperatures in the range of 450 - 550°C for 15 min. For a film deposited at 80°C, an open circuit voltage of 0.55 V and a short circuit current density of 12.0 mA cm<sup>-2</sup> at 60 mW cm<sup>-2</sup> illumination. The photo output is higher than earlier report. The power output characteristics after 80s photoetching indicates a  $V_{oc}$  of 0.625V,  $J_{sc}$  of 16.0 mA cm<sup>-2</sup>, ff of 0.71 and  $\eta$  of 11.83 %, for 60 mW cm<sup>-2</sup> illumination. The results indicate that these films can be used in photovoltaic devices.

Keywords: Copper indium disulphide; Brush plating; Thin films



Radhika chelamalla  
GICICRST1610065

**Design, Synthesis and In silico studies of new 5-substituted-2-(2-(5-aryl-1H-1,2,4-triazole-3-ylthio)acetyl) hydrazine carbothioamide/ carboxamides for anticonvulsant activity**

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#### ABSTRACT

**Purpose:** To synthesize series of 5-substituted-2-(2-(5-aryl-1H-1,2,4-triazole-3-ylthio)acetyl) hydrazine carbothioamide/ carboxamides and evaluate their anticonvulsant activity and in silico properties.

**Methods:** Derivatives of 5-substituted-2-(2-(5-phenyl-1H-1,2,4-triazol-3-ylthio)acetyl)hydrazine carboxamides/carbothioamides were obtained by condensation of Ethyl-2-(5-aryl-1H-1,2,4-triazol-3-ylthio)acetates with thiosemicarbazide or semicarbazide. The synthesized compounds were characterized by Fourier transform infrared spectroscopy (FTIR), nuclear magnetic resonance spectroscopy (1H NMR) and mass spectrometry (MS) while their anticonvulsant activity was screened against pentylenetetrazole-induced seizure (PTZ) against phenytoin and diazepam as reference standards. Molecular docking (in silico) studies were performed using 4-aminobutyrateaminotransferase in order to predict possible protein-ligand interactions.

**Results:** Among the target compound 3f exhibited lower activity with 50% protection. The compounds 3e and 3h showed good to moderate levels of anticonvulsant activity with 83.3% protection at 100 mg/kg. The compounds 3g and 3i afforded most significant anticonvulsant activity with 100% protection at a dose of 30 mg/kg. In silico results also revealed maximum binding affinity to GABA-AT protein which was higher than other compounds.

**Conclusion:** The synthesized compounds showed potent anticonvulsant activity. Molecular docking results should give an insight into how further modification of lead compound can be carried out for higher inhibitory activity.

**Keywords:** Anticonvulsant, 1,2,4-triazole, carbothioamides, pentylenetetrazole, In silico studies, Molecular docking.

 <p><b>Dr. Popat B Mohite</b> GICICRST1610066</p>	<p><b>Design and Characterization of Hydrogel based Nanocrystals of Rosuvastatin for Solubility and Dissolution Enhancement</b></p> <p><b>Dr. Popat B Mohite,</b> Department of Pharmaceutical Chemistry, Mula Education Society's College Of Pharmacy Sonai Tal –Newasa Dist- Ahmednagar, Maharashtra-414105, India</p> <p><b>Dr. Ramdas B Pandhare</b> Department of Pharmaceutical Chemistry, Mula Education Society's College Of Pharmacy Sonai Tal –Newasa Dist- Ahmednagar, Maharashtra-414105, India</p> <p><b>ABSTRACT</b></p> <p><b>Objective:</b> In this study, an attempt was made to improve the solubility and dissolution characteristics of poorly soluble drug Rosuvastatin.</p> <p><b>Methods:</b> The nanosuspensions of Rosuvastatin were prepared using precipitation–Ultra sonication method followed by its lyophilization using mannitol as a cryoprotectant. Nanoparticles characterized in terms of size and morphological characteristics. Characterization of the prepared nanosuspension was done with respect to particle size, zeta potential, saturation solubility, dissolution rate, morphology study [SEM], in vitro dissolution study.</p> <p><b>Results:</b> The results indicated that the initial crystalline state of the drug reduced the following: particle size reduction and the dissolution rates of Rosuvastatin nanoparticles were highly increased with comparison to pure drug by the enhancement of intrinsic dissolution rate and reduction of particle size resulting in a increased specific surface area.</p> <p><b>Conclusion:</b> Nanoparticles are seemed to promising approach for bioavailability enhancement because of the simple method of its preparation and its universal applicability.</p> <p><b>Keywords:</b> Nanosuspension, Rosuvastatin, Bioavailability enhancement.</p>
<p><b>Vincent</b> <b>Gilbolingo Cataraja</b> GICICRST1610067</p>	<p><b>Tracer Study of Misamis University Graduate School Alumni</b></p> <p><b>Vincent G. Cataraja</b> Student, Master of Arts in Education Graduate School, Misamis University</p> <p><b>Lloyd Ian N. Balagtas</b> Student, Master of Arts in Education Graduate School, Misamis University</p> <p><b>Lady Shammah G. Engracia</b> Student, Master of Arts in Education Graduate School, Misamis University</p> <p><b>Nelpa N. Capio</b> Professor, Misamis University Graduate School</p>

	<p style="text-align: center;"><b>Joey A. Cabrera</b> Professor, Misamis University Graduate School</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Tracer studies are an indispensable evaluation tool for manpower training and curriculum development programs. This study aims to determine the employment status of alumni of Misamis University Graduate School; the extent of their use of various skills in their current job; their level of satisfaction to University services, learning environment and facilities; their assessment of the adequacy of trainings in MU; and the relevance of their respective curriculum to their current job. A modified graduate tracer study instrument was adopted from Commission on Higher Education and was utilized to gather the quantitative data. A total of 76 respondents selected through snowball sampling participated in the study with full consent. Descriptive design and survey method were used in the study. Results showed that majority of the alumni of the graduate school are female, all of the respondents are gainfully employed and majority of them are holding regular or permanent job position.</p> <p><b>Keywords:</b> tracer study, employability, employment profile</p>
 <p><b>Yen-Ting Lin</b> GICICRST1610068</p>	<p style="text-align: center;"><b>A Flipped Classroom Software Engineering Course for Supporting STEM Education</b></p> <p style="text-align: center;"><b>Yen-Ting Lin</b> National Pingtung University, Department of Computer Science, Taiwan (R.O.C.) ricky014@gmail.com</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>In recent years, many institutions indicated that software development is important to nations, societies, and individuals. However, to conduct a well software development, students not only need to own programming skills but also have to apply relevant domain knowledge and the concepts of software project development. In practice, software development is a multidisciplinary course which is consisted of Science, Technology, Engineering, and Mathematics (STEM). Unfortunately, since the traditional teaching strategy, most students can only recite and understand the relevant knowledge with regard to software development after they learned. In other words, the students cannot analyze, synthesize, evaluate, and apply relevant domain knowledge to address particular problems in practice. This phenomenon would lead theory-practice gaps. As mentioned above, this study applied a learner-centered teaching strategy, named Flipped Classroom, in a software engineering course. Moreover, a flipped classroom learning and diagnosis system would also developed to facilitate students' discussions and thinking in classroom. Through the prior study of the proposed approach, the experimental results indicated that students learned with the proposed approach have better learning performances than those learned with the traditional approach.</p> <p><b>Keywords:</b> flipped classroom, software engineering, STEM</p>

 <p><b>Yousef Emamipoor</b> GICICRST1610069</p>	<p><b>Role of biotechnology in protection of endangered medicinal plant, Bunium persicum; the most important herb of Iran</b></p> <p><b>Yousef Emamipoor,</b> Agricultural Research, Education &amp; Extension Organization (AREEO), Kerman Branch <a href="mailto:u.emami@areo.ir">u.emami@areo.ir</a></p> <p><b>ABSTRACT</b></p> <p>Bunium persicum (Boiss) Fedtsch is a valuable medicinal plant that is facing extinction. A study was conducted to adopt various strategies and techniques to conserve and protect the biodiversity of B. persicum. Application of root, corm and leaf explants from six-month-old seedlings on MS medium supplemented with various auxins showed that root-derived and corm-derived calli on MS medium supplemented with 1.0 mg/L 2,4-dichlorophenoxyacetic acid (2, 4-D) by 77.1% and 74.9% respectively induced somatic embryogenesis calli. The somatic embryos transferred to medium supplemented with different concentrations of benzylaminopurine (BAP), kinetin, spermidine, forchlorfenuron (CPPU), chlormequat chloride (CCC), paclobutrazol (PBZ), casein hydrolysate (CH), poly ethylene glycol (PEG) and banana powder, led to maximum plantlet regeneration, which was <math>65.8 \pm 2.6</math> obtained in <math>\frac{1}{2}</math> MS medium supplemented with 20 g/L banana powder. Consequently, induction of somatic embryogenesis under 1.0 mg/L 2,4-D was found to be more suitable than other auxins and capacity of banana powder for plantlet development by having indol acetic acid (IAA), cytokinins and gibberellins (GAs) was more than other additives and PGRs. Also, the effect of different concentrations of sucrose, BAP, PBZ and GA3 on size of B. persicum corms was investigated. Results showed that 90 g/L sucrose with <math>164.9 \pm 2.8</math> mg corm fresh weight (FW) was the most suitable sucrose concentration for growth of corm and shoot numbers. The corms coated with sodium alginate and calcium nitrate to create artificial seeds. The seeds transferred to soil and produced seeds in the first year.</p>
<p><b>Khan Chand</b> GICICRST1610071</p>	<p><b>Performance evaluation of integrated malting unit for finger millet grains</b></p> <p><b>Khan Chand,</b> Assistant Professor, Department of Post Harvest Process and Food Engg, College of Technology, G.B.Pant University of Agriculture and Technology, Pantnagar, U.S.Nagar (Uttarakhand) <a href="mailto:kcphpfe@gmail.com">kcphpfe@gmail.com</a></p> <p><b>Navin Kumar Navnit,</b> Assistant Professor, Department of Post Harvest Process and Food Engg, College of Technology, G.B.Pant University of Agriculture and Technology, Pantnagar, U.S.Nagar (Uttarakhand)</p> <p><b>ABSTRACT</b></p> <p>Present work was focused on the modification and performance evaluation of integrated malting unit (IMU) for finger millet grains. To evaluate the performance of IMU, the independent parameters and their levels viz. soaking time (24, 30 and 36hrs), germination time (40, 48 and 56hrs) and chimney air velocity (7, 8 and 9 m/s) were considered on the basis of preliminary experiments and review literature. The</p>

	<p>experiments were designed using Response Surface Methodology (RSM) with Box-Bahenken Design and conducted to study the effect of these variables on germination percentage, malt loss, diastatic power and malting efficiency. Germination percentage ranged from 81.5% to 91.55 % where malt loss increased from 3.38 % to 9.89% and diastatic power also increased from 12.8 to 16.21 °L due to increase in soaking and germination time while malting efficiency of IMU increased from 91.00 to 96.73 %. The best quality of malted finger millet and best performance of IMU was observed at 36 h soaking time, 56 h germination time and 9 m/s chimney air velocity. Germination percentage, malt loss, diastatic power and malting efficiency were highly affected by germination time as compared to soaking time and chimney air velocity.</p> <p><b>Key words:</b> Finger millet, soaking time, germination time, air velocity and malting efficiency</p>
<p>Umesh Chandra Lohani GICICRST1610073</p>	<p>Effect of various parameters on the methane emission from the rumen of he-buffalo</p> <p style="text-align: center;"><b>Jayant Singh</b> Professor Department of Farm Machinery and Power Engg, College of Technology, G.B. Pant University of Agriculture and Technology, Pantnagar-263145 Uttarakhand, India <a href="mailto:jayantsingh07@gmail.com">jayantsingh07@gmail.com</a></p> <p style="text-align: center;"><b>Anvesh</b> Professor Department of Farm Machinery and Power Engg, College of Technology, G.B. Pant University of Agriculture and Technology, Pantnagar-263145 Uttarakhand, India</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The effect of environment and work conditions on oxygen consumption, methane and carbon dioxide emission from he-buffalo have been studied under a controlled environment using animal treadmill. The environment temperature of the he buffalo was varied in two temperatures (17 and 37°C) inside environment controlled chamber. In each temperature he-buffalo was made to exercise with two speeds (1.5 and 2.5 km/h), two treadmill inclinations (0 and 5° with the horizontal) and three draughts (no load, 10 and 12% of bodyweight) for three effective hours. The typical minimum percent increase in oxygen consumption during the study was found to be 11.09% at 17°C temperature and 45% humidity, 0° inclination of treadmill, speed of 1.5 km/h and no load condition whereas the maximum percent increase was recorded as 639.86% at 37°C temperature and 45% humidity, 5° inclination of treadmill, speed of 2.5 km/h and 12% draught. The methane concentration in exiled of he-buffalo also showed an increasing trend with the increase in temperature, speed, inclination, draught and duration of exercise. The typical minimum increase in percentage of methane concentration was found to be 9.66% at 17°C temperature and 45% humidity, 1.5 km/h speed, and 5° inclination of treadmill, no load condition. The maximum percent increase of methane concentration was 67.51% in and 17°C temperature and 45% humidity, 2.5 km/h speed, 5° inclination of treadmill, 12% draught. Carbon dioxide concentration in the exiled gas decreased with the increase in temperature, speed, draught and duration of exercise. The maximum percent change in carbon dioxide concentration was found to be 5.48% at 17°C temperature and 45% humidity, 2.5 km/h speed, 5° inclination of treadmill, 12% draught and minimum percent change in carbon dioxide concentration was found to be 0.77%, at</p>

	<p>17°C temperature and 45% humidity, 1.5 km/h speed, 5° inclination of treadmill, no load condition. Key Word: Oxygen, methane, CO<sub>2</sub>, humidity, speed and inclination of treadmill</p>
<p>S.Vijayalakshmi GICICRST1610074</p>	<p>Novel polymeric Nano materials as Surgical Screws</p> <p>Pragya Shrivastava, Centre for Research in Nano-Technology &amp; Science (CRNTS), Indian Institute of Technology Bombay (IIT B), Powai, Mumbai, India</p> <p>S.Vijayalakshmi, Centre for Research in Nano-Technology &amp; Science (CRNTS), Indian Institute of Technology Bombay (IIT B), Powai, Mumbai, India <a href="mailto:vlakshmi@iitb.ac.in">vlakshmi@iitb.ac.in</a></p> <p><b>ABSTRACT</b></p> <p>Biomaterial implants serve as vital modules of clinical biomedical applications, owing to their immense regeneration potential. Despite of their universal usage they are also concomitant with few drawbacks, including secondary revision and removal surgeries, less or no bone to material interface reaction and prone to corrosion. Biodegradable implants offer a promising alternative to address this issue for patients, as they provide high bone material interfacial bonding, enhanced support and tailorable degradation kinetics, thus eliminating the need for secondary surgeries. Appropriate selection of the implant biomaterial is a hence a key factor for long term success of implants. Nano bioactive glass has been evaluated for its bone healing attributes. In this paper we are reporting synthesis of nano bioactive glass based polymeric biomaterials, to be used as a base material for fabrication of bioresorbable screws. These bio composite nanomaterials were synthesized using sol gel technique followed by thermal induced phase separation method utilizing PEG-PPG-PEG triblock polymer in ethanol:water dispersion. These were tested for their toxicity, biocompatibility, biodegradation kinetics and applications. The synthesized materials were found be nano spheres of 100-300 nm size range. Their functional characterization was performed by FTIR, XRD and nano indentation, while biocompatible aspects were evaluated by SBF soaking studies and in vitro cell culture studies. MTT assay showed that they are non-toxic, biocompatible polymer composite nano materials. In vitro cell culture studies displayed their bone regeneration potential. Presence of PEG ensures the porous microstructure while the base material, nano bioactive glass presides over the dense microstructure imparting the primal requisite of imparting mechanical strength to the implant screw plates or rods. These polymer composite systems were optimized so as to reduce the negative biologic response while maintaining adequate function in vivo. The screw rods or plates would eventually convert into the natural bone tissues and be efficiently assimilated into the bone material interfaces imparting added support to the implanted biomaterial in vivo, thereby eliminating the need for removal and secondary surgeries.</p>

 <p>Arelli Sridhar GICICRST1610076</p>	<p><b>Synthesis and characterization of luminescence emission in rare earth elements with activated phosphate compound for lamp industry</b></p> <p>Arelli Sridhar Department Of Physics, Sathavahana University , India</p> <p><b>ABSTRACT</b></p> <p>Recently, more attention has been shifted to oxide-based luminescent materials because of their commercial applications in fluorescent tubes, color television, Scintillators, and X-ray phosphors. Various phosphor have been investigated and have proven that they are able to improve their luminescent ability to meet the development requirement of different displays and luminescence devices. Inorganic compounds that are doped with rare earth ion provide an important class of phosphors as they contain excellent characteristics of chemical stability, flexible emissions and high luminescence efficiency tested with different activators. There is a growing interest in the development and discovery of full color emitting phosphor materials that combine chemical and thermal stability in air with high quantum yield at optimal temperature.</p>
 <p>Pritha Das GICICRST1610077</p>	<p><b>Towards Formulating Environmental Vulnerabilities Index in Fragile Ecosystem: Study of the Indian Sundarbans</b></p> <p>Pritha Das Department of Mathematics, IEST, Shibpur, Howrah 711103 India, prithadas02@math.iests.ac.in, prithadas01@yahoo.com</p> <p>Atin Das NH School, 1/257, Naktala, Kolkata 700 047, India. dasatin@yahoo.co.in</p> <p><b>ABSTRACT</b></p> <p>Human Development Index (HDI) defined by United Nations Development Programme (UNDP) involves health, education and life standard. HDI as a measurement of development for a community is realistic as it takes into account the condition of common people's livelihood. Here, we study the development of Sundarbans in South and North 24 Parganas districts of West Bengal. Existing data indicates poor infrastructure as well as horrifying poverty, but livelihood, education and health indices for all 19 blocks of Sundarbans do not depict the exact developmental scenario. Climatic shocks reinforce risks and environmental vulnerabilities (EV) leading to long term setback for the human development. EV affects the developmental status and thus modifies HDI. In this work, we propose to take into account the EV. We present through review of existing data and literature related to human development, HDI, show anomalies in the available data and discuss factors of EV. Finally, we propose a model to formulate Environmental Vulnerability Index (EVI) for Sundarban using model of 4 dimensions with 24 indicators expressed in terms of 120 variables given below. We propose to collect data through house hold survey as well as available secondary data; few variables are to be experimentally measured.</p> <p><b>Key words:</b> Sundarban; Human Development Indicator (HDI); Environmental Vulnerability Index (EVI); house hold survey</p>



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**Effect Of Correlation Between Rock Structure With Water Discharge By Rainfall To Level Of Landslide In The Citarum Watershed 20-0 Kilometer, West Java, Indonesia**

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**ABSTRACT**

Citarum river is one of the longest river in Indonesia, with coordinate 7°4'31"S 107°44'53"E. Citarum river has an upstream which located in the region of Neglawangi, Kertasari, and has a downstream in the northern coast of Bekasi. A lot of people domiciled on the watershed of Citarum. Natural disaster such as landslide has become a common thing for people who live around the watershed of Citarum. Study of rock structures located in Citarum river may explain why landslides often occur in areas of Citarum river. The rock sample was conducted at three different stations with each station has a different rock structures. High rainfall causes water flow in the river rises. With the high discharge of water by high rainfall, certain rock structures that have a low resistance to water will be easily eroded and causes the soil above the rock structure vulnerable to landslides.

**Keywords :** Citarum, Landslide, Rock Structure, Rainfall, Water Discharge



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GICICRST1610080

**Implementation Of Localization Scheme For Energy-Efficiency And Improved Mobile Data Gathering In Wireless Sensor Networks**

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**ABSTRACT**

Recently Wireless Sensor Networks (WSN) is one of the increasing technologies to provide a service to the network users. WSN is used to transfer the data among the network nodes. To transferring the data, network should provide better communication method among WSN and should provide efficient energy consumption. To achieve this problems many approaches like mobile sink protocol and some other strategies were developed to transfer data through mobile sink mechanisms. Sensor nodes usually have limited energy supply and they are impractical to recharge. How to balance traffic load in sensors in order to increase network lifetime is a very challenging research issue. However, sensor networks with one fixed sink node often suffer from a hot spots problem since nodes near sinks have more traffic burden to forward during a multi-hop transmission process. The use of mobile sinks has been shown to be an effective technique to enhance network performance features such as latency, energy efficiency, and network lifetime. In this paper the system proposed a WRP (weighted rendezvous planning), which is a heuristic method that finds a near-optimal traveling tour that minimizes the energy

	<p>consumption of sensor nodes.</p> <p><b>KEYWORDS:</b> Wireless Sensor Networks, Mobile collector, Mobile sink, Relay nodes, Data collection, Location.</p>
 <p><b>Stephan Kupsch</b> GICICRST1610085</p>	<p><b>Characterization of valuable information from Social Media Networks during Natural Disasters</b></p> <p><b>Stephan Kupsch,</b> University of the Cordilleras, Baguio City, Philippines Kupschstephan@gmail.com</p> <p><b>Thelma D. Palaoag,</b> University of the Cordilleras, Baguio City, Philippines</p> <p><b>Alvin R. Malicdem</b> University of the Cordilleras, Baguio City, Philippines</p> <p><b>ABSTRACT</b></p> <p>Social Media Networks (SMN) is an invaluable source of almost any information that opens up access to an effective and irreplaceable real-time mechanism to broadcast information all over the globe. Although some of the data may be very useful, the majority of social media data holds no actual weight for those who are searching for information. Intrinsicly, the focus of the research is to identify and evaluate data on various SMN that are pouring into databases and to extract important information for a faster disaster recovery and response.</p> <p>Appropriate mechanisms must be in place to help both citizens and disaster management authorities to ensure about reliability and accuracy of information posted on social media. To directly respond to the problem, the main objective of the research is to develop an analysis tool with set of elements for use in machine learning calculations that can precisely recognize instructive posts and tweets from casual ones. Instructive refers to posts and tweets that would provide valuable and actual information to netizens, on the other hand, casual posts were defined as having no tangible information and it would not be deemed useful to anybody who could read the post or tweet. Furthermore, this study gathers instructive posts and tweets that shall be forwarded to the administration for possible rescue. Likewise, information gathered shall be utilized to queue the affected areas for possible help and organize their needs.</p> <p><b>Keywords:</b> SMN, Natural Language Processing, Disaster Management, Sentiment Analysis</p>
<p><b>Jayant Singh</b> GICICRST1610087</p>	<p><b>Effect Of Various Parameters On The Methane Emission From The Rumen Of He- Buffalo</b></p> <p><b>Jayant Singh</b> Department of Farm Machinery and Power Engineering, College of Technology, Govind Ballabh Pant University of Agriculture and Technology , Pantnagar, Uttarakhand, 263145, India. <a href="mailto:jayantsingh07@gmail.com">jayantsingh07@gmail.com</a></p>

	<p style="text-align: center;"><b>Anvesha</b> Department of Farm Machinery and Power Engineering, College of Technology, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, 263145, India.</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The effect of environment and work conditions on oxygen consumption, methane and carbon dioxide emission from he-buffalo have been studied under a controlled environment using animal treadmill. The environment temperature of the he buffalo was varied in two temperatures (17 and 37°C) inside environment controlled chamber. In each temperature he-buffalo was made to exercise with two speeds (1.5 and 2.5 km/h), two treadmill inclinations (0 and 5° with the horizontal) and three draughts (no load, 10 and 12% of bodyweight) for three effective hours.</p> <p>The oxygen consumption of the he-buffalo was observed to be increasing with the increase in temperature, speed, inclination of treadmill and duration of exercise. The typical minimum percent increase in oxygen consumption during the study was found to be 11.09% at 17°C temperature and 45% humidity, 0° inclination of treadmill, speed of 1.5 km/h and no load condition whereas the maximum percent increase was recorded as 639.86% at 37°C temperature and 45% humidity, 5° inclination of treadmill, speed of 2.5 km/h and 12% draught. The methane concentration in exiled of he-buffalo also showed an increasing trend with the increase in temperature, speed, inclination, draught and duration of exercise. The typical minimum increase in percentage of methane concentration was found to be 9.66% at 17°C temperature and 45% humidity, 1.5 km/h speed, and 5° inclination of treadmill, no load condition. The maximum percent increase of methane concentration was 67.51% in and 17°C temperature and 45% humidity, 2.5 km/h speed, 5° inclination of treadmill, 12% draught..</p> <p><b>Key word:</b> Rumen, Methane, Treadmill, Draught</p>
 <p style="text-align: center;"><b>Uzma Naseem</b> GICICRST1610088</p>	<p style="text-align: center;"><b>Workplace Bullying and Performance of the Employee</b></p> <p style="text-align: center;"><b>Uzma Naseem.</b> International Islamic University, Islamabad. <a href="mailto:Uzma_naseem@hotmail.com">Uzma_naseem@hotmail.com</a></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>This paper concentrates on the impact of workplace bullying on the performance of the employees in the workplace. As workplace bullying has become a general concern for many organizations. It refers to the repeated mistreatment of an employee by his or her colleagues or employers (Kohut, 2007). The aim of this scrutiny is to evaluate the influence of the workplace bullying on the performance of the employees while adopting a quantitative approach. This research is quantitative in nature. Data collected from the structured questionnaires which are distributed by the researcher himself. SPSS has been utilized in the analysis of the data. Percentages of the various factors which cause the performance of the employees investigated systematically and statistically. The feelings of anxiety, dissatisfaction with the job, work alienation and stress are observed after the continuous mistreatment of the high authorities or colleagues in the workplace. Hence, a thorough study demonstrated the investigation</p>

	<p>on the performance of the workplace bullying in the workplace. Keywords: workplace, bullying, employees, questionnaires, and SPSS</p>
 <p>Randy Joy Magno Ventayen GICICRST1610091</p>	<p>Multi-lingual Detection and Analysis of Emergency and Disaster Related Post in Social Media</p> <p>RANDY JOY M. VENTAYEN Information Technology, Pangasinan State University, Philippines</p> <p>ABSTRACT</p> <p>Philippines is considered as a disaster-prone country in Southeast Asia. Today, social media such as twitter served as a communication outlet and majority of the post are written in English. This is a problem or gap to those who are not well-versed in foreign language or cannot even read or understand English. This study promotes the use of local language by transcribing the posts using the specified language of the identified region. It will enhance and bridge the gap between the major speaking language from the local areas of the country specifically in the Ilocos Region. The developed system translate disaster and emergency related keywords in local language for extraction and detection. Furthermore, this study will determine the geo-location and community structure of the disaster and emergency related post in local language, and analyze community structure formed from maps and compare it to actual patterns of disaster affected areas for a reliable report to the government for faster responds. This shall analyzed the properties of the community structure detected among nodes in a social network graph formed among Filipino social media users who posted about disaster in the local language in the region. Maps shall be use as a crowdsource to identify the disaster and emergency related tweets in Ilocos Region. This study shall apply an algorithm syntactically identify and semantically parse the keywords from the multi-lingual data source in social media. Node-red and hadoop will be used for community detection and extraction of data while Rapid Miner will be use for data analytics before posting in a website for information dissemination to the responsible government agency. This paper presents the possibility of affected community which gives bigger changes of possible projecting the exact location</p>
 <p>Amy Paneda Balcita GICICRST1610092</p>	<p>Analysis of Tropical Cyclones Related Tweets using Data Mining</p> <p>Amy P. Balcita, Open University System, Don Mariano Marcos Memorial State University, La Union, Philippines</p> <p>Thelma D. Palaoag, Open University System, Don Mariano Marcos Memorial State University, La Union, Philippines</p> <p>Alvin Malicdem, Open University System, Don Mariano Marcos Memorial State University, La Union, Philippines</p> <p>ABSTRACT</p> <p>The Philippines is subjected to an average of 20 tropical cyclones per year according to the Philippine Atmospheric, Geophysical and Astronomical Services</p>

	<p>Administration (PAGASA). It is highly prone to disasters resulting from extreme natural events like tropical cyclones, monsoon rains, earthquakes, tsunamis and volcanic eruptions. Recently, social media services like Twitter have received much attention in the field of disaster response. During disaster, people through their tweets report about missing or found people, buildings or roads damaged, utilities or services interrupted, information about needs and shelters and supplies such as food, water, clothing, medical supplies, etc. In this paper, we perform tweets classification into meaningful categories the tweets during the Typhoon Lawin and summarize these tweets using text-mining methods and tools. In the summarization phase, we propose a two stage summarization framework which first extracts a set of important tweets from the whole set of information through an Integer-linear programming (ILP) based optimization technique and then follows a word graph and content word based abstractive summarization technique to produce the final summary. This research has focused more on the challenges of extracting location from the social media data to produce relevant information graphics/maps to support disaster response. We find that these infographics may help official responders develop stronger awareness of the disaster. Likewise, with the use of the maps, disaster managers may have an operational picture of the disaster and be able to act quickly in their response operations.</p> <p><b>Keywords</b> Data mining, Text Summarization, Rapid Miner</p>
 <p><b>Ricardo A. Catanghal Jr</b> GICICRST1610093</p>	<p><b>Social Sensing using Clustering algorithm for Disaster Response Needs Assessment</b></p> <p><b>Ricardo A. Catanghal Jr</b> Computer Science, University of the Cordilleras, Baguio City, Philippines</p> <p><b>ABSTRACT</b></p> <p>Philippines is a disaster prone country, as such good decision making after the disaster is very important. Social media are widely used today, harnessing its power to produce vital information. This work is motivated to provide information through social sensing, which uses humans as sensors to observe and report events in the physical world. In this paper we propose that, Twitter feeds which consist of short messages to extract information as a tool in needs assessment for a disaster hit community. This information will serve as situation awareness through crowd sourcing, in order to deliver the relevant basic needs to the disaster stricken community and humanitarian disaster response. The data were obtain using the Twitters open search API using terms and specified geographic location. A preliminary experiment is carried out, raw data were tokenized/normalized and used TF-IDF weighing of token features. We measure the quality of the cluster produced by using hash-tags to produce standard clustering, and use the Purity and Pairwise metrics to evaluate clustering result. A time series analysis was done to simulate the incoming daily tweets and how will the classifier behaves. This study will be helpful in identifying, analyzing, monitoring and evaluating basic needs of the affected communities, in order for the decision makers to take necessary actions and respond to the needs of the people.</p> <p><b>Keywords:</b> Data Mining, Disaster Management, Natural Language Processing, Social Media</p>



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GICICRST1610094

**Improving the Disaster Coordination using Automated Incident Report (AIR) Miner from Short Messaging System (SMS) and Social Media Networks (SMN)**

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Man-made or natural calamities can be avoided if the simple incidents that triggers those calamities are reported immediately by the incident witness and acted in an instant by the proper authorities. Utilizing all forms of communication is vital in minimizing the damage of any calamity. Short Messaging System (SMS) and Social Media Networks (SMN) can be a tool for extracting an information during the four phases of the disaster; mitigation, preparedness, response; and recovery. Since these tools are fast and cheap, it would be a convenience to the community and policy makers to decide and act on a certain disaster. This study focuses in data extraction, identification, and validation of incident reported on SMS and social media website for Emergency/Calamity Monitoring & Response management system. Scrum methodology was used in developing the Automated Incident Report (AIR) Miner. Furthermore, this study investigates and understand how social media user post comments in the incident that took place in their respective area. Facebook and SMS are the identified primary sources of data. The performance of the AIR miner in identifying the calamity type yielded 90% accuracy whereas 60% resulted in identifying similar incident coming from the different user post. Thus, the researchers claimed that the AIR Miner is an effective tool in identifying pre and ongoing disaster incident posted on social media and SMS. Further study is recommended in the AIR Miner tool to improve its accuracy.

**Keywords:** Calamities, Data Mining, Social Networking, Short Messaging System, Calamity Monitoring & Response management system & Automated Incident Report Miner



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**Selection of best alternative in Intelligent Manufacturing System by Hybrid AHP and Fuzzy-TOPSIS Method**

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	<p style="text-align: center;"><b>Pushparenu Bhattacharjee,</b> Department of Production Engineering, National Institute of Technology, Agartala, India</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The concept of intelligent manufacturing combines the ability of decision-making support systems in generative systems to obtain knowledge, to learn and to adapt to a changing environment and to the actual arrangement of system components. The nature of intelligent manufacturing is system's possibility to learn and its self-development as well as the possibility to generate information necessary to control the integrated production system. The Fuzzy-TOPSIS is widely used for tackling ranking problems in real situations. The AHP method provides weight factors of the given criteria's. This combined method is often criticized for its inability to adequately handle the inherent uncertainty and imprecision associated with the mapping of the decision-makers perception to crisp values. In the traditional formulation of the TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution), personal judgments are represented with crisp values. Keywords: Fuzzy-TOPSIS method, AHP (Analytical Hierarchy Process), IMS (Intelligent Manufacturing System) Selection</p>
 <p style="text-align: center;"><b>Swarup Paul</b> GICICRST1610055</p>	<p style="text-align: center;"><b>Wear Characteristics Of Vital Components Of A Compression Ignition Engine Run By Alternative Fuel Using Used Lubricating Oil</b></p> <p style="text-align: center;"><b>Swarup Paul,</b> Assistant Professor, NIT Agartala, Jirania, India <a href="mailto:pswarup2008@gmail.com">pswarup2008@gmail.com</a></p> <p style="text-align: center;"><b>K.N.V.Subrahmanyam,</b> Director and COO, Petrolabs India Pvt. Ltd., Hyderabad, India. Email: <a href="mailto:subbu@petrolabsindia.com">subbu@petrolabsindia.com</a></p> <p style="text-align: center;"><b>Bijan Sarkar,</b> Professor and former Head, Production Engineering Department, Jadavpur University, Kolkata, India. <a href="mailto:bijon_sarkar@email.com">bijon_sarkar@email.com</a></p> <p style="text-align: center;"><b>P.K. Bose,</b> Professor and former Director, National Institute of Technology, Agartala, Tripura, India <a href="mailto:pkb32@yahoo.com">pkb32@yahoo.com</a></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Now-a-days alternative fuels in Internal Combustion engines are badly needed because of depleting fossil fuel reserves and also to protect our environment from harmful effects of emissions caused by fossil fuel combustion. A worldwide research programmes and partial implementation are going on on the application of alternative fuels like vegetable oil or Biodiesel as a substitute of fossil fuel entirely or mixing with mineral diesel in various proportions. Extensive studies and results are available on their properties, performances, emissions and combustion aspects. But</p>

	<p>wear characteristics of principal parts of an internal combustion engine like piston, piston rings, cylinder, cylinder head, injector etc. are also equally important when the engine is operated with this type of higher viscous fuel compared to lesser viscous diesel fuel. In the present paper it discusses the effect of engine operation with N20 fuel for 50 hours. The nomenclature of the fuel N20 means the volume ratio of neem Tree Borne Oil ( TBO) and diesel fuel is 20:80. Similar experiments with diesel fuel alone are performed as well to examine comparative results with those of N20 fuel. It shows from the wear particles generated that more damage of surface has occurred in the case of N20 fuel application.</p> <p>Keywords : Surface, Components, TBO, Lubricating oil, Image analysis.</p>
 <p>Priyanath Das GICICRST1610058</p>	<p><b>Improvement of Output Power of Photovoltaic Modules Connected In Series Under Shading</b></p> <p>Priyanath Das, Associate Professor, Dept. of Electrical engineering, National Institute of Technology Agartala, Jirania, Tripura (West) 799046, India <a href="mailto:priyanath70@gmail.com">priyanath70@gmail.com</a></p> <p>Saptadip Saha, Department of Electrical Engineering, National Institute of Technology Agartala, Jirania, Tripura (West) 799046, India <a href="mailto:saptadip.saha@gmail.com">saptadip.saha@gmail.com</a></p> <p>Kailash Kumar Mahto, Department of Electrical Engineering, National Institute of Technology Agartala, Jirania, Tripura (West) 799046, India <a href="mailto:kailash8317@gmail.com">kailash8317@gmail.com</a></p> <p>Samima Akter, Department of Electrical Engineering, National Institute of Technology Agartala, Jirania, Tripura (West) 799046, India <a href="mailto:samima.akter1989@gmail.com">samima.akter1989@gmail.com</a></p> <p><b>ABSTRACT</b></p> <p>In this paper, we have studied and analyzed the shading effect on solar photo voltaic (SPV) modules connected in series using four 75 W SPV modules for three different shading conditions: (1) one module is fully shaded, (2) two modules are fully shaded and (3) three modules are fully shaded. The performance of the modules which decreased due to shading effect are improved in each case using bypass diodes connected in parallel with each of the modules. This analysis is done by using the simulation model in PSCAD and an outdoor experiment is also performed to validate the simulation results for the same configurations. An improvement in open circuit voltage (Voc), short circuit current (Isc), maximum power (Pmax) and power efficiency are observed when bypass diodes are used. During an outdoor experiment when one panel is shaded the power efficiencies are 17.96 % and 12.79 % with and without bypass diodes respectively. In case of two modules are shaded these values are 14.50 % and 9.63 % respectively. When three modules are shaded the power</p>

	<p>efficiency is 3.59 % in case of without bypass diode, which is increased to 6.87 % with bypass diodes. Keywords: Solar photovoltaic, irradiation, bypass diode, simulation, efficiency, PSCAD.</p>
 <p>Sarmistha Saha YRSICRST1610051</p>	<p><b>Cellular and molecular mechanism of pathological nephrolithiatic inhibition</b></p> <p>Sarmistha Saha, Zoology Department, School of Sciences, Gujarat University, Ahmedabad-380009, India <a href="mailto:drssaha30@gmail.com">drssaha30@gmail.com</a></p> <p>Ramtej Verma, Zoology Department, School of Sciences, Gujarat University, Ahmedabad-380009, India <a href="mailto:zooldeptgu@yahoo.com">zooldeptgu@yahoo.com</a></p> <p><b>ABSTRACT</b></p> <p>Even though the prevalence of nephrolithiasis is increasing, our understanding of the underlying mechanisms has not kept pace and new therapeutic approaches have not emerged. Calcium oxalate is the main component of kidney stones. Some medicinal plants have shown protection against nephrolithiasis, such as <i>Bergenia ciliata</i> (Saxifragaceae), a plant empirically used in Asia for its diuretic and antiurolithiasic activity. <i>Bergenia ciliata</i> rhizomes were taxonomically identified and hydro-methanol extract was prepared and a validated HPLC method was used for standardization using gallic acid as a marker. Nephrolithiasis was induced in Wistar female rats by administration of ethylene glycol in drinking water for 28 days. Nephrolithiatic rats were treated with the rhizome extract and gallic acid for 28 days. Calcium, oxalate and phosphate levels were measured in urine and kidney. The expression of transporters (OAT3 and MRP2) involved in the secretion of oxalate, were quantified by western blotting. Cell viability, apoptosis in terms of caspase activities and percent of DNA fragmentation and lipoperoxidation were determined in calcium oxalate-induced cytotoxicity in MDCK renal epithelial cells. After treatment with extract and gallic acid, calcium, oxalate and phosphate levels were recovered and OAT3 and MRP2 expression were reduced significantly. Histopathological studies also showed the reduced calcifications in kidney of rhizome extract and gallic acid treated rats. <i>Bergenia ciliata</i> rhizomes and gallic acid prevented the damage caused by lithiasic process by improving the cell viability and counteracting the lipoperoxidation, caspase activities and DNA fragmentation effects by calcium oxalate in MDCK cells.</p> <p>Keywords: Nephrolithiasis; <i>Bergenia ciliata</i>; gallic acid.</p>



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**Evaluating the developed e-enabled content in Higher Education in Bethlehem University with the Quality Assurance Standards**

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Palestine, 2015

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Abdulla Ibn AlHussen Secondary Girls School  
Palestine, 2015

**ABSTRACT**

This study examined the standards that could be used when starting to design and develop e-enabled Palestinian content in a way that insures the quality element to be embedded and aimed to evaluate the first two modules from the e-enabled professional diploma content at Bethlehem University.

To achieve the aim of the study the researchers analyzed the literature and recognized the differences between the online quality standards and decided to use the NACOL guidelines with adding some modifications, and the researchers with other two researchers reviewed the online content of each module separately and gave a rating score for each statement at the evaluation tool, and then the researchers took the average of the rating score.

The results showed that the module1 content needs discretionary improvement but the content of module 2 needs targeted improvements. The researchers believe that this difference may refer to the subject matter expert's proficiency in developing the online content with interactive text and tools. The subject matter experts must ensure that online learners are properly motivated by including instructional elements that catch and hold learners' attention. The instructional design at the two modules was good enough because the instructional designer for this diploma, as the researchers' knowledge, had previous experience in arranging media and content together to produce e-enabled content. But the student assessment at module 1 was good in terms of using different ways to assess the learners understand, and the students assessments at module 2 needed targeted improvement by adding different assessment strategies and tools. The technology at the two modules was very satisfactory. The IT experts used a well-known learning management system (LMS) named MOODLE; it is very easy to utilize and use by the students and subject matter experts, it is user friendly and includes the needed online communication tools like forums, chat and voice chat. The course management was satisfactory at the two modules and need optional improvements.

**Keywords**

Blended Learning, E-enabled content, Instructional Design, Learning Management System

Elham Mohammed  
Mohammed Khair  
GICICRST1610095

**Assessment of Arabic gum as a gelling Agent for Water based Hydraulic Fracturing Fluids**

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	<p style="text-align: center;"><b>Zhang Shicheng</b> China University of Petroleum; Beijing</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>For low permeability reservoirs, hydraulic fracturing was introduced as a unique technique for production enhancements, it involves an injection of fluid into the formation with high pressure. The injected fluid (fracturing fluids) has different based systems; such as water, oil, acid or foam based fluids. Water based fluid is the most commonly used; it consists of water and water soluble polymer. Different polymers are available in the markets such as guar and Xanthan gum; the gelling ability of other natural gums such as Arabic gum was not investigated yet; the current study evaluates the ability of Arabic gum to work as gelling agent for fracturing fluid. The gum harvested from Acacia Senegal or related species with price of 70% less than guar gum in Sudan.</p> <p>Following the Chinese standard (SY/T 5764), series of standard laboratory tests were performed to address the performance of the gum under different conditions for wide range of acidities (pH).</p> <p>Moisture content and insoluble components were found in the accepted range of SY/T 5764; while the pH of the solution does not meet the standard and additives were added to achieve the required pH. The critical concentration of the gum was found 1%, while no cross-linking ability was appeared for the gum under the different conditions; some white slugs were obtained with gum concentration of 10% and zirconium ions under pH of 6.2 to 6.7; and the slugs were totally dissolved at pH of 10.</p> <p><b>Key words</b> Arabic gum; Fracturing Fluids; Gelling Agent; Concentration ; Cross-linkers</p>
<p><b>Prof. Adlim</b> GICICRST1610097</p>	<p style="text-align: center;"><b>Immobilization Of Colloidal Sulfur On Rice Husk Ash Pellet Coated By Chitosan And The Activity For Mercury Vapor Stabilization</b></p> <p style="text-align: center;"><b>M. Adlim,</b> Chemistry Department, FKIP Syiah Kuala University, Darussalam Banda Aceh, 23111 , Indonesia</p> <p style="text-align: center;"><b>Fitri Zarlaida,</b> Chemistry Department, FKIP Syiah Kuala University, Darussalam Banda Aceh, 23111 , Indonesia</p> <p style="text-align: center;"><b>Ibnu Khaldun,</b> Chemistry Department, FKIP Syiah Kuala University, Darussalam Banda Aceh, 23111 , Indonesia</p> <p style="text-align: center;"><b>Rizka Dewi ,</b> Chemistry Department, FKIP Syiah Kuala University, Darussalam Banda Aceh, 23111 , Indonesia</p> <p style="text-align: center;"><b>Syafiatuddin Karina,</b> Marine Department, FKIP Syiah Kuala University, Darussalam Banda Aceh, 23111 Indonesia</p>

	<p style="text-align: center;"><b>Ahmad Fairuz Omar</b> School of Physical Science, Universiti Sains Malaysia, Minden, Penang, Malaysia</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Mercury vapors from the burning of gold amalgam and burning coal are a main source of mercury pollution. Waste mercury treatment standard is mixing elemental mercury with sulfur powder but often very slow. This research aims to study the absorption of mercury vapor with sulfur nanoparticles immobilized on rice husk ash pellets coated chitosan. In this study, three types of absorbents noted as Pellet-S-powder, pellet-S-CS2 and pellet-S-colloid were used for mercury vapor stabilization. TEM data indicate that sulfur colloid has the smallest (2-3 nm) particles but less sulfur content compared to the others. Pellet-S-colloid showed the highest mercury vapor absorption (99.7%) with the capacity is 12.986 mg per gram of sulfur.</p> <p><b>Keywords :</b> Mercury, colloidal, chitosan, sulfur</p>
<p><b>CHOI KWANG HWAN</b> GICICRST1610098</p>	<p style="text-align: center;"><b>Performance Analysis of Solar Photovoltaic with Integrated Cooling Module</b></p> <p style="text-align: center;"><b>Fatkhur Rokhman,</b> Department of Refrigeration and Air-conditioning Engineering, College of Engineering, Pukyong National University, South Korea. Nam-gu, 365 Sinseon-ro Yongdang Campus, Busan, Republic of Korea</p> <p style="text-align: center;"><b>Hwi-Ung Choi,</b> Department of Refrigeration and Air-conditioning Engineering, College of Engineering, Pukyong National University, South Korea. Nam-gu, 365 Sinseon-ro Yongdang Campus, Busan, Republic of Korea e-mail: choikh@pknu.ac.kr</p> <p style="text-align: center;"><b>Jung-In Yoon,</b> Department of Refrigeration and Air-conditioning Engineering, College of Engineering, Pukyong National University, South Korea. Nam-gu, 365 Sinseon-ro Yongdang Campus, Busan, Republic of Korea</p> <p style="text-align: center;"><b>Chang-Hyo Son,</b> Department of Refrigeration and Air-conditioning Engineering, College of Engineering, Pukyong National University, South Korea. Nam-gu, 365 Sinseon-ro Yongdang Campus, Busan, Republic of Korea</p> <p style="text-align: center;"><b>Young-Bok Kim,</b> Department of Mechanical System Engineering, College of Engineering, Pukyong National University, South Korea. Nam-gu, 365 Sinseon-ro Yongdang Campus, Busan, Republic of Korea</p> <p style="text-align: center;"><b>Kwang-Hwan Choi*,</b> Department of Refrigeration and Air-conditioning Engineering, College of Engineering, Pukyong National University, South Korea. Nam-gu, 365 Sinseon-ro Yongdang Campus, Busan, Republic of Korea</p>

	<p style="text-align: center;"><b>ABSTRACT</b></p> <p>A photovoltaic system consists of solar cell which generates electricity with photoelectric effect as lights hit, part reserving electricity and device converting it. Surface temperature of the photovoltaic module increases when the solar light reaches to it, and this causes decrease of production power. Thus, experiments are conducted to compare three types of solar sink for removing gathered heat from back-side of the photovoltaic module.</p> <p>A standard module shaping with the fin plate and the inorganic Nano-coated module are applied. The experiments are conducted through March to September, and azimuths of west, east are applied to analyze the power production and the surface temperature of each module. As a result, the inorganic Nano-coated module has shown the lowest back-side surface temperature regardless of azimuths, compared to the standard.</p> <p>Also, cooling effect of back-side surface temperature, which resulted from promotion of radiation, strongly was related to increase of power production. Thus, the inorganic Nano-coated module generates more electricity compared to other modules.</p> <p><b>Keywords:</b> Photovoltaic, Cooling module, Surface temperature, Nano-coated</p>
 <p style="text-align: center;"><b>Uzma Litaf</b> GICICRST1610099</p>	<p style="text-align: center;"><b>Effect of different concentration of apple pulp and sugar on the shelf stability of prepared apple leather at ambient temperature</b></p> <p style="text-align: center;"><b>UzmaLitaf,</b> Agriculture Research Institute, Tarnab, Peshawar. Agriculture University Peshawar Uzma.litaf@yahoo.com</p> <p style="text-align: center;"><b>Sher Hassan khan ,</b> Agriculture Research Institute, Tarnab, Peshawar. Agriculture University Peshawar</p> <p style="text-align: center;"><b>Muhammad Usman Ali ,</b> Department of Food science and technology, Faculty of Nutritional sciences, NWFP Agriculture University Peshawar</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>The aim of the study was to evaluate a suitable combination of apple pulp and sucrose solution for the preparation of apple leather, stored at ambient temperature. The treatments were T0, T2, T3, T4 and T5. The samples were wrapped in aluminum foil and then packed in polyethylene bags and evaluation was carried out for total period of 60 days. Physiochemically analysis, acidity, brix0, moisture and sensory characteristics of; color, taste, texture and overall acceptability (using Larmond scale) were evaluated at 15 days interval. The moisture content of apple bar was decreased from 16.76 to 11.55 throughout the storage. Maximum increased was observed in T4 (53.26%) followed by T5 (34.16%), in compare minimum fall was observed in T0 (17.65%) followed by T1 (21.23%). The TSS of apple pulp was 14 brix0 when sucrose solution was added in different ratio, after drying the TSS of apple bar was increased from 14.41 to 89.26 during storage. Maximum increased was observed T5 (85.34%) followed by T3 (84.33%), while lowest raise was observed in T0 (81.81%) followed by T1 (82.022%). The pH of apple bar was reduced from 3. 3</p>

	<p>to 4.478 for the period of storage. Maximum reduced was perceived in T5 (47.147%) followed by T4 (44.410%), in compare minimum fall was observed in T2 (24.242%) followed by T3 (31.437%) and T1 (31.927%) .The titratable acidity of apple bar was increased from 0.16 to 1.39 for the period of storage. Supreme increased was perceived in T0 (93.69%) and T2 (89.2%) followed by T2 (90.605%), while lowest raise was observed in T4 (65.090%) followed by T5 (77.61%). The storage intervals had effect on the mean scores for organoleptic assessment. Mean scores of juries for the color of apple bar was reduced from 7.20 to 5.73 for the period of storage. Supreme decreased was perceived in T4 (50%) followed by T4 (33.33%), while lowest fall was observed in T1 (9.88%) followed by T0 (10.71%). Mean totals of juries for the taste of apple bar was reduced from 7.83 to 5.73 for the period of storage. Maximum reduced was detected in T4 (53.85%) followed by T5 (42.86%), while lowest fall was observed in T1 (9.88%) followed by T0 (13.71%). Mean scores of judges for the texture of apple bar was reduced from 7.75 to 5.67 for the period of storage. Maximum decreased was perceived in T5 (53.57%) followed by T4 (52%), while lowest fall was observed in T1 (11.43%) followed by T0 (12.90%). Mean scores of juries for the overall acceptability of apple bar was reduced from 7.54 to 5.54 throughout the storage. Maximum decreased was perceived in T5 (50%) and T4 (50%) followed by T3 (23.33%), while lowest fall was observed in T1 (11.43%) followed by T0 (14.21%). Overall results showed that the treatment T1 was found most acceptable.</p> <p><b>Keywords:</b> Apple leather, storage, Physico-chemical analysis, organolyptic analysis.</p>
<p><b>Junghwan Oh</b> GICICRST1610104</p>	<p><b>Reflection-mode Photoacoustic Microscopy for Biomedical Engineering</b></p> <p><b>Junghwan Oh</b> Department of Biomedical Engineering, Pukyong National University, Busan, South Korea <a href="mailto:jungoh@pknu.ac.kr">jungoh@pknu.ac.kr</a></p> <p><b>ABSTRACT</b></p> <p>We developed a reflection-mode photoacoustic microscopy (PAM) system capable of label-free imaging optical absorption contrasts in vivo with the use of a hand-made opto-acoustic beam combiner (OABC). The reflection-mode imaging capacity of the OABC based on a 10 MHz, single-element, focused ultrasound transducer, a 10X microscope objective lens (NA = 0.25), and a 1 mm thick glass slab is presented. Using a bright-field light delivery system which allow reducing the excitation pulse energy used in the in vivo experiments, the optical foci is confocall aligned with the sound beam of the ultrasonic transducer. Experiments show the reflection-mode PAM system successfully monitored in vivo photoacoustic images of mouse tumor. It is expected that our compact PAM system could be a useful tool for biomedical imaging.</p> <p><b>Key Word:</b> Photoacoustic Imaging, Biomedical Application, Opto-acoustic</p>

<p><b>Dr. Apu Kumar Saha</b> GICICRST1610096</p>	<p><b>Performance efficiency analysis of water treatment plants by using MCDM and Neural Network model.</b></p> <p><b>Apu Kumar Saha,</b> Department of Mathematics, National Institute of Technology, Agartala, Tripura, India, <a href="mailto:apusaha.nita@gmail.com">apusaha.nita@gmail.com</a></p> <p><b>Sudipa Choudhury,</b> Department of Mathematics, National Institute of Technology, Agartala, Tripura, India, <a href="mailto:Sudipachoudhury032@gmail.com">Sudipachoudhury032@gmail.com</a></p> <p><b>Mrinmoy Majumder,</b> School of Hydro-Informatics Engineering (Under Civil Engineering Department), National Institute of Technology, Agartala, Tripura, India. <a href="mailto:mmajumder15@gmail.com">mmajumder15@gmail.com</a></p> <p><b>ABSTRACT</b></p> <p>The urbanization in India is exerting stress on the authorities to provide safe drinking water. The organization of safe and sustainable sources of water remains a priority for decision makers around the world. The centrality of water in public health as well as in industry creates a high demand for water supply of suitable quality that many nations around the world are harassed to meet. In India in particular, water shortages and poor water quality continue to be major challenges in both domestic and industrial sectors. It is very much necessary to evaluate the performance of the existing water treatment plant. This paper utilizes the Non-structural Fuzzy Decision Support System (NSFDSS) as well as Artificial Neural Network (ANN) to identify the parameter that is most significant in helping the decision makers to build an efficient water treatment plant operating system.</p> <p><b>Keywords:</b> Water treatment plant, NSFDSS, ANN.</p>
<p><b>Roberto J. Dela Cruz</b> GICICRST1610100</p>	<p><b>Correlation of stem students' performance in the national career assessment examination and academic subjects</b></p> <p><b>Flordeliza P. Ferrer</b> Pamantasan ng Lungsod ng Maynila (University of the City of Manila), Philippines <a href="mailto:fpf92@yahoo.com.ph">fpf92@yahoo.com.ph</a></p> <p><b>Roberto J. Dela Cruz</b> Pamantasan ng Lungsod ng Maynila (University of the City of Manila), Philippines <a href="mailto:rjd@yahoo.com">rjd@yahoo.com</a></p> <p><b>ABSTRACT</b></p> <p>The study aims to determine if the students' performance in the National Career Assessment Examination (NCAE) is significantly correlated to their academic performance in Grades 10 and 11. The NCAE, an aptitude test taken by the students in Grade 9, aims to assess the skills of the students who plan to proceed to Senior High School (SHS). It provides relevant information on the students' skills, abilities</p>

and readiness for academic and non-academic courses and other information that help high school students make wise career decision. The academic subjects considered in the study include Science, Mathematics and English, which were taken by the students in Grades 10 and 11. The researchers employed the purposive sampling, taking into consideration the selection of over two hundred (200) SHS Grade 11 students who are enrolled in the academic track of Science, Technology, Engineering and Mathematics (STEM) during the Second Semester of the Academic Year 2016-2017. With the use of mean, Pearson Product Moment of Correlation and t-test, the statistical findings revealed that in the three subject areas, the students got the highest grade in Science in NCAE and Grade 10 while English in Grade 11; with the lowest grade reflected in English in NCAE while Mathematics in Grades 10 and 11. Significant positive correlations of the students' performance in the three subjects were observed in NCAE and the same findings resulted to Grades 10 and 11. Moreover, the students' performance in Science from NCAE to Grade 11 showed significant positive relationship and was similarly observed in the academic areas of Mathematics and Science.

**Keywords:** Career Assessment, STEM Students, Students' Performance

The Geology of Karangmocol, Karangmoncol District, Purbalingga Regency, Central Java Indonesia



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#### ABSTRACT

Administratively, the study area belongs to the Jambudesa Village, District of Karangmoncol, Purbalingga Subprovince, Central Java Province and is located geographically at 109° 24' 12.8" – 109° 29' 39.1" East Longitude and 7° 20' 27" – 7° 15' 3.2" South Latitude.

The geological mapping was conducted to determine the elements of geomorphology which was then separated into several geomorphological units. The objective of this research was also to know the type of lithology, including rock structures, fossil content, layer thickness, and the relationship between lithology's which were then grouped into lithological units. Further, it was intended to find the indications of geological structures that developed in the study area, followed by revelation of the geological history of the area of research as well as to know the economic mineral occurrences and potential geological hazard contained in the research area.

The research methods ranging from the preparation stage, fieldwork, laboratory analysis, the analysis phase continued in the form of geomorphological analysis, stratigraphic analysis, geological structure analysis, geological history analysis, and also potential and geological disaster analysis. It could be concluded from the results of analysis that the study area consists of 4 geomorphological units, and the geological unit from the old to the young order are: Volcanic breccia unit, sandstone A unit, sandstone B unit, clay stone unit. The geological structures that developed in the research area are in the form of Jambudesa sinistral fault, Karangsari syncline, and Karangmoncol anticline. The geological potential resources found in this area is non-metal minerals, that is sandstone for building materials, while potential for the geological disaster happened is landslides.

**Keywords:** geomorphology, stratigraphy, structural geology, geological history, potential and geological disaster

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