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Flora Grand Hotel, Near Al Rigga Metro Station, Deira, Dubai, United Arab Emirates

KEYNOTE SPEAKER

Prof. Ralph Hammann
PhD RA, LEED A.P., Thomas D. Hubbard Endowed Professor in
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Statistical Forecasting of the Human Immunodeficiency Virus (HIV) in the Philippines

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GICICRST1712052

Abstract
One of the threatening illnesses that cannot be cured is the Human Immunodeficiency Virus (HIV). The immune system of the person having HIV will attacked that can lead to "immune deficiency" which destroy the function of immune system. The HIV can be transmitted through transfusion of infected blood through the use of needles, unsafe sexual intercourse, syringes and other objects, and mother having HIV positive can be transmitted to her infant during pregnancy or even breastfeeding. The new HIV/AIDS infected persons in the Philippines were reported monthly by the Department of Health (DOH) HIV/AIDS and ART Registry of the Philippines (HARP). According to World Health Organization last 2015, Philippines has the lowest rate of infection yet is the fastest growing number worldwide. One of the objectives of this study is to create best statistical model that can predict the number of HIV cases per month. This process can help the government to prepare the needs for temporary remedy and pursue the awareness campaign of HIV cases. The researcher gathered time series data which is monthly HIV new cases from January 2011 to December 2015. These data came from the report of HIV/AIDS and ART Registry of the Philippines (HARP) under Department of Health. Univariate Box-Jenkins was used as the method for forecasting. The result shows that the monthly cases of HIV in the Philippines has an upward trend, it was observed that the highest peak was on June 2015 with 772 new cases. Satisfying the assumption of the said method, the researcher came up the best model base on AIC is log SARIMA (2,1,0) (0,0,1)[12] with drift.
Keywords: HIV/AIDS, Univariate Box-Jenkins, Time series Analysis, SARIMA

Binding of λ-carrageenan (a food additive) to almond cystatin: An insight involving spectroscopic and thermodynamic approach

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Abstract
Carrageenan is a high molecular weight linear sulphated polysaccharide, primarily used in food industry as gelling, thickening, and stabilizing agent. Almond milk prepared from almonds is low in fat, but high in antioxidants, energy, proteins, lipids and fibre. Purified almond cystatin was incubated with increasing concentrations of carrageenan at 250C for different time interval and significant loss in inhibitory activity was observed. Interaction between carrageenan and cystatin resulted in complex formation as depicted by the decrease in fluorescence intensity with increase in the concentration of carrageenan. Stern-volmer analysis of fluorescence quenching data showed binding constant to be $1.84\pm0.20 \times 10^4 M^{-1}$ and number of binding sites close to unity. These results were further confirmed by supporting results obtained in UV-visible spectroscopy. FTIR analysis shows significant shift in the peak intensity and this change clearly depict change in the structure of cystatin from that of α helix to β-sheet. CD spectra further confirmed the structural transition of the cystatin from α helix to β-sheet structure on interaction with increased concentrations of carrageenan. The contributing thermodynamic parameters were determined by ITC. The negative $\Delta H0$ and positive $T\Delta S0$ values suggest involvement of electrostatic forces and hydrophobic interaction in the formation of the λ-carrageenan-cystatin complex.
Keywords: Phytocystatin, λ-Carrageenan, Almond milk, spectroscopy, ITC

Isolation and purification of phytocystatin from almond: Biochemical, biophysical and immunological characterization

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Abstract
It is well known that fruit nuts contain wide variety of flavonoids and various proteins, consumption of which has been associated with the reduced risk of chronic diseases. Cystatins, a family of cysteine proteinase inhibitors, ubiquitously present in all cells serve various important and critical physiological functions. In this study a

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phytocystatin with molecular mass of 63.4 kDa was purified to homogeneity by a three-step process including ammonium sulfate fractionation (50–70%), acetone precipitation, and gel filtration chromatography on Sephacryl S100-HR column. The purified inhibitor migrated as single band under native and SDS-PAGE. The Ki values for purified inhibitor with papain, ficin, and bromelain were found to be 45.45, 83.33, and 90.9 nM, respectively, suggesting higher affinity of the inhibitor for papain as compared to ficin and bromelain. Phytocystatin was stable in broad pH and temperature range. Purified cystatin appeared to be antigenic as observed in western blot analysis. ITC assay data show a binding stoichiometry of 0.870 ± 0.03 sites for cystatin and papain interaction which indicated that cystatin is surrounded by nearly one papain molecule. FTIR, UV, and fluorescence studies showed significant conformational changes on cystatin–papain complex formation. Purified cystatin was found to possess 36.8% α-helical content as observed by CD spectroscopy

Keywords: Phytocystatin, almond, spectroscopy, kinetics, CD, FTIR, ITC

An Introduction to Lucas TrigonometricFunctions

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Abstract
This paper is inspired by the work of Robyn Minor Smith entitled \An
Introduction to Analytic Fibonometry" where she dened and construct
the Fibonacci functions and its series expansion in terms of Fibonaccisequence. Smith's paper arises with a new topic that our paper intro-duces. Using second order homogeneous linear di erential equation wehave generated the Lucas functions that came from the initial value prob-lem y" y0 y = 0 with initial value y0(0) = 2 and y(0) = 1. By theuse of Taylor expansion, power series expansion and test for convergence,we have created the series expansion for Lucas Trigonometric Functions and as we investigate its behavior, we have found that cosL(x), sinL(x),cscL(x) and cotL(x) have Lucas numbers. We also found that all func-

	tions are convergent
Mustapha Youbi **GICICRST1712057**	**Vegetation Dynamic In El-Ghorra Mountain, Northesat Of Algeria, Over The Last Millenium : A Paleo-Palynogical Approach** **Youbi Mustapha** **University ChadliBenjedid, El-Taref, Faculty Of Sciences, Algeria.** **Benslama Mohamed** **Soils And Sustainable Development Laoratory,Badji-Mokhtar University, Annaba. Algeria.** **LabarSofiane** **Soils And Sustainable Development Laoratory,Badji-Mokhtar University, Annaba. Algeria.** **Abstract** **The work deals with the reconstruction of a part of the vegetation history in Djebel El-Ghorra, a mid-altitude mountain located at El-Kala Natural Park in Northeast of Algeria. The study was imposed in view of the scarcity of paleo-ecological and paleo-botanical works in the region, particularly at the Park's mid-altitude mountains. Thanks to a pollen diagram obtained from the study of a core taken at an altitude of 1003 m which has been supported by three A.M.S. radiocarbon dates, it was possible to get new and valuable information about the dynamic of the local vegetation over the last millennium. At the end of the tenth century A.D., the deciduous oak forest would have undergone a phase of regression due to a local climate aridification coinciding with the Medieval Warm Period while herbaceous taxa dominated the landscape. A major expansion of the deciduous oak woodlands would have started between 750-850 BP lasting up to 200-100 BP corresponding to the final phase of the Medieval Optimum and the Little Ice Age periods. During this phase, the region would have benefited of a rainy and fairly mild climate allowing deciduous oak forests to expand along with Alnus;.the proliferation of the latter is regarded as a strong sign of a wet and humid environment. Thermophilous shrubs like Erica, Cistus as well as a better presence of Quercus ilex-type at the detriment of the deciduous oak is the main feature of the region's modern era which would have probably started around 200-100 BP, resulting in an increasingly dislocated and scattered deciduous forest leaving the place to mid-altitude maquis dominated by Erica and Cistus. These variations of Mount El-Ghorra mid-altitude vegetation over the last millennium are correlated with major climatic events that have shaped other regions in the Northern Hemisphere as well as in the Mediterranean region.** **Key words: Paleo-palynology, Vegetation dynamic, HumificationIndex, Last millennium climate.**
Shivaprakash Y.M **GICICRST1712058**	**Experimental Studies On Sic And Rice Husk Ash Reinforced Ammc**

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Abstract:
In this research work aluminum alloy with Cu (4.5%) as the major alloying element is used as the matrix in which SiC and Rice Husk Ash (RHA) are dispersed to develop a hybrid composite. The dispersion is done by the motorized stir casting arrangement. The composite is fabricated by varying the proportions of the reinforcements in the base alloy. The composite specimens were tested for density changes, hardness and the wear. The microstructure images showed a uniform dispersion of the reinforcements in the matrix and this resulted in higher strength to weight ratio. The increase in strength of the composite is probably attributed to the increase in the dislocation density. Also the abrasive wear resistance of the produced composite is found to be superior as compared to the matrix alloy because of the hard ceramic particles in the reinforcements.
Key Words: Rice Husk Ash, Hybrid composites, Silicon Carbide, Wear, Microstructure.

Time Series Analysis of the Consumer Price Index in the Philippines

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	Science Department of Mathematics and Statistics **Abstract:** Every individual is observing the behavior of the prices in the market. These process can help the individual to have a strategy in decision making for budgeting the everyday expenses. One of the indicators to determine the prices of the commodity in the markets is called the Consumer Price Index (CPI). According to the Philippine Statistical Authority-formerly National Statistics Office, CPI is an indicator of the change in the average retail prices of a fixed basket of goods and services commonly purchased by households relative to a base year. It is a major statistical series used for economic analysis and as a monitoring indicator of government economic policy. Moreover, CPI is most widely used in the calculation of the inflation rate and purchasing power of the peso. The researchers utilized the data came from the official website of the Philippine Statistical Authority from 2000 to 2015. The researchers also adopted the modern forecasting techniques called the Box-jenkins time series analysis. This is a method to form a mathematical model designed to forecast a time series. The researchers sought to find the best model using the said forecasting method from January 2015 to December 2017. The results shows that the plot of the Consumer Price Index of the Philippines. It can be seen that CPI is increasing with some fluctuation. In addition, the average CPI from 2000 to 2015 is 108.20 while the highest CPI in that span of time is 142.6 that happened December 2015 and the lowest CPI is 75.3 during January 2000. The analysis also include the testing of the stationarity of the data using augmented dickey fuller, error diagnostics and model adequacy. Finally, the researchers arrived the best mathematical model that can predict the future values of the CPI based on the AIC as criteria in selecting the best model is SARIMA(1,1,0)(1,0,0)[12] with drift. Keywords: Consumer Price Index, Banks, Philippine Statistical Authority, Univariate Box-Jenkins, Time series Analysis, SARIMA, Drift
OuriacheHadjerGICICRST1712060	**Treatment of petroleum hydrocarbons-contaminated soil by advanced chemical oxidation.** **OuriacheHadjer** **Laboratoire des Sciences et Techniques de l'Environnement (LSTE), EcoleNationalePolytechnique, 10 Avenue HassenBadi, Belfort, El-Harrach, Algeria.** **ArrarJazia** **Laboratoire des Sciences et Techniques de l'Environnement (LSTE), EcoleNationalePolytechnique, 10 Avenue HassenBadi, Belfort, El-Harrach, Algeria.** **Abstract** **Background: Remediation of soils polluted by petroleum hydrocarbons is a very interesting topic in environmental research, several techniques have been used and others are in development. Advanced oxidation technologies have**

received increasing attention recently, for their significant effectiveness on various recalcitrant organic pollutants destruction. Among these technologies, we are interested in Fenton-like oxidation because of its application at neutral pH favored for indigenous microorganisms' development for eventual biodegradation. Objectives: The present study aims to investigate the influence of hydrogen peroxide, iron zero-valent contents and chelating agent presence on petroleum hydrocarbons degradation efficiency by Fenton-like oxidation is evaluated. For this effect, we follow the temporal evolution of total petroleum hydrocarbons (TPH), the pH change, and the humidity was kept constant during the treatment period.

Methods: Our processing relates to abiotic systems, by varying hydrogen peroxide content and only based on the amount of iron that exists originally in soil , after choosing optimal hydrogen peroxide content , we set the hydrogen peroxide content and we varied the iron content , and finally the contents is fixed to hydrogen peroxide and iron and varying the content of the chelating agent (EDTA).

The reactors are under conditions of ambient temperature, neutral pH, protected from light to avoid photo- oxidation phenomenon and stirring of 150 rd/ min throughout the treatment. Conclusions: Degradation rate of total petroleum hydrocarbons (TPH) in the case of Fenton-like treatment by varying iron content, consequently ratio molar H_2O_2:Fe are between 21 and 40%. The optimal efficiency is obtained for a molar ratio H_2O_2:Fe of 15:4.The introduction of chelating agent in Fenton-like process in different ratios improves significantly TPH degradation efficiency, which reached 73%. A priori, chelating agent played an important role in maximizing iron catalytic activity.

Key words: Fenton-like, EDTA, petroleum hydrocarbon, soils remediation, advances oxidation

Raheem Akeem Ayinde **GICICRST1712061**	**A Study on Thermal Properties of Sawdust Ash Cement Concrete** **A. A. Raheem** **Department of Civil Engineering, LadokeAkintola University of Technology, Ogbomoso, Nigeria.** **K. O. Oriola** **Department of Agricultural Engineering, LadokeAkintola University of Technology, Ogbomoso, Nigeria.** **A. Ismail** **Department of Civil Engineering, LadokeAkintola University of Technology, Ogbomoso, Nigeria.** **Abstract** **Sawdust is a residual material resulting from the milling of timber into various shapes and sizes. The heaps of sawdust generated on a daily basis usually constitute environmental nuisance. Several studies had been carried out on the use of Sawdust Ash (SDA) as partial replacement for cement in**

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	concrete, but the thermal properties of SDA concrete has not been adequately investigated. In this study, the thermal properties of concrete produced from partial replacement of the cement content with SDA were investigated. Sawdust was collected from sawmill industry at Irewole area (8o40'N:3o24'E), Saki, Nigeria. It was burnt into ashes in an open metal container. The sawdust ash was analyzed for chemical composition using X-ray fluorescence analyzer. SDA concrete was produced by replacing 5, 10, 15, 20 and 25% by weight of cement with SDA. Thermal conductivity, diffusivity, resistivity and volumetric specific heat capacity were determined on concrete cubes specimens at ages 7, 28, 56 and 90 days, using KD2 Pro thermal properties analyzer. The percentages of silica, alumina and iron oxide obtained for SDA were 65.29%, 6.43% and 3.83%, respectively. Thermal conductivity of SDA concrete at 90 days at both air and oven drying decreased from 1.67 - 1.21 W/m3K and 1.63 - 1.19 W/m3K, respectively. Thermal diffusivity at air and oven drying decreased from 0.49 - 0.36 mm2/w and 0.54 - 0.37 mm2/w, respectively. Thermal resistivity at air and oven drying increased from 71.7 - 91.1 oC.cm/w and 83.4 - 102.6 oC.cm/w, respectively while the volumetric specific heat capacity at both air and oven drying decreased from 3.79 - 2.63 MJ/m3K and 3.19 - 2.18 MJ/m3K, respectively. Sawdust ash concrete exhibits good insulating properties. It is recommended for external walls, partition walls and floor screed so as to improve the thermal comfort of a building. Keywords: Sawdust ash, Pozzolan, Thermal conductivity, Thermal diffusivity, Thermal resistivity, Volumetric specific heat capacity.
RachidBenchouieb **GICICRST1712062**	**Approximate Model For Predicting Static Recrystallization Of Ferritic Stainless Steel Type 430** **RachidBenchouieb** **Research Center in Industrial Technologies (CRTI), P. O. Box 64 Chéraga 16014 Algiers, Algeria** **Abstract** **An approximate model for predicting static recrystallization of ferritic stainless steel type 430, in hot rolling is proposed. In this model, the effect of variables such as strain, strain rate, temperature and initial grain size were considered during hot rolling operations [1-5].A set of integrated mathematical models for predicting static recrystallization evolution during hot rolling has been developed through laboratory research work experiments. It consists of many sub-models such as percentage of recovery, recrystallization kinetics, time for 50 percent of recrystallization, recrystallized grain size and grain growth (Figure 1 and 2). Some of the most important theoretic basic approaches to describe the kinetics of primary recrystallization were first independently developed and comprehensive portrayed by Johnson and Mehl, Avrami as by Kolmogorov (Often named the JMAK-theory). The quantitative determination of the effects of these variables**

	obtained, analyzed and compared in the context of the recrystallization kinetics of this material. The predicted results agreed well with measured of laboratory tests (Table 1). Constitutive models based on semi empirical equations are compared to more sophisticated models based on cellular automata, vertex and Monte-Carlo-Potts methods [6-10]. Keywords: Ferritic stainless steel, Static recrystallization, Mathematical model, Hot rolling
Wenjing Wang **GICICRST1712063**	**Title: Novel amine impregnated graphene/SBA-15 composite with good stability for CO2 capture** **Wenjing Wang** **Department of Chemistry ,The University of Queensland, Australia** **Abstract** **Carbon dioxide (CO2) is the major greenhouse gas that makes the largest contribution to global warming. Worldwide research activities have focused on developing different types of physical and chemical adsorbents for CO2 capture. Amine functionalized mesoporous silica combining the merits of physisorption and chemisorption is one of the most promising materials for CO2 capture. However, due to the low thermal conductivity of mesoporous silica coupled with high adsorption heat of chemisorption, the thermal stability and cycle stability are severe issues that should be considered for practical CO2 capture. The introduction of graphene with superior properties, large theoretical specific surface area of 2630 m2 g-1 and excellent thermal conductivities, could be an effective way to solve the problem of stability. SBA-15 is a mesoporous silica, which has well-ordered hexagonal mesopore structure. However, to the best of our knowledge, the feasibility of graphene introduction to SBA-15 for CO2 capture need further explore. In this work, novel nanocomposites of graphene(G) /SBA-15/hyperbranched polymer(HBP) were synthesized and texted as CO2 adsorbent. A capacity of up to 1.50 mmol g-1 was obtained by G/SBA-15/HBP (50), indicating the presence of graphene within the system increased the capacity of conventional SBA-15/HBP to adsorb CO2 by 51.51%. SEM images and N2 sorption analyse indicate the introduction of graphene reduced the agglomeration and HBP could disperse more evenly into G/SBA-15. What's more, G/SBA-15/HBP (50) was relatively stable for 10 thermal cycles. The presence of graphene in the nanocomposite efficientlystabilizes HBP, improving cycle stability and adsorbent longevity.** **Keywords: CO2 capture, mesoporous silica, graphene, amine functionalization**

**NseAbasiNsikakAbasiEtim
GICICRST1712064**

Meat quality attributes of west african dwarf rams administered with aqueous african marigold plant (aspiliaafricana) extract

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Abstract
This study was conducted to determine the sensory and chemical attributes of West African Dwarf rams administered with aqueous Aspiliaafricana extract. Twenty four (24) rams aged 6-9 months with average weight of 4.65kg were used for the study. The experiment was in a Completely Randomized Design (CRD) of four (4) treatment groups with six (6) rams per treatment. Each treatment was replicated 3 times with 2 rams per replicate. Rams in treatment 1 (control) received 10ml of distilled water, T2 were administered with aqueous Aspiliaafricana extract at 1000mg/kg body weight, T3 received 2000mg/kg BW and T4 received 3000mg/kg BW. Rams in all the treatment groups were fed 2kg of forages and 500g of the same concentrate diet daily. The extract was administered for 64 days after which four (4) rams per treatment group were slaughtered for meat quality evaluation. Results for proximate composition (%) of meat from the loin revealed that the values obtained increased with increase in the dosages of the extract. Highest significant mean values were recorded for T4; 29.91, 37.55, 10.34 and 4.56 while the lowest mean values of 25.58, 32.58, 9.06 and 4.37 were recorded for T1 (control group) for dry matter, crude protein, fat and ash, respectively. Panelist rated the meat to be similar in colour, while values for flavor, texture, juiciness, tenderness and overall acceptability significantly increased with increase in the dosages of the extract and lowest values were obtained for T1. Meat pH varied significantly; T4 had the highest mean value (5.79) while T1 had the lowest (5.41). The high and significant increase in sensory and chemical attributes of meat from rams administered with aqueous Aspiliaafricana extract is an indication that Aspiliaafricana could improve meat qualities and its overall acceptability.
Keywords: Forage, mutton, protein, sensory evaluation.

**Oko Emmanuel Chukwuma
GICICRST1712065**

Evolution of nutritional potentials of toasted Afzelin Africana seed meal in broilers diet

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Abstract
An experiment was conducted to evaluate nutritional potentials of toasted Afzeliaafricana seed meal as feed ingredient on performance, carcass characteristics and blood profiles of broiler finishers. The proximate Analysis, phytochemical and amino acid profiles of the toasted

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Afzeliaafricana was carried out and the seed meal was used to formulate four experimental diets at levels of 0%, 5%, 10% and 15% for treatments 1,2,3 and 4 respectively on a 35 days feeding trials. One hundred and twenty brooded four weeks old broiler chicks were assigned to each treatment diets at 30 broiler chicks per treatment and were replicated three times to 10 broilers per replicate in a completely randomized designed. The proximate results indicated a moisture level of 6.2%,the crude protein content was 28.7%, crude fibre 5.3%, Ether Extractive 12.5%, Ash 2.9% and Nitrogen free extractive 50.6% on dry matter basis. The phytochemical components were Tannin 8.01%, Saponins 5.4%, alkaloids 1.3%, flavonoids 11.8%, cardiac glycosides 2.4%, oxalate 8100mg/100mg, phytate 0.157% and no level of phenol recorded on dry matter basis indicating toxic levels of these components. The amino acid profiles revealed the presence of all the amino acids. The performance of the broilers showed a drop in the average final weight of the broilers 2448.6g, 2073.33g, 1930g and 1477g for treatments 1,2,3 and 4 respectively. The feed intakes were reduced to 181.3, 200, 154.67 and 116.67grams per bird per day for treatments 1, 2, 3 and 4 respectively. Average daily weight gain were 44.10, 33.41, 29.43 and 16.31 grams per day for broilers in treatments 1,2,3 and 4 respectively and the feed conversion ratio decreased as the levels of the toasted Afzeliaafricana seed meal increased in the experimental diets. There was mortality recorded in treatments 3 and 4 attributed to the toasted Afzeliaafricana seed meals and carcasses were poor with observable Haemorrhages, extensive liver damage-darkened liver, brittle liver, pin point nodules on the liver and swollen and licking bile. The Blood profiles revealed marked anemia with poor bone marrow function. All the hematological parameters were below normal ranges. The blood chemistry indicated evidence of liver damage co-existing with cardiac disease and salt depletion linked up with shock or intestinal obstruction. Afzeliaafricana resulted to extensive deleterious effect on the broilers and should not be used unless further studies on the Detoxification of the toxic phytochemical components are affected.

KEY WORDS: Amino acid profiles, Broiler finisher birds, hematological assay, phytochemical analysis, Toasted Afzelia Africana seed meal

NkamaAmadiEkumaGICICRST1712067	**Glass halt concrete production using stone dust as a filler through trial mix design.**
	NkamaAmadi E. **School of Engineering TechnologyTransportation LaboratoryCivil Engineering Department** **AkanuIbiam** **Federal Polytechnic, UnwanaAfikpo, Ebonyi State of Nigeria** **Abstract**

	Various studies have shown that waste glass has been crushed and screen and can serve as an alternative replacement of fines and coarse aggregate when mixed with Bitumen to form a glassphalt concrete which can be used in landscaping or non-load bearing walls in a building. This researched work was intended to compare and analyze the hot mix glassphalt (HMG) and the strength of asphalt concrete using trial mix design through investigative of their performances. The mineral fillers with different percentage by total weight of the mixture used in the study were crushed igneous rock that passes from 0.075mm to 200mm sieve sizes. However, this production did not only establish the usage of glassphalt but also analysis grade of bitumen like 60/70, 30/40, 80/100, 180/200 etc, its sustainability for various road uses either for priming eg. MCI, tackcoateg. RSI, or surface dressing e.g S125. Various tests were conducted like water absorption test, marshal stability test, void ration test etc. using bitumen grade 60/70 which has a flash point of 250oc and a melting point of 48 – 56oc. Different types of glassphalt concrete was classified: Macadam, Binder course and wearing course with experimental design to determining the maximum deformation load that will deform the glassphalt concrete to aid in predicting its design life span and equally makes necessary recommendations. Keywords: Bitumen, Glassphalt Concrete, Production, Design Life, Trial Mix,
Willy Gayo **GICICRST1712068**	**Forecasting financial index of the Philippines** **Mr. Willy Salazar Gayo** **Polytechnic University of the Philippines, Sta. Mesa, Manila, Philippines** **Abstract** **Financial Index (FIN) is one of the stock indices in the Philippine Stock Exchange (PSE). Historical data of FIN from 2013 to 2016 was utilized. Weighted Box-Jenkins Methodology (WBJM) was used to determine the best model in forecasting FIN. Least squares method was used to estimate the weight of each component stock. Also, each component stock of FIN was modeled and forecasted using Box-Jenkins Methodology. Lastly, FIN was also modeled and forecasted using Box-Jenkins Methodology (BJM). Forecasts of FIN using WBJM and BJM were compared. Results showed that WBJM outperformed the BJM since it gave the smallest MAE, MAPE, MSE and RMSE.**
ArunkumarArulappan **GICICRST1712071**	**Efficient VNF Service Chaining in Datacenter Networks** **ArunKumarArulappan** **Research Scholar, Department of Computer Technology, Anna University** **Gunasekaran Raja** **Associate Professor, Department of Computer Technology, Anna University, Chennai, India**

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Abstract

Network Function Virtualization (NFV) usually moves the network functions from physical hardware appliances to virtual machines. Customization of own services led by users through Network Functions Virtual Machines (NFVM) by setting ordered traffic paths. The extra load on switches has a transitional uplift in bandwidth utilization and also efficiency gets affected due to the significant placement of Virtualized Network Functions (VNF). Flow rules in switches and ping pong traffic among VNFs get increased rapidly due to the suboptimal placing of VNFs in service chains. In cloud Infrastructure, the enterprises deploy their middle box services for easy management, flexible scalability and economic savings. However, existing elastic virtual network function(VNF) placement strategy often leads to an unpredictable placing location due to the ever-changing workload, which may waste much precious bandwidth resource and bring a lot of VM operation overhead(e.g. VM launch, termination and migration). VNF instance scaling happens due to the ever-changing workload in datacenter, which brings considerable VM operation overhead [16]. In contrast to prior solutions, we propose Accurate VNF (AVNF) placement where tenants specify various multiple bandwidth requirements between VNFs in their service chains for different periods [14]. Thereby we guarantee the required bandwidth and allocation of VNF instances into datacenter based on the AVNF placement [23]. By proposing this algorithm, we can solve both the VNF instance placement and scaling problems which saves much network resource. As of the placement principle, we have used an on-line heuristic algorithm to allocate various VNF instances effectively which resulted in achieving minimum overall bandwidth occupancy, VM usage and migration overhead [22]. To achieve the optimal placement we provide an off-line programming based algorithm where scaling of resources happens in a unified way.

Keywords :NFV, Datacenters, VNF-SC, ping-pong traffic

Using Outdoor Learning Spaces (Ols) Model In Promoting Student Understanding Of Ecological Concepts

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Using Outdoor Learning Spaces (Ols) Model In Promoting Student Understanding Of Ecological Concepts

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Abstract
This mixed method research primary aimed to explore the use of Outdoor Learning Spaces (OLS) model in

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	promoting student understanding of ecological concepts: biodiversity and interactions. Using the expansion component mixed method research design as the main research design, the quantitative part of the study utilized the Solomon-four-group research design while the qualitative study used grounded theory research tradition. Data sources primarily include pre-, post-, and post-posttest scores, gain scores, journal entries, and the teacher-researcher's reflective, methodological, and personal notes. Quantitative data were analyzed using t-test, ANOVA, ANCOVA and General Linear Model (GLM) Univariate analysis. The qualitative data were analyzed using template analysis style and the basic approach of comprehending, synthesizing, theorizing and decontextualizing to identify themes, search for patterns among themes, variations in the data and integrating thematic pieces. Findings revealed that learning the ecological concepts using outdoor learning spaces is more effective than classroom setting approach. However, both Outdoor Learning Spaces (OLS) model and Classroom Setting Instruction (CSI) were not particularly effective in promoting retention of conceptual understanding of ecological concepts: biodiversity and interactions. Despite some challenges related to time, weather, and safety management posed by outdoor learning spaces, it offered more teaching and learning incentives on the part of the teacher and the students. Students' over-all level of understanding of ecological concepts: biodiversity and interactions has significantly improved. The statistical analysis has revealed a significant difference between pretest, posttest and post-posttest results. Hence, the OLS instruction has facilitated students' conceptual understanding and retention of learned ecological concepts.
Samia Ashraf **GICICRST1712073**	**Speaker Accent Identification For Kannada Language Using Speech Features** **Arpitha** **Department Of Computer Science And Engineering, Srinivas School Of Engineering, Mangalore, Karnataka, India** **Nishmitha R** **Department Of Computer Science And Engineering, Srinivas School Of Engineering, Mangalore, Karnataka, India** **Pratheeksha** **Department Of Computer Science And Engineering, Srinivas School Of Engineering, Mangalore, Karnataka, India** **Samia Ashraf** **Department Of Computer Science And Engineering, Srinivas School Of Engineering, Mangalore, Karnataka,**

	India **Swarna H R** **Department Of Computer Science And Engineering,** **Srinivas School Of Engineering, Mangalore, Karnataka,** **India** **Abstract** **This work is concerned with employing speech features in developing an automatic accent identification system. Special speech features such as MFCC (Mel Frequency Cepstral Coefficient) are used in the process. MFCCs are used for representing the spectral features. In this paper, three prominent dialects of Kannada are considered for the identification task. Speech is collected from speakers belonging to three different regions, namely, Bengaluru, Mangalore and North Karnataka. Speech database considered for this study consists of spontaneous speech spoken by male and female speakers. The classifier used in this system is Gaussian Mixture Model (GMM).** **Keywords— Log probability, MFCCs, Prosodic features, Spectral features**
Iheoma M AdekunleGICICRST1712078	**Assessment of photosynthetic pigments in a crop grown in spent oil-based drilling mud, remediated using a novel and ecosafe technology,** **(CNB-Tech), a measure of plant safety** **I.M. Adekunle.** **Department of Chemistry, Faculty of Science, Federal University Otuoke, Bayelsa, Nigeria** **P.O.Iniaghe.** **Department of Chemistry, Faculty of Science, Federal University Otuoke, Bayelsa, Nigeria** **E.O. Odokwo** **Department of Chemistry, Faculty of Science, Federal University Otuoke, Bayelsa, Nigeria** **I.U. Isaac.** **Department of Chemistry, Faculty of Science, Federal University Otuoke, Bayelsa, Nigeria** **R.A. Ukpe.** **Department of Chemistry, Faculty of Science, Federal University Otuoke, Bayelsa, Nigeria** **A, R. Isaac** **Department of Chemistry, Faculty of Science, Federal University Otuoke, Bayelsa, Nigeria** **L. U. Ejigini** **Department of Chemistry, Faculty of Science, Federal University Otuoke, Bayelsa, Nigeria** **Abstract**

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In this study, an innovative eco-safe technology (CNB-Tech) was used to convert toxic, spent oil-based drilling mud (SOBM) to re-useable soil (ROBM) at ambient temperature. The safety of crops grown using the re-useable soil was investigated with a green leafy vegetable (Fluted pumpkin; Telfiariaoccidentalis) as an indicator crop. The impact on the photosynthetic process was assessed using total chlorophyll (Chab), chlorophyll-a (Cha), chlorophyll-b (Chb) and carotenoid (Car) concentrations in the leaves. The effect of priming ROBM with a customized conditioner (SCD) was also investigated at ROBM-SCD ratios 1:1, 1:2 and 2:1. SOBM and soil sample from neigbourhood (OFS) farm served as primary and secondary controls respectively. Pigment concentrations were anyalysed via UV-Visible spectroscopic methods. Control and test samples were also analyzed for total petroleum hydrocarbons (TPH), electrical conductivity (EC) and pH, following standard procedures. Results showed that the pigment concentrations were comparable with values obtained in normal soils for the same crop. Total chlorophyll-carotenoid coefficient ≥ 1.0 and the absence of chlorosis confirmed absence of damage to plant photosynthetic process. In all cases, ROBM-SCD 1:1 gave the least performance while ROBM-SCD 1:2 or 2:1 excelled over OFS by 41.04 to 95.68%. Study revealed that the use of spent oil – based mud transformed to re-usable soil at ambient temperature is excellent for vegetable crop production without putting plant health at risk. This is a contribution to low-tech, eco-safe and effective techniques in the handling, treatment and safe re-use of the remediation end product of spent oil-based mud.
Keywords: Waste management, drilling waste, remediation, crop production and safety.

AnasShehuGICICRST1712080

Improving the Sensitivity of Thermoluminescence dosimetry by the use of Optical fibers

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Abstract
In this particular research, this paper is trying to describe how to improve the sensitivity of thermoluminescence dosimetry by using commercially doped silica optical fiber to Ge neutron radiation. the consideration of dosimeter herein is based on the need for dosimetry of biological tissues. The Ge and doped-fiber were irradiated with

62MeV proton beam which lead to the achievement of how proton loses distinguished energy through the penetrating depth.

Lighting Design For The Aging Eyes

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Lighting allows users to accomplish their tasks, feel safe and understand the surrounding environment. Therefore, it is an inseparable component of buildings. Building codes, energy standards and regulations determine the required illuminances to provide visual comfort. However, the existing requirements are constituted considering healthy eyes only. Different visual comfort requirements for people with visual disabilities, in particular for elderly people, are not clear. In fact, the illuminance requirements show great difference for elderly people. For instance, an average 60 years old eye requires three times more illuminance than an average 20 years old eye. Therefore, a lighting design that complies with the regulations may not satisfy elderly users' needs.

The world's older population continues to grow remarkably. The increasing share of population of older people requires increase of awareness. In this study, technical lighting information has been offered to obtain visual comfort in living spaces occupied by elderly. Such information is critical for lighting design yet not sufficiently covered in literature. For that reason within this study, different visual requirements of each space type are emphasized to promote accessible design.

Keywords: Lighting Design, Aging Eyes, Lighting for disabled, Accessible design, Design for Elderly

"The Effect of Using the Story-Mapping Technique on Students' Comprehension of Narrative Elements"

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GICICRST1712082

The present research aims at investigating the effect of using the story-mapping technique on students' comprehension of narrative elements in the literary reader.To achieve the aim of the research, a null hypothesis was posed. To examine the validity of this hypothesis, a sample was chosen from the fifth scientific grade students from Abdul-Rahman Al-Gafiqy preparatory school for males. It consisted of (63) students distributed into two groups. The first group, i.e. the experimental one consisted of (30) students, whereas the control one consisted of (33) students. Equating procedures were used to equalize the two groups in several non-experimental variables. The Quasi experimental design pretest posttest control group design was employed in the research. The experimental group received the treatment

	in the form of story-mapping technique, whereas the control group was taught by the currently used method, namely the audiolingual method. The researchers have prepared the main requirements of the study such as specifying the teaching materials, formulating the behavior objectives, and preparing the lesson plans for both groups of the research. The present research has required the preparation of two tools to measure students' prior knowledge and students' achievement. The researchers designed a test to measure both students' prior knowledge and students' achievement. The application of the experiment began on Thursday (27/10/2010) and ended on Thursday (3/5/2012), i.e. it lasted (28) weeks; (1) lesson a week for each group to be the sum total of (24) lessons. After collecting and analyzing the data by using the T-test, the results indicated that: There is a statistically significant difference between the mean scores of the experimental group and those of the control group in the achievement posttest. In the light of the results obtained, a number of recommendations and suggestions are put forward.
Dr. ManojSahni **GICICRST1712083**	**Effect on Strength of Rotating Functionally Graded Annular Disc with Linear variation in Thickness and Young's modulus** **ManojSahni** **Department of Mathematics, Gandhinagar ,PDPU ,Gujarat, India** **RituSahni** **Department of Mathematics, IAR, Gandhinagar Gujarat, India.** **Abstract** The paper discusses about the analytical study of an annular disk with thickness and Young's modulus varying in a linear way. It is seen that with the linear variation in thickness and Young's modulus profile, there is a significant effect on the stresses and strains. The effects of internal and external pressure on the strength of annular rotating disk are also studied under variable thickness and moduli and the results are also compared with those available in literature for constant profile. In this study, closed form solutions are obtained. The solutions that are obtained are discussed numerically and graphically. Keywords: Rotating disk, Thickness, Young's modulus, Stresses, Strains.
Chime Anthony **GICICRST1712086**	**Evaluation of water quality requirement for irrigation and fish farming purposes (a case study of Obina river)** **Chime Anthony** **Department of Agricultural & Bio-Environmental EngineeringInstitute of Management and Technology (IMT), Enugu** **Echefu F Emeka** **Office of Desk Officer TETFUND**

Abstract

The major environmental issues of our time are the growing concern about the water quality suitable for use by humans and animals. It is a known fact that the water quality condition is constantly being threatened by pollution. Water as an important natural resource, influences human settlement patterns, agricultural activities and citing of industries. Running waters are exploited to supply irrigation, aquarium and drinking water, generate electricity, and receive wastes. Uzo-Uwani is endowed with a network of Rivers that encompasses variety of water requirement of the area. However, with the rapid increase in the population of people in the area and the need to meet the challenges of irrigation and other water usage, the available water quality has deteriorated. Water samples from Obina River in Uzo-uwani LGA, Enugu, Nigeria, were analyzed to assess its suitability as a source of water for irrigation and fish farming purposes. The water quality criteria studied based on physical, chemical and biological properties of water include temperature, turbidity, total suspended solids (TSS), total dissolved solid (TDS), nitrate- nitrogen, pH, biochemical oxygen demand (BOD) and total hardness. The results of the analysis compared with International standards revealed that the River temperature of 26.980C, pH of 8.45 and nitrate-nitrogen value of 3.11 mg/l fall within the acceptable range for fish farming. However, the total suspended solids of 36.35 mg/, total hardness of 14.80 mg/l, total dissolved solids of 0.04 mg/l and biochemical oxygen demand of 39.37 mg/l all differed slightly from the standard recommended values. This study will aid crop and fish farmers on the necessary treatment needed to effectively use water from this source for irrigation and fish farming.

Keywords: Water quality criteria, Obina River, biochemical oxygen demand, total suspended and total dissolved solids.

RathodAravindGICICRST1712087	**Catalyst-Free Synthesis of Novel 6-phenyl-6H-chromeno [4, 3-b] quinolone derivatives at RT: Their further structure evaluation leads to potential anti-cancer agents.**

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	Abstract A variety of novel quinoline derivatives (6-phenyl-6H-chromeno [4,3-b] quinoline) have been prepared by using 4-chloro-2-phenyl-2H-chromene-3-carbaldehyde and various substituted of aromatic anilines as starting materials. This is the first example on the preparation of quinolines through this novel method. And the resulting quinoline derivatives further structure evolution is leads to an anti-cancer agents. Our preliminary data of model compound (7i) on three cancer cell lines (B16F10, MCF7 and A549) suggested decent anticancer activity on two cell lines (B16F10 and MCF7) with IC50 values of 14.8 and 21.32 μM, respectively. This method is operationally simple and works with a diverse range of substrates. Keywords: Quinolines, Chromene-3-carbaldehyde, Aromatic Anilines, Catalyst-Free.
AbeerAbdAlhameed Mahmood Al Sallami **GICICRST1712088**	**Implications for Disaster Management of the Evaluation of the Environmental Damages, in Application of Remote Sensing** **Hussein Al-Tameemi** **School of Engineering & Informatics- Sussue University** **Prof. Chris Chatwin** **School of Engineering & Informatics- Sussue University** **Abeer Al-Sallami** **Faculty of Engineering/ Electrical Dept- University of Babylon** **Abstract** Developing effective strategies to reduce the risk of

	environmental disasters in the communities' habitat is essential, as this can cause extensive losses in the economy and society. So, it is important to utilise remote sensing in developing such strategies effectively. Thereby enhancing the ability to implement 3D virtual reality using the data from satellite images of the study region (Iraq). Evaluation of the implications for disaster management and assessment of the environmental impacts by using digital processing techniques with 3D GIS, via satellite images of Iraq. The research contributes to environmental protection by analysis and evaluation of the satellite images especially in the transition years after 2003. The research study identifies strategies to mitigate and avoid environmental damage and enhances resilience to natural disasters. That is done, through the inclusion of current scientific recommendations, to improve the effectiveness of the direct response systems of the public administration service, and to record and evaluate environmental changes.
Moses AnayoMbahGICICRST1712090	**On Some Combinatorial Results of Collapse in Partial Transformation Semigroup** **Mbah Moses A** **Department of Mathematics, Federal University Lafia P.M.B 146 Nasarawa State, Nigeria.** **Abstract** **In this paper we studied the semigroup of partial transformation and investigated the elements of collapse given by we obtain formular for the total number of collapsible elements for $\|t\alpha^{-1}\|=2$ and $\|t\alpha^{-1}\|=3$ in P_n Keyword: Collapse, Idempotent, Nilpotent, Partial transformation, Semigroup,**
IsmaílAbdullahiDogonyaro GICICRST1712091	**Adsorption Characteristics of Dye Effluence on Activated Carbon Generated for Millet Husk Produced by Chemical Thermal Process** **IsmaílAbdullahiDogonyaro** **Senior Lecturer,Chemistry Unit, Department Of Science And Laboratory Technology, College Of Science And Technology,Umaru Ali Shinkafi Polytechnic,Sokoto - Nigeria** **Asmaú B. Bagudu** **Umaru Ali Shinkafi Polytechnic Sokoto-Nigeria** **Abstract** **Potassium hydroxide (KOH) and Zinc Chloride (ZnCl2) are used as activating agent to generate activated carbon from millet husk, using one step method. The data generated were fitted into adsorption Isotherm whose constants were used to study the adsorption capacity and intensities on dye effluent and the surface energy of the activated carbon obtained. Result generated during the analysis revealed that the adsorption of dye effluent is best model by Langmuir isotherm than it does for Freundlich**

	isotherm. The result defined adsorption to be monolayer. This is so, because from the result the value of adsorption capacity Qo and surface energy "b" revealed to be higher for ZnCl2 treated (to 10 min) i.e. Qo = 125 with corresponding "b" value and -0.38. This shows that the monolayer adsorption capacity is directly proportional and is a function of the surface energy. Key words: Activated carbon, Adsorption, Effluent, Isotherm, Monolayer and Millet husk
Dominic SumaryGICICRST1712093	**The Hidden Perception about the Technician Profession in Science and Laboratory Technology: Survey at St John's University of Tanzania** **Dominic ParmenaSumary** **Faculty of Natural and Applied Sciences ,St John's University of Tanzania** **Dodoma, Tanzania** **Abstract** In Tanzania, the technician profession in Science and Laboratory Technology (SLT) has been dormant for quite some time. Little emphasis has been placed on SLT since the transformation of technical schools into A-level schools and colleges into universities or university colleges. This has led to science teachers or graduates being recruited as substitutes to professional technicians. The primary objective for a technical college is to train professionals who are skill based, unlike science teachers or graduates who are more knowledge based. An investigation of students' perceptions of technicians in science and laboratory technology (SLT) was conducted via questionnaires using a cohort study for 33 students who admitted through the NACTE Central admission systems 2015/2016. The findings show that technician professions are perceived to be suitable for males compared to females, as observed from the enrolment, which included only 18.2% females. For career demands, 57.6% of the respondents said that technician professions in science and laboratory technology are highly skilled careers, whereas 33.3% said these careers are challenging. Using multiple selections, we investigated the participants' knowledge on career futures in SLT and observed that 63.6% of the respondents chose a career in the food and beverage industries, 54.5% were interested in pharmaceutical industries, as well as health-related research, and 45.5% of the respondents chose college & universities, whereas 36.4% chose secondary schools. Other areas that were chosen included material development industries (18.2%), agricultural sciences (12.1%), and environmental sciences (9.1%). This survey indicates that there is a gap among existing technical professionals, the education system, and students when choosing a career in science and laboratory technology. The students need a basic education and sensitization to the role of technician in science as part of the national development strategies and priorities.

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	Keywords- Technician; Tanzania; Science and Laboratory Technology.
Hajera FatimaGICICRST1712096	**Healthy Aging Through Nutrition: Young Brain** **Hajera Fatima** **St Anns College, Osmania University, Hyderabad, India** **Abstract** **Today there is an increase in depression, stress, psychological disorders in women. Many factors contribute to the mental illness which eventually leads to psychological disorders. The various aspects which solve this problem and also the etiologies are included.Antioxidants: Possible relation of consumption of dietary antioxidants with memory and Alzheimer's disease, depression, diabetic neuropathy. Serotonin: A neurotransmitter and a contributor to the feeling of wellbeing and happiness. How abnormal levels of serotonin cause neurobehavioral disturbances. Amygdale: Part of brain, involved in decision making and emotional reactions. The involvement of Amygdale in the social networks and its complexity in one's life and the dietary changes for proper functioning. Nutrition: Vitamin-K, B12, Zinc, Phosphorus are involved in the mental wellness of the mother and fetus. How a deficit of this effects the mental development of the infant and mental stability of mother. Vitamin –E: A fat soluble vitamin, acts as an antioxidant. How Vitamin E and Vitamin C work synergistically to eliminate a psychological disorder especially Alzheimer's disease.** **Neurotransmitters: They are chemical messengers that enable neurotransmission. Requirement of Thiamine - Vitamin B1 for the wellbeing of neurotransmitter (which consecutively leads to healthy functioning nervous system). Toxins: With pollution a woman runs a higher risk of pre term delivery. Such babies would have poor development of brain. The diet for mother which minimizes the effects of pollutants on the baby. Tryptophan: An amino acid involved in signaling which benefits the brain. Possible psychological changes encountered due to consumption of Tryptophan Fats: Relation of fat with menopausal irritations, depression, and aggressive behavior. How obesity contributes to mental sickness especially depression Neuroinflammation: Inflammation of the nervous tissue. How diet can be used as a weapon against it.**
Prof. Rosalie-Anne GICICRST1712097	**Value-at-Risk : Human Immunodeficiency Virus (HIV) in the Philippines** **Hero L. Tolosa** **Polytechnic University of the Philippines, College of Science** **Department of Mathematics and Statistics** **Rosalie-Anne M. Mangahas** **Polytechnic University of the Philippines, College of Science** **Department of Mathematics and Statistics**

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Abstract

Human Immunodeficiency Virus (HIV) is the one of the threatening illness that cannot be cured as of this moment. The immune system of the person having HIV will attack and this can lead to "immune deficiency", which destroy the function of immune system. The HIV can be transmitted through transfusion of infected blood through the use of needles, unsafe sexual intercourse, syringes and other objects, and mother having HIV positive can be transmitted to her infant during pregnancy or even breastfeeding. The first AIDS case in the Philippines was reported in 1984. From January 1984 to April 2017, there has been 42,912 HIV Ab sero-positive cases reported to the HIV/AIDS and ART REGISTRY OF THE PHILIPPINES (HARP). Ninety-one percent (38,871) of the total reported cases were asymptomatic at the time of reporting. Ninety-three percent (39,932) were male and 2,969 (7%) were female. The median age was 28 years old (age range: 1 year-82 years). More than half (22,039 or 51%) were from the 25-34 year age group while 11,740 (27%) were youth aged 15-24 years (Figure 5). The new HIV/AIDS infected persons in the Philippines were reported monthly by the Department of Health (DOH) HIV/AIDS and ART Registry of the Philippines (HARP). According to World Health Organization last 2015, Philippines has the lowest rate of infection yet is the fastest growing number worldwide. One of the objective of this study is to create best statistical model that can predict the number of HIV cases per month. This process can help the government to prepare the needs for temporary remedy and pursue the awareness campaign of HIV cases. The researcher gathered time series data which is monthly HIV new cases from January 2008 to April 2017. These data came from the report of HIV/AIDS and ART Registry of the Philippines (HARP) under Department of Health. The researcher used the modern forecasting mean and forecasting variance to compare which is better and to have a decision about the cases of having HIV. The result shows that the monthly cases of HIV in the Philippines has an upward trend, it was observed that the highest peak was on March 2017 with 968 new cases. Satisfying the assumption of the said method, the researcher came up the best model base on the MAPE is ARIMA d (3, 1, 11) GARCH (1,1).

Keywords: HIV/AIDS, Univariate Box-Jenkins, Time series Analysis, ARIMA, ARCH, GARCH

Emmanuel KengneGICICRST1712098	**Bioheat transfer in a human limb under a heat source of constant density power** **Emmanuel Kengne**

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Abstract:
A two dimensional Pennesbioheat transfer equation in polar coordinates that describes temperature distribution in different layers of peripheral tissues of human limb is considered. Using the method of modified Bessel functions and applying a heat source of constant density, we derive the exact analytical solution of a bioheat transfer problem associated with the model under consideration. The obtained analytical solution is used to analyze temperature distribution inside the different layers of a human finger. The effects of the heat transfer coefficient on the temperature profiles inside different layers of the human finger are investigated.
Keyword: Pennesbioheat transfer equation; modified Bessel functions; Mathematical model; Cancerous tumors.

IklilSulaiman **GICICRST1712100**	**"Educative Based Painting with the Application of Water Resource Conservation Pressing for Severe Physical and Quality of Watershed"** **IklilSulaiman** **Public Health Faculty,Jember University,Jember, Indonesia** **NabighJabbar** **Public Health Faculty,Jember University,Jember, Indonesia** **Abstract** Watershed management is an attempt to manage the interrelationships between natural resources, especially vegetation, soil and water with human resources in the watershed, and all its activities to get an economic benefits and environmental services for the sake of development and preservation of the watershed ecosystem. Its principally land use regulation or optimization of land use for various purposes rationally and other practices that are environmentally friendly so it can be assessed by key

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indicators (ultimate indicator) the quantity, quality and continuity of the flow of the river at the point of spending (outlet) basin. So one of the characteristics of a watershed is the biophysical linkages between upstream and downstream areas through the hydrological cycle.

Due to the the increasing problems of the watershed to be solved in an integrated manner with the involvement of various sectors and areas of government administration as well as requests from various stakeholders, the strategies to achieve the goal of watershed management in general is to improve the organization of watershed management by all interested parties both at the government, local government, private and community sectors. The strategy is made in a form of innovation of educational-based paint where innovation is made with attention to aspects of management that are raw are the main aspects (planning, establishment or organization, implementation, control, monitoring and evaluation), which will be the development by the method of painting in order to avoid, watershed damage and can be used for watershed maintenance strategy as Natural Resources sustainable.

Keywords: Watershed management, educative, river, painting.

Eco hydrology as a new paradigm management sustainable management of water resources for preservation river citarum

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Abstract

As an important component in life, the presence of water has been properly maintained and preserved. Water conservation rules must be followed in daily life so that it can take up water conservation until the future. Citarum River as one of the greatest potential for water saving in West Java is a great potential for the community, both the potential benefits and potential harms. Unfortunately, the people and governments tend to be lulled by the potential benefit of Citarum river, and unwittingly increase the potential harm from the river. The reduced area of land conservation, the density of residential areas, river pollution by domestic and industrial wastes, and others cause disasters such as floods, droughts, and landslides. This is a problem that must be resolved jointly between the government and society. Coordination, division of responsibilities, communication and harmony between the two is believed to solve complicated problems that occur in the Watershed Citarum. Ecohydrology is the study on the interaction hydrological process or aquatic with biological dynamic spatially and temporarily. Ecohydrology promises

	to be a tool of the sustainable use of aquatic resources by ecological analysis integrated with freshwater aquatic conservation. Methodologically, ecohydrology is a management tool using organism to control hydrological process and using hydrology to control biota. Basically, ecohydrology is water resource development that oriented on the capacity and ability to maintain it. Spatially, it requires an understanding about the role of organism. Temporarily, it requires reconstruction on the paleohydrology as a base of the water resource development that put global changes into account. Based on the successful implementation of ecohydrological concept on Saguling Reservoir, it able to be implemented for another aquatic ecosystem. Keywords : ecohidrology, sustainable management, wathershed, river
Rasha SayedGICICRST1712102	**Living sustainable shorelines as a mitigation tool for Sea Level Rise** **Rasha Sayed Mahmoud** **Faculty Of Engineering, Architecture Department Cairo University** **Sarah Mohamed Abdallah El Chafei** **Teaching Assistant,ModernScience and Arts University,Egypt** Over the last decades, the world has been facing a group of challenges and crisis. Problems like droughts, gradual loss of natural resources, land deformation and sea level rise, are pushing and stressing strongly especially on the urban scale. Accordingly, all these problems and impacts will obviously have a great impact on the behavior of diverse creatures. In Egypt, as one of the most vulnerable countries to climate change impact, the Nile Delta and other deltas soon will be threatened by the SEA LEVEL RISE Phenomenon. Scientific studies and experiments, such as managing realignment of urban settlement and offshore live flora and fauna are targeting futuristic development assessment. The problem is in the way of thinking and methods of applications that architects, planners, and developers initiate. In this paper, a framework will be introduced offering tangible solutions in tide timeline and addressing different development possibilities of shorelines and off-shorelines architecture with their local communities' involvement in design and implementation process. Authors intend to identify the problem of dynamic urban planning and architectural design, which face most of the coastal communities that suffer from similar problems, hazards, and natural crisis. This paper will address different research strategies through linking strategic analysis with the current situation. The outcome of the framework synthesize will be in the form of design guidelines and standard framework that match with Egypt's shorelines and communities.

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	Keywords: Living Shorelines, Urbanism, Global Warming.
HamedMoayeriKashaniGICICRST1712104	**Studying the effect of the preload induced by screw tightening on stress distribution of a dental implant** **HamedMoayeriKashani** **Department of Mechanical Engineering, Islamic Azad University West Tehran Branch, Tehran, Iran** **AlirezaBidarFarrokhBelagh** **Department of Mechanical Engineering, Islamic Azad University West Tehran Branch, Tehran, Iran** **Abstract** **The success of implants is largely dependent on initial stability and long-term Osseo integration due to optimal stress distribution around the bone and implant. The purpose of this study is the numerical analysis of stress distribution in jaw bone and implant using finite element analysis considering the static forces caused by screw tightening and masticatory preloads. These forces and design limitations have been applied in accordance with implant science in dentistry to provide a proper stress distribution. First, all the parts were modelled with Solidworks software and then transferred to Abaqus software for analysis and applying the forces. For a better and more exact stress distribution analysis in the bone and implant, this analysis was conducted by two steps, that after determining the properties of each part, boundary conditions, loading and finally meshing the complex using hexahedral meshes and Match mesh technique, the abutment was tightened inside the implant with different tightening torques through six tests to apply preload in first step which this force applying induced stress in jaw and implant. Then, the amount of jaw force was applied to the crown surface. The results showed that the preload is quite effective in bone and implant stress distribution. However, its value only affects the surface stresses of the implant and has little effect on the of jaw bone stress value. Key words: Dental implants, Preload, Stress, Fatigue, Finite element analysis**
Sajida Munir **GICICRST1712105**	**Variation Analysis of Bacterial Polyhydroxyalkanoates Production Using Saturated and Unsaturated Hydrocarbons** **SaiqaTufai** **Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore 54590, Pakistan** **Sajida Munir** **Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore 54590, Pakistan** **Nazia Jamil** **Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore 54590, Pakistan**

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Abstract

Polyhydroxyalkanoates (PHA) are efficient, renewable and environment friendly polymeric esters. These polymers are synthesized by a variety of microbes under stress conditions. This study was carried out to check the suitability of waste frying oil in comparison to other oils for economical bioplastic production. Six bacterial strains were isolated and identified as Bacillus cereus (KF270349), Klebsiella pneumonia (KF270350), Bacillus subtilis (KF270351), Brevibacteriumhalotolerance (KF270352), Pseudomonas aeruginosa (KF270353), and Stenotrophomonasrhizoposid (KF270354) by ribotyping. All strains were PHA producers so were selected for PHA synthesis using four different carbon sources i.e., waste frying oil, canola oil, diesel and glucose. Extraction of PHA was carried out using sodium hypochlorite method and maximum amount was detected after 72 hours in all cases. Pseudomonas aeruginosa led to maximum PHA production after 72 hours at 37 °C and 100 rpm using waste frying oil that was 53.2 % PHA in comparison with glucose 37.8 % and cooking oil 34.4 %. Bacillus cereus produced 40 % PHA using glucose as carbon source which was high when compared against other strains. A significantly lesser amount of PHA was recorded with diesel as a carbon source for all strains. Sharp IR peaks around 1740-1750 cm-1 were present in FTIR spectra that correspond to exact position for PHA. The use of waste oils and production of poly-3hydroxybutyrate-co-3hydroxyvalerate (3HB-co-3HV) by strains used in this study is a good aspect to consider for future prospects as this type of polymer has better properties as compared to PHBs.

Keywords: Waste frying oil; Polyhydroxyalkanoates; Fluorescence microscopy; FTIR.

Dr. SaadKaleefah
GICICRST1712107

Improve the Steganography Performance Based on Discrete Wavelet Transform

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Abstract

This paper presents an improvement of the steganography techniques based onthe Discrete Wavelet Transform (DWT), where the DWT is represented a signal processing tools which can separate the signal to its spectrum band parts. In this context, the required message can hide it in suitable band part after separated it by DWT. The Peak Signal to Noise Ratio (PSNR) is reduced with increase the

	message length, and increase it with increase the DWT levels. Where, the PSNR reduced from 13.8278 to -17.77208 for 161 and 505 characters as the length of massage respectively, while it increased from -13.8278 to 7.0554 and from -17.7208 to 1.7901 with increase the DWT level from 1 to 2 respectively. **Keywords: Steganography, DWT, Hidden information**
DuyguYildirimPeksenGICICRST1712070	**Application of Alternative Maritime Power (AMP) Supply to Cruise Port** **DuyguYildirimPeksen** **Yalova University, Maritime And Port Management Department, 77100, Yalova, Turkey** **Güler BILEN ALKAN** **Iskenderun Teknik University, Barbaros Hayrettin Ship Building and Maritime Faculty, Iskenderun, Hatay** **Abstract** **The International Maritime Organization (IMO), the European Union Council and the US government have made it mandatory to take necessary measures through international contracts and national legislation to minimize ship-based emissions due to the fact that maritime transport damage to the environment has reached a serious level. Ship owners and ship operators are turning towards alternative technologies and fuels that reduce emissions to ensure the maritime trade smoothly. On the other hand, Port operators enlist ship owners with alternative maritime power (AMP) to their ports that is one of the emission reduction alternative technologies, as well as unlimited service to the vessels. Ports providing this opportunity will be a mandatory choice for ship operators who use fossil fuel-powered aids to produce the electricity they need and thus cannot meet the emission limit requirements at ports, and will contribute to the environment as well.** **In this study, AMP application, one of the technologies that reduce the amount of emissions from vessels during the docking period, is examined for KuşadasıEge Ports. Purpose of the study; when this system is applied to the port, the amount of emissions and external costs are calculated and compared with MGO. According to comparison of AMP with MGO (0.1%S); total air pollutant is reduced by 94% by decreasing SO2 23%, NOx 97%, PM 88%,CO 99%,VOC 64%. On the other hand, it is estimated that total greenhouse gas decreased by 41% by decreasing by CO2 41%, N2O 85% and CH4 81%. In finally, total emission reduction is about 43%. In addition, the economic and environmental benefits to hinterland and country are estimated. Total external cost of human health, ecosystem quality and climate change for MGO is Euro 3,209,230 and for AMP is Euro 402,347.** **Key words: Cruise port, emission reduction, alternative technology, AMP**

FadiaEbrahimGICICRST1712079	**Effect of Doping Concentration on the performance of p-type AlGaAsSchottky Diodes: A simulation approach using COMSOL multiphysics**
	Fadia A. Ebrahim **Department of Physics, King Abdulaziz University, Jeddah 21589, Saudi Arabia** **Noorah A. Al-Ahmadi** **Department of Physics, King Abdulaziz University, Jeddah 21589, Saudi Arabia** **Hala A. Al-Jawhari** **Department of Physics, King Abdulaziz University, Jeddah 21589, Saudi Arabia**
	Abstract **In this present study, the effect of doping concentration on the performance of Schottky barrier diode (SBD) was investigated. We measured the main electrical parameters for three p-type Au/Ti/AlGaAs SBDs with selected concentrations ranged from 1×10^{16} to 1×10^{17} cm-3 at room temperature. The ideality factor n and the barrier height ϕ were determined based on thermionic emission theory. n increased from 1.88 to 2.12 while ϕ decreased from 0.69 to 0.59 with increasing doping concentration. The diodes showed an excellent rectifying behavior, the rectification ratio was improved from 22.4for the heavily doped sample to 1.48×10^3 for the doped sample. The samples were then designed using COMSOL Multiphysics modules considering the ideal case. A comparison between the simulated and measured data was performed. The simulated results showed that the both barrier height inhomogeneity and tunneling process are the main factors behind the degradation of the real devices performance.**
Hussein Al-TameemiGICICRST1712085	**Implications for Disaster Management of the Evaluation of the Environmental Damages, in Application of RemoteSensing.**
	Hussein Al-Tameemi **School of Engineering & Informatics,Sussex University,Brighton, United Kingdom**
	Abstract **Recently, disaster management and environment crises have widely highlighted one of the most important research sciences in all over the world. Additionally, in developing effective strategies to reduce the risk of environmental disasters in the communities is being considered essential, that cause extensive losses in economy and society. So, an importance of the application of remote sensing in developing such strategies effectively. Thereby enhancing the ability of virtual reality of the three-dimensional, in the analysis of available data of the of satellite images of the study region (Iraq). That requires significant efforts to determine the best methods for**

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evaluating and developing the environmental impacts for these damages. As an increase in the growth of the launch of satellites into space, witnessed by the world in the recently, satellite images such as Landsat 7- 8 sensors have relied upon, for the purpose of monitoring all environmental changes on the earth's surface, with high accuracy pixel values and clarity. In that research, it has proposed to an evaluation of the implications for disaster management: assessment of environmental impacts by using digital processing techniques with 3D GIS via satellite images in the Iraq. To contribute to the development of the fundamentalism to the environmental protection of these damages, caused by analysis and evaluation of the satellite images.

Honestly, this subject that requires considerable efforts, to determine the best methods for evaluating and develop methods of dealing with the management disasters and crises environmental. This review highlights, the importance of remote sensing background in the assessment of vulnerability to the environmental impacts of disasters. In particular, this research suggests the importance of satellite image competence in the planning and delivery of actual data results of failure. To address the different climate impacts, towards capacity building for reduction these circumstances in the future. This subject to PhD study in the promotion importance of the environmental disaster management file, through the use of the remote sensing data. Especially in the transition years after 2003, to achieve a fundamental scientific objective (analysis and assessment of satellite images data, climate change adaptation and controlling of environmental damages). To this end, it identifies the of existing and potential strategies for enhancing resilience to natural disasters. That is done, through the inclusion of current scientific recommendations, to improve the reality of fast response systems in the public administration service, to evaluating of the file disaster environmental damage changes. Moreover, it helps decision makers in the country to adopt research work to solve all environmental problems, due to previous wars and incorrect policies in the file of combating environmental changes in the region. Also, all vital aspects of the state are being affected by the cause, such as economic, health, agricultural and other areas of the life in that region. Therefore, also to investigation this aim, it has been collecting data and information from satellite images data related to the study area and other documents. The research objective includes the first step such as "evaluation of the environmental damages by using Digital Processing Techniques with 3D GIS via satellite images which enhancing the ability of virtual reality to analyse of available data and information for satellite images; Application to Landsat 7, 8 Satellite Images in the Iraq for 2010-2015". That method is being optimal in developing an assessment of the damage levels. Drawing on preliminary results that review the effectiveness of the proposed method in combating

	environment impact of the spread of harm, including severe seasonal changes. Moreover, It has noted that the results achieved according to the method proposed for the study, apply to the use of the satellite images, such as Landsat 7 and 8. Therefore, the motivation behind this work is to give an approach for evaluation and overlapping the satellite images with technique 3D GIS. This work requires agreement with the government side in the Iraq, such as collaboration with the Department of Space/ Ministry of Science and Technology Iraqi and the Ministry of Higher Education. Therefore, to provide all the data required to complete this research and analytical evaluation. The fact that environmental damage to many important variables in the country has been affected, naturally influence the future of Iraq.
Shorouq AhmedGICICRST1712089	**Effect of ZnO and TiO2 Nano for preparation of Transition Metal Oxide Nano catalyst for improving the hydrogenation/Dehydrogenation Kinetics of MgH2** **Shorouq. Ahmed** **Nanotechnology and Advanced Materials, Kuwait Institute for Scientific Research** **Abstract** Hydrogen, which is enjoying a set of unique properties, offers the most potential solution to satisfying the global energy requirements for reducing carbon dioxide and minimizes the other greenhouse gas emissions, leading to improve the global energy security. Recent studies have shown that hydrogen fuel cost is reasonable and can be considered as an ideal candidate to replace fossil fuels. Number of obstacles must overcome before the hydrogen economy becomes a reality. One of the obstacles is, safe and efficient storage of hydrogen particularly for mobile/automotive applications. Magnesium hydride (MgH2) has higher hydrogen-storage density [(6.5 H atoms/cm3] than hydrogen gas (0.99 H atoms/cm3) or liquid hydrogen (6 H atoms/cm3). Unfortunately, the high operating temperature (275oC - 350oC) and slow kinetics of hydrogenation/dehydrogenation for MgH2 restrict its real applications. The present project employed nanotechnology approach for synthesizing of high hydrogen storage capacity of Mg-based nanocomposite powders with improved kinetics of hydrogenation/dehydrogenation.
SubbalaxmiSelvarajGICICRST1712092	**Fermentative production of tannase from bacterial isolate under solid state fermentation** **SubbalaxmiSelvaraj** **Department of Biotechnology, Manipal Institute of Technology, Manipal University, India.** **Vytla Ramachandra Murty** **Department of Biotechnology, Manipal Institute of Technology, Manipal University, India.**

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	Abstract Tannase (Tannin acyl hydrolase EC.3.1.1.20) catalyzes the hydrolysis of ester and depside linkages in hydrolysable tannins like tannic acid releasing glucose and gallic acid. It finds commercial applications in food industry to reduce the level of tannins in fruit juices; preparation of instantaneous tea and production of gallic acid. In this present study, a tannase producing bacterial strain was isolated from gastro intestinal tract of goat by adopting liquid enrichment technique and spread plate method. An isolate was further identified using 16S rRNA gene sequence homology at Agharkar research Institute (Pune, India). Thereafter, the two step sequential optimization process for tannase production under solid state fermentation was carried out from an isolate. First, the Plackett-Burman design to screen significant variables among nine media components; and then Central composite design (CCD) to find the optimal values of significant variables for tannase production. The microorganism was fermented in an optimized liquid medium inoculated with inoculum and impregnated on polyurethane foam for 25 h under static condition. The maximum tannase activity was attained, which represents an increase of 305% in relation to the initial optimized conditions. Keywords: Tannase, polyurethane foam, central composite design, solid state fermentation.
EhabAwadGICICRST1712099	**Confined beam-bending in silica-glass for multicore connections among MCFs** **EhabAwad** **Electrical Engineering Department, College of Engineering, King Saud University, Riyadh** **Abstract** A 90o silica-glass confined beam-bending device with a bending-radius of 160μm is numerically demonstrated. The device allows for direct space-division connections among single-mode cores of different multi-core and/ or single-core fibers without a need for special spot-size converters or mode tapers. The device can also be cascaded to maneuver beams around sharp corners in three-dimensional space to establish flexible connections within small areas. An example of universal multicore connector among different multicore and single-core fibers is numerically demonstrated. The device shows a wideband operation over the S, C, L, and U wavelength range with small insertion-loss, polarization-dependent loss, in addition to reasonable return-loss. Keywords: Optic fiber communications; multicore optical fibers; optical fiber components.
ArzuCilasunKunduraciGICICRST1712103	**Lighting Design For The Aging Eyes** **Dr. ArzuCilasunKunduraci** **Yasar University, Faculty of Architecture Izmir Turkey**

Abstract
Lighting allows users to accomplish their tasks, feel safe and understand the surrounding environment. Therefore, it is an inseparable component of buildings. Building codes, energy standards and regulations determine the required illuminances to provide visual comfort. However, the existing requirements are constituted considering healthy eyes only. Different visual comfort requirements for people with visual disabilities, in particular for elderly people, are not clear. In fact, the illuminance requirements show great difference for elderly people. For instance, an average 60 years old eye requires three times more illuminance than an average 20 years old eye. Therefore, a lighting design that complies with the regulations may not satisfy elderly users' needs.

The world's older population continues to grow remarkably. The increasing share of population of older people requires increase of awareness. In this study, technical lighting information has been offered to obtain visual comfort in living spaces occupied by elderly. Such information is critical for lighting design yet not sufficiently covered in literature. For that reason within this study, different visual requirements of each space type are emphasized to promote accessible design.
Keywords: Lighting Design, Aging Eyes, Lighting for disabled, Accessible design, Design for Elderly

HamedMoayeriKashani GICICRST1712104	**Studying the effect of the preload induced by screw tightening on stress distribution of a dental implant**

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Abstract
The success of implants is largely dependent on initial stability and long-term Osseo integration due to optimal stress distribution around the bone and implant. The purpose of this study is the numerical analysis of stress distribution in jaw bone and implant using finite element analysis considering the static forces caused by screw tightening and masticatory preloads. These forces and design limitations have been applied in accordance with implant science in dentistry to provide a proper stress distribution. First, all the parts were modelled with Solidworks software and then transferred to Abaqus software for analysis and applying the forces. For a better and more exact stress distribution analysis in the bone and implant, this analysis was conducted by two steps, that after determining the properties of each part, boundary conditions, loading and finally meshing the complex using hexahedral meshes and Match mesh technique, the abutment was tightened inside the implant with different

	tightening torques through six tests to apply preload in first step which this force applying induced stress in jaw and implant. Then, the amount of jaw force was applied to the crown surface. The results showed that the preload is quite effective in bone and implant stress distribution. However, its value only affects the surface stresses of the implant and has little effect on the of jaw bone stress value. **Key words: Dental implants, Preload, Stress, Fatigue, Finite element analysis**
Jinwoo Kim **GICICRST1712106**	**Effects of Torsion on a Gyroscope** **Jinwoo Kim** **Student Researcher,Seoul International School,Seoul, Korea** **Abstract** Gyroscopes are essential in modern day society as it is used in many devices ranging from the iPhone to boats, planes, and satellites. The key idea that allows the gyroscope to function the way it does lies in angular momentum; since the gyroscope itself is made up of some kind of spinning disk, angular momentum is generated. So, when various different torques are applied to the gyroscope, the gyroscope behaves in a certain manner as a reaction to this torque, since angular momentum is no longer conserved. In this paper, I experimented and found out that torque indeed causes the gyroscope to turn in multiple directions at the same time via tilt / precession due to a torque in the vertical plane and a gravitational torque.
 BasharatYousuf **YRSICRST1712052**	**A novel approach for quality maintenance and shelf life extension of** **fresh-cut Kajari melon: Effect of treatments with honey and soy** **protein isolate** **BasharatYousuf** **Affiliation: Department of Postharvest Engineering and Technology, Aligarh Muslim University, Aligarh, India** Effect of treatments with different concentrations of honey (0 mL/L of water, 50 mL/L of water, 100 mL/Lof water, 150 mL/L of water) followed by coating with soy protein isolate (50 g/L of water) on fresh-cut Kajari melons were investigated. Effect of honey separately without soy protein isolate coating was also investigated. The treatments were given prior to packing the samples in polypropylene trays and stored at 4 C for sensory and overall shelf life studies. A total of eight combinations of samples with three replicates each were analyzed for various quality attributes throughout the storage life. Highest weight loss occurred in untreated melon samples. Sample treated with 150 mL honey/L of water þ50 g SPI/L of water maintained highest total soluble solids throughout the storage. Sensory scores below 5 were given to control sample after day 8 of storage. Samples treated with honey (150 mL/L of water) showed

better results in terms of most of the sensory characteristics. Ripening index decreased remarkably over the storage period with control sample reaching lowest values in comparison to treated samples. Total plate count of 9.63 log colony forming units per gram (CFU/g) for control sample and counts of less than 5 logCFU/g for treated samples were observed at the end of the storage.

Insight into the biochemical, kinetic and spectroscopic characterization of garlic (Allium sativum) phytocystatin: Implication for cardiovascular disease.

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Abstract

Phytocystatins are cysteine proteinase inhibitors present in plants. They play crucial role in maintaining protease-anti protease balance and are involved in various endogenous processes. Thus, they are suitable and convenient targets for genetic engineering which makes their isolation and characterisation from different sources the need of the hour. In the present study a phytocystatin has been isolated from garlic (Allium sativum) by a simple two-step process using ammonium sulphate fractionation and gel filtration chromatography on Sephacryl S-100HR with a fold purification of 152.6 and yield 48.9 %. A single band on native gel electrophoresis confirms the homogeneity of the purified inhibitor. The molecular weight of the purified inhibitor was found to be 12.5 kDa as determined by SDS-PAGE and gel filtration chromatography. The garlic phytocystatin was found to be stable under broad range of pH (6-8) and temperature (30°C-60°C). Kinetic studies suggests that garlic phytocystatins are reversible and non-competitive inhibitors having highest affinity for papain followed by ficin and bromelain. UV and fluorescence spectroscopy revealed significant conformational change upon garlic phytocystatin-papain complex formation. Secondary structure analysis was performed using CD and FTIR. Garlic phytocystatin possesses 33.9 % alpha-helical content as assessed by CD spectroscopy.
Keywords: Phytocystatin; cysteine proteinase inhibitor; gel-filtration chromatography

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