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# CONFERENCE PROCEEDINGS

**International Conference on Science and Technology**

**(ICST), Bangkok**

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June 14, 2014

# HIGH PRECISION AND RESOLUTION DISPLACEMENT AND VELOCITY MEASUREMENTS USING LINEAR ARRAY AND ULTRASONIC SENSORS.

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**Abstract:** Displacement and velocity sensors with high resolution are key instruments of many precision position and fabrication machines. Long range and high accuracy measurements require high precision, fast response, and low absolute error system. The first goal of this article is to review displacement and velocity techniques of long range measurements and to compare their performance, accuracy, and resolution. The second goal is to contribute a new method as integration of long range sensors and small range sensors to obtain optimum resolution.

## THE EFFICIENCY OF E-PROCUREMENT IN MALAYSIA: AN ANALYSIS OF EXPERIENCE AND PERCEPTION

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**Abstract:** The technology of e-procurement become more popular in many developed countries due to its accuracy in decision making for big projects that enhance the public bidding process for development projects in any country. The experience of employees who operate the system of e-procurement and the perception of users who bid for projects is essential to ensure the efficiency of procurement and the whole bidding process for public projects. This paper examined the impact of employee's experience on the efficiency of e-procurement systems in public agencies. In addition to that attempt to examine the perception factor of using e-procurement systems with regard to users in the seller side. A survey was conducted to identify the Impact of Experience and Perception on the Efficiency towards adoption and use of e-Procurement system among users who working in firms participated in online bidding for public agencies projects, and employees who are working in e-procurement department in government administrations Malaysian government. A total of 80 questionnaires were collected and the data were analyzed to look at the level of the Impact of experience and perception in E-procurement users. The general findings indicate a Positive attitude experience and perception among the users in using the e-procurement.

**Keywords:** E-procurement, Perception, Experience, E-procurement Efficiency.

## MAXIMUM POWER EXTRACTION FOR TWO WIND ENERGY SYSTEMS

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**Abstract:** This paper proposes two effective maximum power point tracking (MPPT) algorithms for two different wind energy conversion systems connected to the grid using permanent magnet synchronous generator (PMSG). The wind turbine (WT) is connected to the grid via back-to-back PWM-VSC for the first scheme, whereas, the WT is connected to the grid via diode-bridge rectifier, boost converter and the grid side PWM-VSC for the other scheme. Active and reactive power control is achieved independently via controlling q-axis and d-axis current components, respectively for the first scheme, whereas, active and reactive power control is achieved dependently via controlling modulation index of the PWM inverter and duty ratio of the boost converter for the second scheme. The effective and powerful WECS is determined via the whole control system superiority and the system operation stability. Also, comparison of the output power from each WECS is introduced via following strictly the WT maximum power curve.

**Keywords:** Wind energy conversion system; Permanent magnet synchronous generator; Maximum power point tracking; Fuzzy logic controller; PSIM; Simulink.

## MAXIMUM POWER POINT TRACKER BASED ON PERTURB AND OBSERVE ALGORITHM FOR PHOTOVOLTAIC ENERGY SYSTEM UNDER EGYPTIAN CONDITIONS

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**Abstract:** In this paper, a maximum power point tracker (MPPT) based on perturb and observe algorithm for photovoltaic (PV) energy system is introduced. MPPT is a dc to dc converter that regulates the output power to ensure an optimum value of the PV module voltage to extract the maximum power from PV module. The main objective of this paper is to study the effect of operating the PV system at maximum power point under Egyptian conditions. The overall system is modeled by using MATLAB/Simulink program. The output power and energy from PV system in case of using MPPT based on perturb and observe algorithm are compared to those obtained by the system without MPPT. Results show that, the PV system with MPPT increases the efficiency of energy production harvested from PV.

**Keywords:** Photovoltaic Energy System, MPPT, Perturb and Observe and Boost Converter.

## THE INFLUENCE ON MOBILE LEARNING BASED ON TECHNOLOGY ACCEPTANCE MODEL (TAM), MOBILE READINESS (MR) AND PERCEIVED INTERACTION (PI) FOR HIGHER EDUCATION STUDENTS

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**Abstract:** M-learning is not only e-learning with handheld devices. M-learning creates new learning channel in which students can access content just in time information required at the right time and right place. Despite the fact that m-learning provides mobility and instant access to students, there are some implementation challenges and issues in transition from e-learning to m-learning. Mobile learning is still in its infancy, identifying the factors influencing the adoption of this technology is an essential issue. Researchers and developers in education sphere should consider these mobile capabilities and challenges before developing m-learning content. Students play the most important role in determining the success or failure of the systems. The students adopt or reject a new technology is an importance and complexity case. Moreover, there are numerous models and theories have been conducted for a better understanding of students-adoption, especially in the educational context. Technology Acceptance Model (TAM) is one of the best and well-known adoption models which can be used to interpret the adoption of new technologies. In order to find the factors that influence on m-learning adoption, in this study will adopt TAM model as a theoretical framework and extending this model with two external variables to propose new model. A questionnaire survey will be adopted based to collect required data. The results of data analysis will guide this study to find which of the following independent variables (Mobile Readiness, Perceived Interaction, Easy To Use, Usefulness, Attitude to Use) has a more significant effect on dependent variable (the Influence On M-learning Adoption). Finally, the results will provide valuable implications for ways to increase college students' acceptance of mobile learning.

**Keywords** —TAM model, Perceived Interaction (PI), Mobile Readiness (MR), adoption.

## IN-MEMORY VS. TRADITIONAL RELATIONAL DATABASE - COMPARATIVE STUDY

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**Abstract:** Nowadays, Big data as a new challenge requires high speed performance for query processing, existing traditional database management system, Disk-Resident Database (DRDB) are still have their bottlenecks, especially when processing huge data. Dramatically reducing memory price makes it possible to have a large memory space that will fit to keep large amount of data within it, this is called In-memory database. This paper will describes In-Memory new techniques compared with traditional DRDB.

**Keywords-** In-memory; IMDB; MMDB; DRDB; memory based database.

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## FORMALDEHYDE SYNTHETIC SIMULATION OF A FIXED BED REACTOR OVER SILVER CATALYST

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**Abstract:** A plug flow tubular reactor model for the oxidation of methanol in a fixed-bed reactor over silver catalyst has been presented in this paper. The model performs the dynamic behavior for the oxidation reaction of methanol and formaldehyde throughout the reactor length. The literature data are used to validate the model accuracy. The effect of time and the amount of water in feed are studied in the simulation study. The model gives the acceptable prediction of the formaldehyde yield, especially at reaction temperature 500-975 K. In addition, the simulation confirms that the high yield is achieved by increasing the amount of water in feed.

**Keywords-** Fixed-bed reactor, Formaldehyde, Fully explicit, Simulation

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## KEY DETERMINANTS FOR SUCCESSFUL PROJECT IMPLEMENTATION IN THE INDUSTRIAL AREA OF WEST BENGAL

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**Abstract:** This paper aims to identify Key determinants for successful Project Implementation in the state of West Bengal with special focus in the Durgapur Industrial area. The research is motivated by the fact that of late there has been limited success in Project Implementation in West Bengal which had earlier been very successful in Large scale project Implementation. Project related Professionals of the region were deliberated and interviewed. An objective realization instrument developed using 47 factors identified in the research as possible drivers in Project implementation based on Likert's seven point scale of ranking. Weighted scores of respondents who have been involved in project implementation in the area to the factors were analysed using Factor Analysis, while the effects of the quantified weight of the critical factors were analysed using regression tool. Result of the analysis clearly identifies the Key determinant among all factors which are essential for successful Project Implementation. The 47 factors are further grouped into few segments like Human , Resource , Infrastructure etc. So through this research segment priority is also determined for the area and project manager based on priority can devote their time and energy to ensure that the Project is successfully completed. The customisation of Project planning and Project design has been the key determinant for successful project implementation.

**Keywords :-** Project, Project management, Project Implementation, determinants, Factor Analysis, Success Factors, Regression, Likert's ranking scale.

## ACOUSTIC ABSORPTION AND PHYSICOMECHANICAL PROPERTIES OF SBR/RR FOAM

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**Abstract:** This research focuses on the enhancement of acoustic absorption coefficient ( $\alpha$ ) with a broadband frequency response of a styrene butadiene (SBR) blended with a reclaimed rubber (RR) (SBR/RR foam) composites by increasing the number of microstructure open cells using an inorganic chemical blowing agent (sodium bicarbonate). The effect of various compositions between RR and virgin SBR on the Physicomechanical properties was investigated as well. The results obtained clearly demonstrate that all samples provide superior sound absorption and the accession of the RR to the composition influenced the foam's ability and respectively the acoustic and the physical property of the blends. This raw material can be applied in different sound absorption applications and therefore minimize the environmental pollution from the waste rubber and acoustic noise from the environment.

**Keywords—**acoustic absorption coefficient, reclaimed rubber, sodium bicarbonate and styrene butadiene.

## DIFFERENT CONCENTRATION OF COBALT TOLERANCE IN CHLORELLA VULGARIS & THEIR EFFECT ON GROWTH AND BIOPIGMENT.

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**Abstract:** *Chlorella vulgaris* could be tolerant at 3.5 ppm  $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$  and a zinc tolerant strain with maximum tolerance concentration (MTC) 10 ppm  $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$  was obtained by stepwise transfer to higher concentrations. The adaptation was irreversible even after three generation in metal free medium. The tolerant strain grew with a shorter lag period of 4 days as against 6 days in the case of the wild strain. The tolerant strain had higher MTC than that of the wild strain. The zinc tolerant strain of *Chlorella vulgaris* was obtained by transferring a 10 days old wild strain from minimal medium containing known concentration of Cobalt salt. At same doses also estimated various biochemical activities including chlorophylls (chl-a, chl-b & total chl) and carotenoid in these experiment.

**KeyWords:** *Chlorella vulgaris*, Cobalt tolerance, minimal media.

## SOME ADVANCES IN THE THEORY OF PETRI NETS

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**Abstract:** Petri net was introduced by Carl Adam Petri. In my thesis work, I am occupied with some advances in the theory of 1-safe Petri nets in the context of producing sets of '0'- '1' sequences as their marking vectors. In particular, have investigated an extremal property, viz., the existence of all the  $2^n$  binary  $n$ -vectors as marking vectors in 1-bounded Petri nets, calling such Petri nets as Boolean Petri nets. I have analyzed the necessary and sufficient conditions for a Petri net to be Boolean. Such Petri nets are very useful in the design of generalized switches such as those used to control automatic washing machines: Suppose that we have a sequence of  $n$  terminals each of which can be at either a low-voltage (denoted by zero, '0') or at a high-voltage (denoted by unity, '1'). It is required to arrange them so that every one of the  $2^n$  sequences of  $n$  bits, corresponding to the  $2^n$  binary (or '0-1')  $n$ -tuples can appear on the terminals. Complete Boolean hypercube is the most popular interconnection network with many attractive and well known properties such as regularity, symmetry, strong connectivity, embeddability, recursive construction, etc. Therefore, a good characterization of Boolean Petri nets is needed. In this thesis, I try to give most possible necessary and sufficient conditions for a 1-safe Petri net to be Boolean. For brevity, in the thesis, I will call a 1-safe Petri net that generates all the binary  $n$ -vectors as marking vectors exactly once are called crisp Boolean Petri nets, where  $n$  is the cardinality  $|P|$  of the set  $P$  of its places. Crisp Boolean Petri nets are not only of theoretical interest but also are of practical importance.

## TREATMENT OF WATER HYACINTH AND PINEAPPLE INDIGENOUS FIBERS FOR TEXTILE APPLICATIONS

## USING PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION (PECVD)

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**Abstract:** The effects of plasma treatment on chemical and physical properties of indigenous fibers such as water hyacinth and pineapple were investigated. Oxygen, argon, hydrogen and mixed oxygen/argon gases were used to produce plasma in a plasma-enhanced chemical vapor deposition device. Yarns were produced from the plasma treated indigenous fibers with 80% polyester, 10% water hyacinth and 10% pineapple composition. Properties of textiles made from yarns were further characterized by scanning electron microscopy fitted with energy dispersive x-ray (SEM-EDX), x-ray diffraction analysis (XRD), thermogravimetric analysis (TGA), contact angle, dyeability, air permeability, color quality thru percent reflectance, and laundering. Results show that textiles made from plasma treated indigenous fibers such as water hyacinth and pineapple possess comparable properties of commercial 100% polyester textiles.

**Keywords:** Plasma; Textiles; PECVD; Indigenous Fibers; Water Hyacinth Fibers; Pineapple Fibers

## ELECTRICAL CONDUCTIVITY & ACTIVATION OF CONDUCTIVITY OF SYNTHESIZED TETRAHEDRAL CRYSTAL

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**Abstract:** This investigation involved the synthesis and Electrical characterization of Crystals of p-dimethylaminobenzaldehyde and o-phenylenediamine Ligand with Cu(II), Fe(III) and Ni(II) metal. An electrical conductivity of all crystals was measure at different temperature. Crystals were combined and form a tabulate of 6 mm diameter. It was heated at a 1oC / min. From the conductivity of crystals resistivity was also carried out and hence Specific resistivity was also carried out from the size of tabulate. Activation energy (E) of all crystals were calculated using the available data.

**Keywords:** Electrical Conduction, Electrical Conductivity, Specific Resistivity, Activation Energy

## INDEPENDENT MEDICAL CARE UNIT FOR RURAL HEALTH CARE DEVELOPMENT



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**Abstract:** The Independent Medical Care Unit (IMCU) is an interactive machine that will acquire data in the form of tests and queries from the patient. The tests (such as, blood test) produce immediate results (like sugar levels, pressure levels, etc.). These machines are placed in various medical centers in the villages and hospitals, also collecting the existing patient records and required details which are added to a database. The current test results of patients are compared with the database and if a record matches, the diagnosis prescribed in the record are prescribed for the patient. If a perfect diagnosis is not achieved then the patient is immediately referred to an available doctor online, thus sorting out one's problem immediately. In case of emergencies such as snake bites, first aid medicines are provided by the medicine immediately until further assistance arrives. This unit holds a pick and place robot which helps in the automation of pharmacy which is a major requirement in the present world.

**Keywords**— rural healthcare, telemedicine, pharmacy automation.

## APPLICATION LEVEL CHECKPOINT-BASED APPROACH FOR CRUSH FAILURE IN DISTRIBUTED SYSTEM

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**Abstract:** Fault-tolerance is an important and critical issue in distributed and parallel processing system. Distributed system consists of a collection of interconnected stand-alone computers working together as a single, to produce complete result. If the numbers of computing nodes are increased concurrently and dynamically in distributed computing, it may have the many changes to become crush failures. In this paper, we propose application level checkpoint-based fault tolerance approach for distributed computing. The proposed system uses Coordinated Checkpointing techniques and Systematic Process Logging (SPL) as global monitoring mechanism. The proposed system implements on distributed multiple sequences alignment (MSA) application using genetic algorithm (GA).

**Keywords**— Coordinated Checkpointing, Genetic Algorithm (GA), Systematic Process Logging (SPL), Multiple Sequences Alignment (MSA)

## **PATTERN BASED SENTIMENT FEATURE EXTRACTION METHODOLOGY USING TARGET**

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**Abstract:** Now a days human beings are relying on computers too much and computers should be smart enough to understand, recognize and express emotions/opinions according to requirements of the humans for the development of a computer based society. The significance of proposed work is the development of a pattern based algorithm for the extraction of features from tourism domain i.e. hotel reviews. The features process is based on linguistic patterns associated with opinion words. The proposed work will provide such a framework that can understand text, extract opinions, classifying the opinions. The proposed Pattern based feature extraction algorithms provide accurate results with improved frequency and recall scores.

**Keywords-**Opinion Mining, features extraction, NLP, Sequential Patterns.

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## **ASSESSING DISASTER RISK MANAGEMENT OF CULTURAL HERITAGE IN KANDY WORLD HERITAGE CITY, SRI LANKA**

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**Abstract:** Kandy is the last kingdom of Sri Lanka; reflect rich heritage values in various aspects. The heritage is centred by Temple of Tooth Relic located in the heart of the Kandy City. Due to extraordinary characteristics the UNESCO has declared Kandy city is a world cultural heritage site.

Disaster Risk Management of Cultural Heritage is a globally concern theme comes either disaster management or cultural heritage frameworks. The study concentrated to identify disaster risk by elaborating vulnerabilities, capacities and propose disaster risk management of cultural heritage plan for Kandy. The study method and materials basically approached by two pathways; identify and describe cultural heritage attributes and disaster risk management development initiatives already addressed or applied in Kandy.

Mainly landslides, urban and forest fire and other hazards like pollution, degradation and social unrest were analysed. Cultural heritage has been identified as properties and their attributes. Disaster risk management cycle has been used as a foundation model. The study has proposed integrated plan on urban disaster risk management of cultural heritage. The plan address risk assessment, risk reduction, impact mitigation, early warning, preparedness and response strategy, integration with development. Building resilience and coping mechanism with climate change adaptation and mitigation also considered in the plan.

Gentle Medicine -Taurine:

Component of functional food& Nutraceuticals for Good health.

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## **MEDICINE AND FOOD HAVE A COMMON ORIGIN. A FOOD CAN BE REGARDED AS ‘FUNCTIONAL’**

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**Abstract:** If it is satisfactorily able to demonstrate its beneficial effects on one or more target functions in the body thus improving the state of health and strengthening the well being and or participating in reduction of risk of diseases . Such nutraceuticals in broader term must remains as component of food rather than individually as capsule or in other forms. There is increasing evidences that sulfur amino acids (SAA) play an important metabolic and functional role in human health and disease prevention. It is further observed that SAA also provide elemental Sulfur require for growth and development, and in general, it is source of energy and nutrient needs of various life processes. Taurine has long been placed under such category. To add little more the best-known functional food until now is mother's milk of which taurine is component. It is possible and feasible to modulate target functions via food supplemented with such agents. Taurine supplemented food and formula have provided long range of beneficial effects, almost covering the entire life activities, from vision to brain and smoking to drinking. It has anti diabetic to anti ageing properties .Taurine is also involved in varieties of ways to improve the quality of life to make it more happier and healthier .Some of the taurine analogues also exhibit similarly. Hence taurine such potential require further extension and enlargement but with logistic support. The better prophylaxis of several important diseases will not be possible unless the nutritional quality of the diet can be made much better, than it is often the case as of today, unless we bring the concept of "functional food", in reality such dream ;"Quality of Life" will be remain a dream. Looking the success of Taurine therapy; combination of both dietary and pharmacological intervention is best suited approach, now it is time for," tailored functional food" with multifunctional therapeutic intervention, is perhaps only hope; not to Homo sapiens but to all others animals.

## **A CACHING SCHEME FOR NEAREST-NEIGHBOUR QUERIES IN MOBILE DATABASE**

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**Abstract:** The advances in wireless and mobile computing allow a mobile user to perform a wide range of application although there are some limitations in non-mobile hard wired computing environments. As the geographical position of a mobile user is becoming more traceable, users need to pull data which are related to their location, perhaps seeking information about unfamiliar places or local lifestyle data. Respect to the limitations in mobile environments, it is strongly recommended to minimize number of connections and volume of data transmission from the servers. Caching data that are frequently accessed by mobile user in the client side is an appropriate technique for reducing data transmissions in mobile environment. Most of the existing location services providers give more than one nearest-neighbour queries results. In this paper, a new caching scheme which is based on hybrid and semantic caching is proposed to get the only one nearest neighbour query result (e.g., restaurants and gas stations) in the client side. In server side, the existing kd-tree index is used to answer nearest-neighbor queries directly.

**Keywords:** Hybrid caching, KD-tree, Location-dependent query, Mobile database system, Nearest-neighbor (NN) search, Semantic caching.

## CONTRAST ENHANCEMENT USING HISTOGRAM MAPPING PLATEAU LIMIT TECHNIQUES

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**Abstract:** Contrast enhancement is an important factor in the gray scale images. One of the widely accepted contrast enhancement method is the Histogram equalization (HE). Although HE achieves comparatively better performance on almost all types of image, Global Histogram Equalization sometimes produces excessive visual deterioration. The proposed Brightness Preserving Histogram Mapping Plateau Limit (BPHMPL) method provides better brightness preservation without allowing in excess of contrast improvement measure. This method decomposes the input image by computing the local maxima of the smoothed image using Gaussian filter which reduces the noise. Then the clipping process has been implemented which provides the good enhancement rate than the conventional methods. The experimental result of the proposed BPHMPL is better than the existing methods.

## A CONSTRUCTION OF DGRM CODES OF ORDER $R$ $+ (R + 1)M,S$

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**Abstract:** Reed-Muller (RM) codes are one of the best studied error correcting codes. They are easy to decode and first order Reed-Muller codes are especially efficient. RM codes were also used for sending photographs from Mars by Mariner series of space crafts and have become more prevalent as telecommunications have expanded and developed active use of self-correcting codes. Such important applications of RM-codes encouraged researchers to study their variants in detail. In this paper we study dual of Generalized Reed-Muller (DGRM) Codes. It is shown that combination of GRM Codes of order  $r+(r+1)m,s$ , is also a GRM code.

**Keywords:** Reed-Muller (RM) Codes, Generalized Reed-Muller (GRM) codes, Dual of GRM (DGRM) codes.

## ENSURING PARTICIPATION IN RURAL COMMUNITIES THROUGH KNOWLEDGE MANAGEMENT AND ICT: THE CASE OF BAROTAC VIEJO, ILOILO

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**Abstract:** The concept and practice of good governance have contributed to the evolving relationship among the three governance sectors, namely the State, Private Sector and Civil Society. Primarily focusing on bureaucratic reform, current discourses on good governance centers on the State's ability to deliver services to its constituents and harness the potential for synergy among key societal players. Another facet of this discourse is the role of good governance in socioeconomic development. Focusing on the area of participatory governance, an aspect of the discourses on this area treats participation as a vehicle for promoting inclusive growth and the empowerment of the periphery.

With the purpose of ensuring significant participation in community development, this paper looks at the dynamics of participation in selected rural communities in the Philippines. The paper explores the knowledge management practices and possible ICT intervention points in the practice of participation in community development.

Lastly, the study focuses on three selected communities belonging to the Area Specific Development Program (ASDP). ASDP is a community development program administered by the NGO- Kaisahan Inc. in partnership with the Municipality of Barotac-Viejo, Iloilo Province.

**Keywords:** Knowledge, Knowledge Management, Community Development, Participation, e-Participation and ICT for Development.

## DIVIDE BY 'SIX' ALGORITHM FOR DBNS

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department: ECE  
designation: Assistant Professor

**Abstract:** Double Base Number System plays a significant role to reduce the complexity in the scalar multiplication which is used in the cryptographic methods like Elliptic curve and Hyper Elliptic curve cryptographies. The previously proposed algorithms on converting number to Double Base Number System are based on the greedy algorithm which uses the closest approximation method. It is advantageous if no summands have the greater power than their previous summands in the final DBNS representation of a number. It will be too tedious to achieve this condition using the greedy algorithm and it results in more number of summands. In this paper, a new algorithm is proposed which uses the Divide and Conquer method. This proposed algorithm achieves the above stated condition with the reduced number of summands.

## LIMIT EQUATIONS FOR AVOIDING ABNORMAL COMBUSTION OF HYDROGEN POWERED CAR

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**Abstract:** In this paper, the Toyota Corolla 4 cylinder, 1.8l engine running on petrol was systematically modified in such a way that it could be operated on either gasoline or hydrogen at the choice of the driver. The design and construction of a hydrogen car was based on seven basic systems: the hydrogen storage, hydrogen re-fuelling, hydrogen piping, pressure regulation, fuel delivery, fuel and engine management and safety. Attention is directed towards abnormal combustion related to the basic tuning of hydrogen engine such as: knock, pre-ignition, self-ignition and backfire. These abnormal combustion could be overcome by an appropriate air to fuel ratio operating conditions, ignition timing and injection timings at different engine speed and throttle position. Based on the experimental data, a suite of linear regression limit equations were developed and tested to accurately predict the operational limit of individual hydrogen engine control parameters to avoid the abnormal combustion of hydrogen engine. Limit equations were found to be conservative and between 1 % to 10% of the marginal unstable combustion of experimental tuning hydrogen engine on dynamometer. The limit equations also provided a simple and better understanding of the effect of engine control parameters on the abnormal combustion conditions of hydrogen fuelled engine.

**Key Words**– Hydrogen powered car, abnormal combustion, limit equation, ignition timing, injection timings hydrogen engine tuning.

## ESTIMATION OF CUSTOMERS PARTICIPATION TO PROFIT SHARING PROGRAM BY HECKMAN TWO-STEP ESTIMATOR

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**Abstract:** Most of the studies done on the profit sharing topic focused on workers effect. Whereas, in some business, particularly service business, customers factor greatly influence the growth of profit. This paper investigates customers' participation to profit sharing program by using Heckman two-step estimator. The selectivity is used in order to face the possibility of biasness in the estimation. The analysis is based on the data of door to door service business in Malaysia. The empirical result reveal a significantly effect of customers' participation to the profit sharing program.

**Keyword:** profit sharing, customers' participation, Heckman two-step estimator

## Electrical Conductivity & Activation of Conductivity of Synthesized Tetrahedral Crystal

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**Abstract:** This investigation involved the synthesis and Electrical characterization of Crystals of p-dimethylaminobenzaldehyde and o-phenylenediamine Ligand with Cu(II), Fe(III) and Ni(II) metal. An electrical conductivity of all crystals was measure at different temperature. Crystals were combined and form a tabulate of 6 mm diameter. It was heated at a  $1^{\circ}\text{C} / \text{min}$ . From the conductivity of crystals resistivity was also carried out and hence Specific resistivity was also carried out from the size of tabulate. Activation energy (E) of all crystals were calculated using the available data.

**Keyword:** Electrical Conduction, Electrical Conductivity, Specific Resistivity, Activation Energy.

## DESIGNING OF COMBINATIONAL FRACTAL MICROSTRIP PATCH ANTENNA USING ITERATION METHODS

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**Abstract:** This paper presents a design of microstrip patch antenna combining Crown and Sierpienksi fractal slots by cutting different slots on rectangular microstrip antenna and experimentally studied on IE3D software. This design is achieved by cutting multi shapes in square pattern combining with Crown & Sierpienksi fractal slots & placing a microstrip line feed. This design has been studied in 3 iterations. The radiation pattern of the proposed fractal shaped antennas maintained because of the self similarity and centro-symmetry of the fractal shapes. With fractal shapes patch antenna is designed on a FR4 substrate of thickness 1.524mm and relative permittivity of 4.4 and mounted above the ground plane at a height of 6 mm. Details of the measured and simulated results of the individual iterations are presented & discussed.

**Keywords** – Microstrip antenna, Radiation pattern, Returns loss.

## Estimation of Phenolphthalein-Alkalinity titration in Degreasing Process with Statistic and Partial Least Squares regression method

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**Abstract:** In color coating processes, a pre-treatment process is a one of most of essential operations to clean all dusts and grease out from product parts. A degreasing step in the pre-treatment process becomes more important recently. Even though monitoring cleanser concentration in a degreasing bath can be indicated by Phenolphthalein-alkalinity (P-alkalinity) titration, this procedure carried out by human leads to unsatisfactory error. Moreover, the control of concentration of the solution is very difficult. This research focuses on estimation of P-alkalinity value represented the concentration of the cleaner solution in the degreasing bath using parameters which are measurable with standard tools such as pH, Electro conductivity, Density and Temperature. The degreasing bath of a factory in an air conditioner industry is used as a case study. The estimation approach is based on using statistic and Partial Least Squares regression (PLS). It was found that the approach can be able to provide the estimation of the cleanser concentration with the accuracy of 8.62%.

**Keywords** – Alkalinity, Degreasing, Partial Least Squares, Pre-treatment, Estimation, Monitoring.

## Multivariate Analysis of Factors Affecting Sales of the Electronics Appliances in Retail Sector

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**Abstract:** In the past decade, India has shown a tremendous growth in the sales of electronics appliances especially in retail sector. This paper aims to determine the optimization of the marketing strategies of the Electronic Appliances in retail sector in India. The attempt of this research work is based on the study of various factors affecting sales such as cost of production, margin of profit, consumer satisfaction, delivery schedule, market movements, market share of the company and sales promotional schemes. Firstly a five point Likert's multi-item survey model is designed. The pilot survey is carried out to determine the reliability of the all the eight items on the marketing strategies. The Cronbach's Alpha Reliability Coefficient test is performed as to identify the requirement of modification in the survey design. Finally the Multivariate factor analysis is carried out to identify the most influencing factors which can be used to optimize the marketing strategies.

**Keywords** – Marketing Strategies, Factors Affecting Sales, Reliability Coefficient, Multivariate Factor analysis

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## CHARACTERISTIC OF MOISTURE MEASUREMENT ON BASE MATERIAL OF FLEXIBLE PAVEMENT

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**Abstract:** Moisture is one of the influential factors of pavement structural condition generally, and base layer specifically. Having that said, owning adequate data of moisture condition may prevent unwanted damage in the future. At the moment, in Thailand a proper field moisture measurement and time-series data are still unknown. Therefore, in this study moisture sensor is installed in an unbound base layer of road section to monitor the moisture fluctuation all day for a long period. The expected benefit from this study is to obtain the knowledge of how the moisture changes over time on a daily basis, and to gain the information of plausible specific time of moisture measurement on road pavement.

**Keywords**— Unbound base layer, Moisture measurement, Moisture sensor, Flexible pavement

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## Simulation for synergistic extraction of neodymium ions with hollow fiber supported liquid membrane

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**Abstract:** The modeling of neodymium ions extraction from the mixture of D2EHPA and TOPO by the hollow fiber supported liquid membrane has been studied. The system is operated in an once-through-mode and  $H_2SO_4$  is used as stripping solution. Mathematical models have been developed based on a fluid-flow model including the term of axial convection, axial diffusion, chemical reaction at the feed-liquid membrane and accumulation of neodymium ions. The models are solved by a finite difference method on the MATLAB software. The literature experimental data have been used to validate the models. Simulation carried out shows that the models provide good prediction of the concentration of neodymium ions in the feed at the final time with an average absolute accuracy of 8.95%.

**Keywords**— Simulation, Neodymium ions, synergistic, Hollow fiber, supported liquid membrane

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## Modeling and Simulation of Palladium-ion Extraction via Hollow Fiber Supported Liquid Membrane

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**Abstract:** A hollow fiber supported liquid membrane has been applied to separate precious compounds at a very low concentration with the specific characteristic of high selectivity. The modeling of the palladium ions extraction via the hollow fiber supported liquid membrane has been studied. LIX84-I dissolved in kerosene and hydrochloric acid is specified as a stripping solution in this work. Models developed give good dynamic behavior under a recycling operation mode. In addition, the sensitivity of process parameters including axial convection, axial diffusions, chemical reactions at the feed-liquid membrane and the accumulation of palladium ions in the system are also carried out in the simulation study. Simulation results show that the final predicted concentration of the palladium ions in feed solution is good agreement compared to the experiment data (average percentage deviation of 4.69%).

**Keywords**— Palladium, Modeling, Simulation, Extraction, Hollow fiber, Liquid membrane

# Design of a Vacuum Sauce Filling Machine for a Fish Canning Manufacturing

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**Abstract:** A food canning is needed highly for the market, it is fish canning. Fish canning is a food process that produces the canned foods from some fish (e.g. tuna, mackerel, and sardines). Inspecting a canned foods factory found that sauce filling is a step of fish canning process that makes a lot of quantities of sauce loss. In-line gravity sauce filling equipment is used to filling sauce into cans with sardines. This type of sauce filler causes fluctuation of sauce flow rate into cans, which leads to the possibility of sauce overflow and deficit. This work focused on design a vacuum sauce filling machine for a fish canning manufacturing. Therefore, this work introduces an approach to reduce the quantities of sauce loss and increase the productivity of fish canning by using a vacuum sauce filling machine instead of the in-line gravity sauce filling equipment.

**Keywords**— filling, filling machine, fish canning, vacuum, sauce

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# USERS ONLY INDOOR SPATIAL INFORMATION SERVICES, POTENTIAL FUTURE RESEARCH

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**Abstract:** Recently, Spatial information technology closer to real 3D space, a variety of web-based content to provide information services. The complexity of the interior space was larger and information, convention, shopping and entertainment, such as a variety of outdoor activities are done without moving from the living room space become share while gradually increasing. And rather than simply using the services while meeting the requirements of consumers are being offered is the latest indoor spatial information services competitive. In this study, 'Virtual Builders INC' (VB) developed its own 'Gong builder' Incheon International Airport (IIA) application program is being commercialized. Introduced to show the indoor spatial information, future market service potential of available the Asian market to propose.

**Keywords**—Indoor map, Customer service, Application, PalladiON LBS, Spatial information, User participation.