CONFERENCE PROCEEDINGS

ICSTR Bali – International Conference on Science & Technology Research, 29-30 December 2018

29-30 December 2018

CONFERENCE VENUE

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Table of Content:

S. No.	Particulars	Page Numbers
1.	Preface	3
2.	Keynote Description	4
3.	List of Presenters	5-11
4.	List of Listeners	11
5.	Upcoming Conferences	12

Preface:

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KEYNOTE SPEAKER

Dr. Capt. M Mahbubur Rahman

Faculty Member, Military Institute of Science and Technology (MIST), Naval Academy Campus, Chittagong, Bangladesh

Topic of keynote presentation: Powerline Communication System – Technology, limitations and utility in Power Sector.

Prof. Dr. Munshi Mahbubur Rahman, presently serving as Faculty Member, Military Institute of Science and Technology (MIST), Naval Academy Campus, Chittagong, Bangladesh; at the same time he looks after the duties of General Manager (Planning), in Bangladesh Navy Dockyard, Chittagong. He is also the Cheif Advisor Electrical in Bangladesh Navy Dockyard. He has served in Military Institute of Science and Technology (MIST), Dhaka, including Head of the EECE department and Dean, in the faculty of ECE from March 2006 – November 2013. In 2015, he has obtained the Ph.D. degree in Powerline Communication from Bangladesh University of Engineering and Technology. His research interests include Powerline Communication, Broadband Communication, Power System Analysis and Power Electronics.

Arshmah Batool **ERCICSTR1902051**	**Impact of High Performance Work Practices and Knowledge Sharing on Employees performance and Creativity** **Arshmah Batool** **Bachelors of Business Administration BBA, University of Computer and Emerging Sciences Fast Nuces, Islamabad, Pakistan** **Abstract** **High performance work practices (HPWP) system plays very important role not only in strategic HR literature but also in organizations which strive for excellence in competitive market now a days. This article analyzes "the impact of high performance work practices and knowledge sharing on employees' performance and creativity". All the responses were collected through the survey from of self-report type. Out of 200 questionnaires we received and examined the keenness of 145 employees of public and private sectors in Rawalpindi and Islamabad, Pakistan. The response rate of employees was 72.5% in total. Multiple linear regression analyses were used to test all main effect hypotheses. Our result shows that there is significant relationship between High Performance Work Practices and Employees Creativity and Knowledge Sharing. The discussions of our research analyze the ramification of results and recommend future directions for research.** **Acknowledgements: We would like to thank Muhammad Abbas and Sajjad Hanif for their time and giving us the feedback on our work throughout. Their feedback and suggestions helped us a lot in modifying and improving this article.** **Corresponding Author: Arshmah Batool, Bachelors of Business Administration, National University of Computer and Emerging Sciences FAST (NUCES), A.K. Brohi Road, H11/4, Islamabad, Pakistan** **Key words: High performance work practices, Knowledge sharing, Employees' performance, employees' creativity**
Ajlal Mughal **ERCICSTR1902052**	**The Effects of Technology Usage on Privileged and Underprivileged Children** **Ajlal Mughal** **Bahria Town, Islamabad, Pakistan** **Abstract** **An experiment conducted on group of 80 children, was used to detect the effect of technology on the health, height, weight, and run time of children. Variables which were used to differentiate between these two study groups of 40 children each were whether they belong to privileged households or underprivileged. Underprivileged children girls lagged behind in race time while privileged girls did well. Whereas, underprivileged boys did better than privileged boys.** **Contributing variables are discussed in detail in the article. With the objective of defining how the impact of technology use varies between the privileged and under-privileged, this study contributes to the literature significantly.**
Vilas Warudkar **ERCICSTR1902054**	**Facility planning and associated problems: a survey** **Vilas Warudkar** **Mechanical Engineering Department, Maulana Azad National Institute of Technology, Madhya Pradesh, India** **Abstract** **In this study, we have classified and reviewed different types of problems which**

	are related to facility planning and layout design for different types of manufacturing processes. The main problems which are related to location of facilities which also affects the system performance such as distribution of man, material and machine in a plant or a factory and their optimization technique while using of mathematical models, their solutions and application related to whole problems is presented. For solving this type of problems, intelligent techniques such as expert systems, fuzzy logic and neutral networks have been used. In this paper the recent analysis on facility layout is incorporated and facility layout problem is surveyed. Many intelligent techniques and conventional algorithms for solving FLP are presented. In our discussion different research direction, general remarks and tendencies have been mentioned. **Keywords: Facility Planning, Optimization Method, Material handling.**
 **Ni Putu Sumartini** **ERCICSTR1902055**	**A Comparison of Unweighted and Weighted Class Adjustment for Correcting Nonresponse in Multistage Sampling Design** **Ni Putu Sumartini** **Production Statistics Department, National Statistics Office of Indonesia, Jakarta, Indonesia** **Abstract** **Nonresponse is a common problem in a survey. Nonresponse creates error that can reduce the validity and precision of estimation. Among the two kinds of nonresponse, unit and item, the focus of this study is unit nonresponse. Unit nonresponse is commonly treated using nonresponse adjustment. There are many kinds of nonresponse adjustment. Some of them are unweighted class adjustment and weighted class adjustment. The main objective of this study is to compare the validity and precision of the estimation that is made using the two methods. This study also examined the effect of nonresponse rate and mechanism on nonresponse bias and the effectiveness of the methods. Using simulation, this study reached several conclusions: 1) Unweighted class adjustment and weighted class adjustment have the same validity and precision, 2) In total estimation, both methods can increase the validity. However, in mean estimation, both methods are effective only if the nonresponse mechanism is MAR or MNAR and only work in high nonresponse rate, 3) Nonresponse rate and mechanism affect the validity of estimation.**
Hendri H **ERCICSTR1902057**	**Study of Nitrogen Conversion to Ammonia Using Modified CdS Quantum Dot Sensitized Solar Cell with Ti3+/TiO2 Nanotube Catalytic Zone** **Hendri H** **Department of Chemisry, Faculty of Mathematic and Natural Science, Universitas Indonesia, Depok, Indonesia** **Abstract** **Ammonia is a chemical compound that mostly used in our life. Generally, ammonia is produced by Haber-Bosch process using hydrogen and nitrogen at extreme pressure and temperature. The other alternative potential method is a photocatalysis process. In this research, reduction of nitrogen by photocatalysis using nanotube TiO2-based Modified CdS Quantum Dot Sensitized Solar Cell with catalytic zone was investigated. TiO2 was sensitized by CdS and irradiated by visible light to generate electrons for nitrogen reduction at catalytic zone. Variation of reaction time and pH were performed to determine the effect of ammonia production. Characterization was performed to determine morphology of TiO2 and presence of Ti3+ species on the surface as an active site of nitrogen reduction. The obtained efficiency of QDCdS-SSC is 1.63 %. Modified QDCdS-SSC with Ti3+/TiO2 nanotube attain to produce ammonia**

	with solar-chemical conversion efficiency at 0, 0211 %. **Keywords : Ammonia, Nitrogen, Photocatalysis, Quantum Dot Sensitized Solar Cell, TiO2 Nanotube**
 **I Gusti Agung Alit Suryawati** **ERCICSTR1902065**	**The Role Of Stakeholders Assisting Teenagers In Responding To Cyber Media** **I Gusti Agung Alit Suryawati** **Communication Studies, Faculty of Social and Political Sciences, Udayana University** **Abstract** **The purpose of this study is to understand the behavior of teenagers in accessing cyber media, as well as the efforts of stakeholders to assist them in responding to cyber media. This research is a type of qualitative research. The research data were collected through document study, observation and interview with 15 informants, consisting of educators, parent representatives, community leaders, youth leaders and mass media observers of Bali Province, Indonesia. The data analysis was done descriptive-interpretively. The results showed that teenagers were good at utilizing social media applications such as BBM, Facebook, Twitter, WA, Line, and Instagram. They also used email, Wikipedia, Mailing list, Youtube, Weblog, and Blogsite to correspond with their friends and access information. But the information consumed by teenagers from the internet has the potential to affect their consumptive behavior, adopt a shortcut culture, as well as individual behavior that weakens social solidarity. The family, educational institutions, peers, and the government have a strategic role in anticipating the negative impact of internet (cyber media) on teenagers. Efforts to develop education-oriented sites needs to be made.** **Keywords: Roles of stakeholders, Teenager and role model assistance, Cyber media**
 **Gurumurthy S** **ERCICSTR1902058**	**Evaluation of diverse groups of wheat genotypes for stem reserve mobilization (SRM) under combined heat and drought stress** **Gurumurthy S** **Plant Physiology, ICAR- Indian Agricultural Research Institute, New Delhi, India** **Abstract** **The screening for higher stem reserve mobilization efficiency in diverse groups of 44 wheat genotypes was done under four field conditions namely, timely sown irrigated (control), timely sown rainfed (drought), delayed sown irrigated (heat) and delayed sown rainfed (combined heat and drought). The amount of stem reserve was measured by changes in stem dry weightat 50% floweringand maturity stage. The traits recorded were stem reserve mobilization (SRM), stem reserve efficiency (SRE), harvest index (HI), leaf senescence duration (LSD), leaf senescence rate (LSR), growing degree days (GDD), grain weight (GW), specific weight (Sp. wt), height (Ht) and grain weight percentage (GWP).** **The trait SRM and SRME were significantly higher under drought followed by combined stress, control and heat stress condition. The correlation analysis revealed SRM is significantly positively correlated with LSR under both irrigated as well as drought condition, while SRM is significantly negatively correlated with GDD under irrigated field condition.SRE is significantly negatively correlated with Ht of a stem under irrigated as well as combined heat and drought field condition. SRM is significantly correlated with GW under combined heat and drought condition. Combined analysis for all three stresses showed that HD 4728, DBW 43had highest and NP 818, Hindi 62 have lowest SRM with 578, 497 and 66, 100mg/stem respectively. Genotypes were also**

	grouped into different clusters based on their stem reserve. Clustering of genotypes will be useful for selecting diverse genotypes and using them in crop improvement programme.
 **Syarief Nur Hidayat** **ERCICSTR1902059**	**The Strategy of Projects Success Enhancement in the Interior Contractor Firms** **Syarief Nur Hidayat** **Faculty of Engineering, University of Indonesia, Jakarta, Indonesia** **Abstract** **The property growth that is quite high in Indonesia has a good influence on interior business, both interior design and interior contractors. An interior project not only has high complexity but also requires proper planning at the beginning of the project, good division of labor, provision of appropriate teamwork and control and supervision of projects in their daily activities related to efficiency and effectiveness in order to achieve success. The purpose of this study is to determine strategies that can be used by interior business actors, especially contractors, to increase the success of the projects they are working on. The survey method is used to collect data from a sample of approximately 30 project managers and other interior project managers (designers, consultants, supervisors). Quantitative data analysis is carried out to evaluate the relationship between variables and then to determine strategies for increasing project success with expert validation.** **Keywords : Project management, Projects success strategies, Interior projects**
Harmadi **ERCICSTR1902060**	**Evaluation Criteria System in the Tender Process of EPC Project in Oil & Gas Company to Improve Project Performance** **Harmadi** **Faculty of Engineering, Majoring Civil Engineering, Program Project Management, University of Indonesia, Jakarta, Indonesia** **Abstract** **Some EPC projects in Indonesia have failed to meet performance targets. The phenomenon that most occurs is the existence of project delays and changes in the scope of work. This happened because of the poor performance of the EPC contractor. The performance of the EPC contractor in implementing the project is closely related to the qualifications and technical capabilities of the contractor. Incorrect selection of contractors will have a risk impact on project execution. The purpose of this study is to develop a method of selecting contractors especially in EPC projects within the Oil & Gas Company so that the potential risks that affect to the performance can be captured and mitigated from the beginning. This study uses primary and secondary data obtained from archives and questionnaires. The analytical hierarchy process (AHP) method is used to select criteria for alternative risk impacts in project execution by EPC contractors. Criteria for selecting contractors are evaluated based on project risk factors. From the results of this study we will obtain risk-based criteria in the tender process (contractor selection) that will be used to select the best EPC contractor and part of risk mitigation for the company if they choose the contractor.**
	A Review of Toxic and Non-Toxic Cyanobacteria Species Occurrence in Water Supplies Destined for Maize Meal Production Process: A Case Study of Vhembe District **Mutoti Mulalo** **Department of Hydrology and Water Resources, University of Venda, Thohoyandou, South Africa**

Mutoti Mulalo
ERCICSTR1902061

Abstract

Cyanobacteria or blue green algae have been part of the human diet for thousands of years, based on archaeological evidence from 14,000 years before present in Chile. Cyanobacteria can multiply quickly in surface waters and form blooms when favorable conditions prevail, such as high temperature, intense light, high pH, and increased availability of nutrients, especially phosphorous and nitrogen, artificially released by anthropogenic activities. Consumption of edible cyanotoxins such as Spirulina may reduce risks of cataracts and age related macular degeneration. Sulfate polysaccharides exhibit antitumor, anticoagulant, anti-mutagenic, anti-inflammatory, antimicrobial, and even antiviral activity against HIV, herpes, and hepatitis. In humans, exposure to cyanotoxins can occur in various ways; however, the oral route is the most important. This is mainly through drinking water, or by eating contaminated foods; it may even involve ingesting water during recreational activities. This paper seeks to present a review on cyanobacteria/cyanotoxin contamination of water and food and implications for human health. In particular examining the water quality used during maize seed that passes through mill grinding processes. In order to fulfil the objective, this paper starts with the theoretical framework on cyanobacteria contamination of food that will guide review of the present paper. A number of methods for decontaminating cyanotoxins in food is currently available. Therefore, physical, chemical, and biological methods for treating cyanotoxins are reviewed and compared. Furthermore, methods that are utilized for detecting and identifying cyanobacteria present in water and food were also informed in this review. This review has indicated various routes through which humans can be exposed to cyanotoxins. Accumulation of cyanotoxins, mainly microcystins, in food has raised an awareness of the importance of food as microcystins exposure route to human body. Therefore, this review demonstrates the importance of expanding research on cyanobacteria/cyanotoxin contamination of water and food for water treatment and water supply management, with focus on examining water for domestic use. This will help providing information regarding the prevention or minimization of contamination of water and food, and also reduction or removal of contamination through treatment processes and prevention of recontamination in the distribution system.

Keywords: Cyanobacteria, food contamination, water containers, biofilm, cyanotoxin

Aryartha Soepardi
ERCICSTR1902063

Improvement Procurement Planning Process of Equipment and Materials in Engineering Procurement Construction (EPC) Project to Enhance Time Performance

Aryartha Soepardi
Civil Engineering Department, Faculty of Engineering, Universitas Indonesia, Jakarta, Indonesia

Abstract

The procurement process of equipment and materials in the EPC project are able to reach 60% to the overall project time. A problem that often arises are equipment and materials which not yet or is not conform to the PO or Project Specification are sent to the site. This condition results an additional work or rework. The additional time to resolve this problem could be one of the causes of project completion delays. One of the way to prevent project completion delays is to detect and control risks at the procurement stage.

The purpose of this study is to recommend the improvement procurement planning for the equipment and materials by implementing Equipment Critical Rating at the procurement stage as an alternative preventive and corrective action for the factors which cause equipment and material unconformity to

	project specifications. **The research method is quantitative descriptive method with a research strategy in the literature review, surveys, case studies and expert validation. The instrument of this research is interviewing experts and questionnaires to professionals who have worked in the EPC project for oil & gas facilities.** **The results of this study are the improvement procurement planning process of equipment and materials by increasing inspection levels at fabrication or manufacturing stage able to reduce delivery of non-conform equipment and materials to specifications and so it supports improving project time performance.** **Keywords: Procurement Process, Quality, Delay Project, EPC Project**
 **Afdal Julianto** **ERCICSTR1902064**	**Investment Analysis of The Project Construction Corn Grain Dryer Factory Based on Risk** **Afdal Julianto** **Faculty of Engineering, Civil Engineering Departement, University of Indonesia, Jakarta, Indonesia** **Abstract** **Investment in the construction of corn grain dryer factory to support food infrastructure and development of agro-based upstream industries is still lacking in Indonesia, both government-owned and private-owned, especially in areas outside Java (remote area). The problem of loss and investment risk which often arise before and after the factory operates becomes a major problem causing a lack of interest for investors. Conventional investment analysis methods does not consider risk into their calculation of investment. This study analyzes the feasibility of investing based on the risks that arise during and after the construction of the factory. The research method used in this analysis is based on primary data which is then processed using Monte Carlo simulation and risk analysis approach based on AHP (Analytic Hierarchy Process) method conducted by study of literature, interviewing, survey and expert validation. The results of this study are expected to provide recommendations or input for private and government investors to investing in the construction of corn grain drying factory in Indonesia.** **Keywords: Factory Investment, Risk Analysis, Analytic Hierarchy Process**
M. Darmawansyah A **ERCICSTR1902067**	**Framework Development of Planning and Controlling Cost Contingency in Highrise Building Project** **M. Darmawansyah A** **Civil Engineering Department, Faculty of Engineering, University of Indonesia, Depok, Indonesia** **Mohammed Ali Berawi** **Civil Engineering Department, Faculty of Engineering, University of Indonesia, Depok, Indonesia** **Abstract** **The growth of construction in Indonesia is growing fast. Many of technology has been found to help the quality of construction or cost efficiency. The performance of project via the cost is one of the key factors of a successful project. In Highrise building project sometimes have cost overrun within the project caused by cost contingency. This study is to develop a framework of planning and controlling cost contingency to minimize the cost overrun. This study conducted by identified risks related to cost so that the project can including the amount of cost contingency from beginning of the project to avoid the cost overrun. The research method with statictic analysis using monte carlo**

	simulation and risk analysis approach based on method conducted by study of literature, interviewing, survey, and expert validation. This study determines the contingency cost estimation to determine the greatest risk that influence and relationship to the value of contingency in highrise building projects based on the risk register (a list that contains risks, mitigation of risks, impacts, and risk frequencies that may occur in highrise building projects. Cost contingency obtained will be an estimation model for highrise building project **Keyword: Cost contingency, Risk analysis, Cost overrun**

LISTENERS

Himani Bhoi **Department of Physics, University College of Science, Mohanlal Sukhadia University, Udaipur, Rajasthan, India** **ERCICSTR1902056**
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Eunsung Kang **Master Degree of Business Law, Universitas Pelita Harapan, Jakarta, Indonesia** **ERCICSTR1902066**

Upcoming Conferences

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- 2nd ICSTR Bangkok – International Conference on Science & Technology Research, 07-08 February 2019
- 3rd ICSTR Dubai – International Conference on Science & Technology Research, 26-27 February 2019
- 2nd ICSTR Singapore – International Conference on Science & Technology Research, 15-16 March 2019
- ICSTR London – International Conference on Science & Technology Research, 11-12 April 2019
- ICSTR Rome – International Conference on Science & Technology Research, 03-04 May 2019

- ICSTR Prague – International Conference on Science & Technology Research, 06-07 June 2019
- 2nd ICSTR Malaysia – International Conference on Science & Technology Research, 28-29 June 2019
- ICSTR Lisbon – International Conference on Science & Technology Research, 27-28 June 2019
- 3rd ICSTR Singapore – International Conference on Science & Technology Research, 28-29 June 2019
- 2nd ICSTR Bali – International Conference on Science & Technology Research, 11-12 July 2019
- 2nd ICSTR Budapest – International Conference on Science & Technology Research, 11-12 July 2019
- 2nd ICSTR Mauritius – International Conference on Science & Technology Research, 21-22 July 2019