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Authors: Shatha A. J. Ibrahim

Paper Title: Determining Noise Zones in the Laboratories of the College of Engineering at the University of Al-Mustansiriyah

Abstract: The aim of this work was to determine the noise zones in twelve main labs of the College of Engineering at the University of Al-Mustansiriyah and to identify risk zones for users of the labs (students, staff and researchers) to prevent or reduce exposure. The background noise was measured in all labs and was found to range from 50 to 65 dBA. Eight labs (computer skills, computer and logic, computer, polymers and chemical, soil mechanics, structure material, metal inspection and air conditioner & refrigeration) had noise levels that were considered acceptable (less than or equal to 80 dBA), two labs (sanitary and hydraulic) would need to implement a hearing conservation program because the noise level was 85 dBA, and two labs (structure and workshop) exceeded the permissible limit, reaching values of 110 dBA; these labs require strong rehabilitation such as replacement of noisy old machines by quieter new machines, redistribution of equipment, reduction of ceiling height and addition of sound insulation material for the walls and ceiling.

Keywords: background noise, laboratories, noise sources, noise zone.

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2.

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Paper Title: Analytical Study of Coke Drum Skirt Support Hot Box

Abstract: Delayed coke drums are operated under severe conditions of cyclic heating and forced cooling that apply repetitive thermal stresses to the drum walls and the skirt. Since thermal cycling is most severe near the bottom of the coke drum, where temperatures can reach up to 1000°F, the skirt and other attachment welds are just as prone to cracking and premature structural failure as the vessel wall. The purpose is to determine a skirt / "Hot-box" junction geometry which will minimize thermal gradient stresses and improve fatigue life. The process flow of coke drum along with the temperature gradient due to coking process and the effect of thermal stresses on the skirt shell junction/ hot-box using finite element model. In present project work comparative analysis of hot box is done by analytical, FEA using ANSYS 13. Study demonstrates that by modifying the dimensions of the hot box such as length, will affects the fatigue life of coke drum. This appears to be due to the longer hot-box length, which results in a more gradual thermal gradient and also moves the gradient lower on the skirt away from the welded connection.

Keywords: Coke drum, Hot box, fatigue life

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3.	**Authors:**	**Shantu Ghose, Debangshu Barua, Ashab Uddin, Animesh Roy Chowdhury, Stabak Das**	
	Paper Title:	**Design of a Hybrid Power Generation System for a Remote Area in Bangladesh Combining Solar & Wind Power**	
	Abstract: This project aims at designing an off grid solar-wind hybrid system for a remote locality. First of all, availability of solar and wind resources for a particular location in Chittagong has been checked. According to the solar irradiance and wind speed data Parki Sea Beach has been chosen as project site which is situated in Gahira, Anwara thana under southern part of Chittagong, Bangladesh. Different combinations have been selected by using HOMER in order to find minimized solution considering both cost and electricity production. **Keywords:** Hybrid Power System, HOMER, Weibull function. **References:** 1. www.powerdivision.gov.bd/user/brec1/30/1 2. http://www.bpdb.gov.bd/bpdb/ 3. http://www.parjatan.gov.bd/parki.php? Category=75 4. Salahaddin A. Ahmed "Comparative study of four methods for estimating Weibull parameters for Halabja,Iraq". ISSN 1992 - 1950 ©2013 Academic Journals 5. Paritosh Bhattacharya, "A Study On Weibull Distribution For Estimating The Parameters", CEM, Kolaghat, Midnapore, India. ISSN 1842-4562, Journal of applied quantative methods 6. NREL,"HOMER, the micropower optimization model", Available from National Renewable Energy Laboratory 1617 Cole Boulevard, Golden, Colorado 80401-3393303-275-3000 7. Using HOMER® Software, NREL's Micropower Optimization Model, to Explore the Role of Gen-sets in Small Solar Power Systems Case Study: Sri Lanka T. Givler and P. Lilienthal 8. Leng, G., "Distributed Photovoltaic Demand-Side Generation: An Economic Evaluation for Electric Utilities" - Master Degree Thesis, University of Massachusetts Lowell, MA, USA, November 1993.	**12-15**
4.	**Authors:**	**Amita Kumari**	
	Paper Title:	**Application of Optimization Techniques on Brain MRI for Abnormal Intrusion Detection**	
	Abstract: Brain neoplasm/tumor is defined as any abnormal growth of cells in the brain. Basically brain tumors have variety of shapes and sizes. It can occur at any location and in different intensities. It can be Benign and Malignant. Benign tumor is not cancerous. So different techniques are used to solve the problem Clustering aims at representing large datasets by a fewer no. of prototypes or clusters. It brings simplicity in modeling the data and thus plays a central role in the process of knowledge discovery and data mining. In this method a hybrid approach for classification of brain tissue in MRI based on Particle Swarm Optimization (PSO) and Support Vector Machine (SVM) wavelet based texture feature are extracted from normal and tumor region by using HAAR wavelet. These features are given as input to the SVM classifier which classified them into normal & abnormal brain neoplasm. The algorithm incorporates steps for pre-processing, image segmentation and image classification using SVM classifier. **Keywords:** AIS, ACO, PSO, SVM, SI, HAAR wavelet **References:** 1. A .Kharrat, K Gasmi , M Ben Messaoud , N Benamrane and M Abid . " A hybrid approach for automatic classif ication of brain MRI using genetic algorithm and support vector machine", Leonardo journal of sciences, Issue 17, pp 71-82, July-Dec ,2010. 2. E F Badran, E G Mahmoud, N Hamdy "An algorithm for brain tumor in MRI images", International Conference on Communication Computer Engineering and Systems (ICCES), Networking & Broadcasting, pp 368-373, June, 2010. 3. N Abdullah, Lee Wee Chuen; U K Ngah, KA Ahmad, "Improvement of MRI brain classification using Principles Component Analysis", IEEE International Conference on Control System, Computing and Engineering (ICCSCE), ,pp 567-571, March, 2011. 4. M Hasanzadeh ,S Kasaei."Multispectral brain MRI segmentation using genetic fuzzy systems" international conference on communication ,networking and broadcasting(ISSPA),pp 1-4,June,2001. 5. V.vapnik "the nature of statistical learning theory, springer-verlag, newyork, 1995. 6. S N Deepa, B A Devi ."Artificial neural networks design for classification of brain tumor" IEEE International Conference on Computer Communication and Informatics(ICCII), pp 1-6, 2012. 7. E. I.Zacharaki ,Sumei Wang ,S Chawla, Dong Soo Yoo, R Wolf ,E.R Melhem, C.Davatzikos."MRI based classification of brain tumor type and grade using SVMRFE".IEEE Symposium on bioengineering,pp-1035-1038,April ,2009. 8. M .C Clark, L. O Hall, D.B.Goldgof, R.Velthuizen, F.R. Murtagh, and M.S Silbiger. "Automatic tumor segmentation using knowledge based technique, IEEE transaction on medical imaging, vol 17,no 2,pp-187-192,April,1998. 9. W. E. Reddick , J.O Glass, E. N. Cook , T. D Elkin ,R. J. Deaton. "Automated segmentation and classification of multispectral magnetic resonance images of brain using artificial neural networks", IEEE transaction on medical imaging, vol 16, no 6,pp 911-918 ,1997. 10. Huazhu Song , Zichun Ding, Cuicui Guo , Zhe Li, Hongxia Xia. "Research on combination kernel function of Support Vector Machine." International Conference on Computer science and software engineering, pp-345-356, 2008. 11. Mcconnell Brain Imaging centre (june 2006) stimulated data base [online] available http://www.bic .mni.mcgill.ca /brainweb). 12. Y.J .Kennedy, R.Eberhart. "Particle Swarm Optimization." IEEE International Conference on Neural Network,pp-1942- 1948, 1995. 13. Vladimir N. Vapnik "The Nature of Statistical Learning Theory" New York: Springer –Verlag, 2000.	**16-19**
5.	**Authors:**	**Mostafa Haghi, Elham Javadi, Hessam Khazraj**	
	Paper Title:	**Evaluation of Extension of Virtual Channel on Delay and Throughput in NOC**	
	Abstract: When designing a System-on-Chip (SOC) using a Network-on-Chip (NOC), delay and throughput are two critical factors to optimize. In fact to improve performance of the system designer should reduce the Delay cycles and raise the Throughput, but always there are some loss, to keep balance between these two elements designer has to adjust PIR in a certain range, to grant this, we need to know, for which purpose the system is going to be designed, it strictly depends on whether high Throughput or low Delay cycle is required. Extending the number of Virtual Channel (V.C) is a way to achieve this target. Here in this work we have selected three networks with in order 64,512 and 1024 IPs. The effect of V.C extension is evaluated on each one. We will observe, while varying the range of PIR , obtained results of simulator are different for V.C= 4,8,16, as we extend the V.C, delay cycle is	**20-24**

reduced but in expense of more cost in some cases. In this paper we identify the take off points for Delay cycles and the points that has not be crossed by PIR rate level, to get a better trading off between effective elements of networks. Performance evaluation is conducted based on flit-accurate and open source System C simulator, BOOKSIM.

Keywords: NOC, SOC, PIR, VIRTUAL CHANNEL, DELAY CYCLE

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Authors: **Cheruku Ravikumar, K. L. Sudha**

Paper Title: **Legendre and Polyphase Sidel'nikov Sequence for Applications in Space Communication**

Abstract: Pseudo Random Noise (PRN) codes are essential part in space communication. A pseudo random noise binary sequence is a semi-random sequence in the sense that it appears random within the sequence length, fulfilling the needs of randomness. The objective of the paper is to generate different types of PN sequences i.e. Legendre sequence, Weil sequence, Sidel'nikov sequence and polyphase Sidel'nikov sequence which are used for space communication applications and compare their randomness characteristics. Legendre sequences are generated based on the ON-THE-FLY code generation method. Weil sequence is obtained by performing EX-OR of the Legendre sequence and a circular shift of Legendre sequence. In this paper, the different types of PN sequences are used to construct the spread spectrum communication system with BPSK modulation.

Keywords: Legendre sequence, Weil sequence, Sidel'nikov sequence, Finite field.

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7. — **29-31**

Authors: **Vedprakash C. Marlapalle, P. J. Salunke, N. G. Gore**

Paper Title: **Analysis & Design of FRP Jacketing for Buildings**

Abstract: The objective this paper is to discuss effectiveness of FRP jacketing method used to improve the performance of deteriorated structure, this technique successfully applied on the structure. Also Design method, field application techniques, Advantages, Disadvantages and suitability have been discussed.

Keywords: FRP, Jacketing, Retrofitting, Concrete, Strengthening, Repair

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Authors: **Nivedita S. Deshmukh**

Paper Title: **Energy Efficient Content Sharing in Smart Phones using Wi-Fi Networks**

Abstract: Because of increasing popularity of mobile devices their applications and infrastructure tends to advance quickly. The use of Smartphone's for the efficient content sharing among the wireless Delay Tolerant Networks (DTN) is growing worldwide. There are many methods recently presented by various researchers for efficient content sharing in DTN. However these methods are suffered from the various limitations. Hence this area of research is still challenging problem for researchers. Most of methods presented for content sharing are based on prediction of whether two nodes would encounter each other, regardless of considering the time and place of the encounter. But this method has many limitations which were later overcome by recently presented method. The recent method presented is based on discover-predict-deliver which is practically resulted as improved and efficient content sharing scheme for delay-tolerant Smartphone networks. However the limitation of this method is excessive battery power consumption which limits the lifetime of Smartphone. In this paper we have designed the method for android Smartphone in order to minimizing the batter power consumption. This method tries to use the idle times of Smartphone in order to stop applications like , Bluetooth and various other applications which are consuming the battery power during the idle condition. Also while sharing contents we will focus on file transfer rate, transmission cost and security.

Keywords: Delay-Tolerant Networks; Hot Spot;Wi-Fi.

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9.

Authors: **Vikas Govalkar, P. J. Salunke, N. G. Gore**

Paper Title: **Effect of Curtailment of Shear Wall in Bare Frame and Infilled Frame**

Abstract: The following report explores about concept of shear wall, bare frame and infilled structure. In past the high rise buildings structures offer some major advantages but also pose serious challenges to designers in seismic and wind loading and structure economically not feasible. Structural engineer added some other elements like braces, shear wall, dampers, and isolators to improve the performance of the structure, but structure still become uneconomically and it is also complex to design. Adding some other element is not sufficient solution to make structure economical. Now, to avoid this problem in this report talk about non structural element such as masonry wall, which are already exist elements in a structure. Structural engineer accepted that if the properties of infill wall or masonry wall considered in structural design it will helps to enhance the strength and stiffness of the structure. But in India infill wall is not considered as a structural element so here lot of research and development required regarding with consideration of infill wall in all point of view. In this report discussed about the effect of curtailment of shear wall in bare frame and infilled frame for this lot of literature survey are included regarding with this project. Some models are analysed in SADD Pro V8i such as Bare Frame, In filled Frame, Bare Frame with shear wall,

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Infilled Frame with shear wall, and Bare Frame with curtailed shear wall and infilled with curtailed shear wall and get the result in terms of storey drift, bending moment, shear force and axial force. From this result understand the behavior of the structure in different condition and concluded that infilled frame structure are superior to the bare frame structure. Infill wall improve the strength and stiffness of the structure and reduce the storey drift. If shear wall provided in infilled structure then, it will help to reduce the bending moment and shear force in beam and column. It is not necessary to provide shear wall up to whole height of the structure. If shear wall are curtailed in Bare Frame and infilled Frame up to certain height then concluded that the Infilled frame gives better result Than the Bare frame.

Keywords: Bare Frame, Diagonal strut, Infilled Frame, Shear wall.

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10.

Authors: **Vishal U. Misal, N. G. Gore, P. J. Salunke**

Paper Title: **Analysis and Design of Prestressed Concrete Girder**

Abstract: In this present study, cost analysis and design of prestressed concrete girder and reinforced concrete girder is presented. The aim and objective can be summarized as to analyze and design the concrete girder under a IRC class 70 R loading. To formulate the entire problem for a couple of span under the loading mentioned above to obtain shear force and bending moment at regular intervals along the beam. To use the software STAAD PRO for the analysis and design of prestressed concrete girders. Before using the software for analysis it will be validated by comparing its results with the corresponding classical theory result. To carry out the parametric analysis for prestressed concrete I girder and reinforced concrete girder. To calculate the quantities of concrete and steel required

as per the analysis and design carried out for the girders and to carry out the comparative study for the same.

Keywords: Reinforced concrete girder, Deck slab, I girder, Prestressed concrete.

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Paper Title: **Oil by-Product Removal from Aqueous Solution using Sugarcane Bagasse as Absorbent**

Abstract: Recently many researchers have proved the capability of agricultural solid wastes as adsorbents to remove many types of pollutants including petroleum hydrocarbons. This study was examined oil adsorption capacity of modified sugarcane bagasse to explore their practical application in treating oil spills within water. All type of oil by-products are toxic and cause severe problems to aquatic environment. Sugarcane bagasse can remove some oil by-product, although need modification. The oil by-product capacities of sugarcane bagasse vary, depending on the pH of solution, initial oil concentration, adsorbent dosage and its size, process temperature and salinity of aqueous. Maximum adsorption capacity of modified micro size bagasse was seen about 20g oil by-product per 1g sorbent.

Keywords: Oil by-Product, sugarcane bagasse, pollutants, modification.

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