

**JOURNAL OF ENGINEERING, SCIENCE AND MANAGEMENT
EDUCATION
ISSN : 0976-0121**

Abstract of Research Papers Volume-6 Issue-I(January-March-2013)

PAPER-1

Kinetics and Mechanism of Pd(II) Catalyzed Oxidation of Ethylene Glycol by N-bromobenzamide in Acidic Medium

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***Abstract :** Kinetics of oxidation of ethylene glycol (EG) by NBB (N- bromobenzamide) has been studied in aq. HClO₄ with PdCl₂ as catalyst and in the presence of Hg (OAc)₂ to ensure oxidation by pure NBB. The order of reaction with respect to NBB was unity. However the rate decreased with the increasing concentration of [NBB]⁰. The rate was directly proportional to Pd(II) for EG. The retarding effects of HClO₄ benzamide, Cl⁻ and AcOH on the rate of oxidation were observed. A mechanism consistent with the observed kinetic data in proposed..*

PAPER-2

Variational Finite Element Approach to a Heat Flow Problem in Human Limbs

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***Abstract :** An attempt has been made to study cross sectional temperature distribution in in-vivo tissues of a human limb employing variational finite element approach. The outermost surface of the limb is assumed to be exposed to the atmosphere. The physiological and physical parameters like rate of metabolic heat generation (rmhg), blood mass flow rate (bmfr) and thermal conductivity of tissues are assumed to vary in the sub regions independently. Numerical results have been obtained for various cases of practical interest..*

PAPER-3

Flow Analysis of Wind Turbine Blade

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Abstract : Blade design and engineering is one of the most complicated and important aspects of current wind turbine technology. Today engineers need to design blades that extract as much energy from the wind as possible throughout a range of wind speeds and be durable, quiet and cheap. As aerodynamic is a highly quantitative field of science, generally the aerodynamic data or properties are experimentally measured in wind tunnels. In order to establish 2D flow over the wing, they are mounted against both the sidewall of Wind Tunnel, lift is obtained from the pressure distribution on the ceiling and floor of the tunnel while drag is obtained from measurements of the velocity downstream of wing. This has the disadvantage of only recording readings at predefined gauge locations for some fixed parameters at a time. Apart from above experimental method the important parameters of a wind turbine blade have also been estimated analytically on the basis of elementary blade-element theory. Obviously this is time consuming, expensive to undertake and the flow behavior cannot be visualized around the blade. As a result a generic 2-D finite element analysis approach has therefore been developed as an alternative method of flow characteristics appraisal, which is helpful in finding out complex solution and simulate the flow behavior around the blade. These techniques could be used for grading computer programme for a particular problem. In the present work, the flow properties around NACA 4424 airfoil using FEM have been simulated. With a view to optimize the flow behavior, influences of cross section and variation in angle of attack have been analyzed. The optimum twist of a wind turbine blade is examined and results for a typical airfoil cross-section show that the optimum angle of attack decreases from the maximum-lift-coefficient angle of attack at the blade root to the blade tip which matches with the result obtained experimentally and from the blade-element theory.

PAPER-4

Training and Development: A Tool for Employee Effectiveness

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Abstract : Training and Development has become an essential component of the organizational development process. The need for superior productivity has become a global phenomenon and this can be achieved by high quality training and development. Considering the competitive environment, organizations are finding it necessary to devote resources for training purposes. Training and Development is an important tool for organized development of knowledge, skills and attitudes of the workers in order to perform the assigned tasks competently. New employees inducted into the organization may have limited skill sets which may not be compatible with the job requirements. This necessitates training and development to enable them to perform the tasks in a superior manner which will help the organization to grow and perform better than the competitors. This research makes use of primary and secondary data collection techniques. Survey method was used in order to carry out the study.

PAPER-5

Effectiveness of Interactive Learning Material on Awareness

Towards Environment

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Abstract : Today due to rapid technological advancements and achievement, it is necessary to prepare the students to suit the modern trends. The instructor's trainers and teachers have an important role in this regard. They must provide various possible opportunities such as interactive method, use of computers, & internet to the students so that they learn these concepts, the instruction that combines sound learning principles with the functionality of computer and interactive learning method form a potentially effective teaching method along with the development.

Only instruction would not serve the purpose of learning .Diagnosis and remediation is a basic need of curriculum transaction. The question is how far technology could help in this direction. A study to check the effectiveness of interactive learning material on awareness towards environmental issues amongst elementary school students of VIII standard students. The investigators randomly selected 44 VIII standard elementary school students of Chhindwara District. Standardized test of environmental awareness have used for pre and post test. The design was used pre and post two-group static experimental design. The data collected in this manner was analyzed using different statistical techniques. The salient findings of the study are (i) there is no significant difference in the mean awareness score of control and experimental group in the pretest (before given treatment both the group) (ii) There is a significant difference in the mean awareness score of control and experimental group in the posttest (After given treatment lecture method use for control group and use of ILM to experimental group). Hence, the use of interactive learning material enhances the awareness toward environment significantly.

PAPER-6

Protection of Reinforced Concrete Structures Against Corrosion- A Review

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Abstract : Corrosion of steel bars in reinforced concrete (RC) structures has been recognized as one of the major causes of premature damage of concrete structures, as it reduces the life and durability of structures. Corrosion of steel in RC structures causing cracking and spalling of the concrete cover has been a worldwide problem in construction industry for many years. Corrosion of steel bars in concrete structures is mainly initiated by chloride or carbon attack. This paper presents the factors initiating corrosion, its effects, detection techniques and then a review of different methods to protect steel from corrosion.

PAPER-7

Computer Simulation of Rod Extrusion Process Using Conical Dies

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Abstract : In this study computer simulation of rod extrusion process is carried out considering different geometrical and process parameters. The modelling of contact between container, billet and die is attempted using dynamic/explicit scheme of ABAQUS software considering three extrusion ratios; three die angles; three ram velocities and three fictional conditions. Results are critically analysed to assess the effects of these parameters.

PAPER-8

Virtual Spatial Workspace Based Representation of Directed Graphics for Visually Challenged

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Abstract : Absence of sight severely limits the accessibility of graphics for the visually challenged persons. The powerful aspect of vision is the ability to view multicontext information simultaneously which is missing in non visual senses such as audio and touch. With maturity and availability of low cost audio displays, research attempts have been made to represent dynamic graphical information using speech and nonspeech audio modalities. This paper presents a novel technique to represent virtual directed graphics through audio modalities by employing a concept of virtual spatial workspace and multicontext switching. Based on this technique, a software tool on PC is reported which allows a blind user to comprehend, navigate and create virtual directed graphics independently. A significant feature of this tool is the automatic generation of directed graphic image such as flowchart in traditional format for the sighted as well as compatible format for tactile embossing. This paper also presents an experimental study with twelve blind subjects to assess for the comprehension of spatial aspects of directed graphics using the developed tool. Subsequently a pilot study with five blind subjects is reported for comprehension and creation of a directed graphic without sighted assistance.

PAPER-9

Impact of FDI on Retail Market of Indore Region

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Abstract : The decision of allowing foreign direct investment (FDI) in the retail sector has been a debate in India for a long period of time. FDI has been permitted in several sectors by the government of India; however, retail has been an issue because of its expected effect on several sections of the economy, particularly on small businesses. Opposition to liberalizing FDI in this sector raises concerns about employment losses, unfair competition resulting in large-scale exit of incumbent domestic retailers and infant industry arguments to protect the organized domestic retail sector that is at a nascent stage. In the past few decades large retailers have experienced substantial growth around the world. Evidence suggests while the impact of entry by large retail chains on employment and mom-and-pop stores is mixed, there can be substantial benefits to consumers in the form of lower prices and lowered food price inflation in particular. Similarly, by employing improved distribution and warehousing technologies, large retail chains are in a position to provide better price to farmers. Thus we suggest that allowing entry by large international retailers into the Indian market may help tackle inflation especially in food prices. Moreover technical know-how from foreign firms, such as warehousing technologies and distribution systems can improve supply chain efficiency in India, in particular for agricultural produce. Better linkages between demand and supply have the potential to improve the price signals that farmers receive and also serve to enhance agricultural and other exports. In this research we have tried find out the impact of foreign Direct Investment on the retail market in Indore Region and develop new insight over FDI and Retail so that we can understand and suggest the people whether or not to panic or worry about it.

PAPER-10

Level Average Response Analysis and Optimization of the Process Parameters of Lapping Operation by Taguchi Approach for Material

Removal Rate of Cast Iron

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Abstract : *Lapping in particular seems like a miraculous process, as it can produce surfaces which are perfectly flat, perfectly round, perfectly smooth, perfectly sharp, or perfectly accurate. Under the right circumstances, it can impart or improve precise geometry (flatness, roundness, etc.), improve surface finish, improve surface quality, achieve high dimensional accuracy (length, diameter, etc.), improve angular accuracy (worm gears, couplings, etc.), improve fit and above all sharpen the tools. This paper presents the research that has been carried on lapping process for calculating material removal rate for machining Cast Iron as it is the most commonly used material in manufacturing industries. Statically method of Taguchi will be used in this work in order to obtain more reliable and optimum results. The influences of individual lapping parameters on the material removal rate can be clearly seen and observed and level average response analysis on averaging the experimental results is achieved at each level for each parameter. By this method time and cost savings were made, and the results were optimized.*

PAPER-11

Spatial Multicriteria Decision Analysis for Residential Land Use Suitability Using Geophysical Responses through AHP

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Abstract : *An attempt has been endeavored in the Analytical Hierarchical Process of land use suitability for real estates of in conjunction with Erosion Response using spatial technique for Pimpri-Chinchwad-Municipal Corporation (PCMC) area. This is just an amalgamation of a heuristic algorithm that provides good approximate, but not necessarily optimal solution to a given model in the area under consideration. To derive ratio scales from paired comparisons in employing such an algorithm, one may be able to precisely measure the 'goodness' of the approximation. In the present envisaged study, the factors like elevation, geomorphology and geology are analytically and logically encompassed to make a gainful research through a scientifically proven method, which has been depicted in this present paper in a sequential manner.*

PAPER-12

Suitability of Performance Based Appraisal System

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Abstract : *The paper is based on research study conducted in 28 management institutes of State of Kerala. It states of the need of designing the scientific performance appraisal system for faculty members of higher educational institutes. The paper traces the history and statutory provisions for designing and implementing performance appraisal system for faculty members. The recommendations of various commissions such as S. Radhakrishnan, D. S. Kothari, National Knowledge Commission, Yashpal committee, National Policy on Education (1968 & 1986) Program of Action (1992) have been very briefly stated. The views of 28 Directors/principals and 142 faculty members are gathered on pre defined validated criteria for suitability of performance based appraisal system (PBAS) recommended by UGC for faculty members of management institutes. The conclusions on suitability of PBAS are noted at the end of the paper recommendations are given to improve the performance appraisal system for faculty members of management institutes.*

PAPER-13

Impact of Resolution Bandwidth in Estimation of Link Reliability for Digitally Modulated RF Carriers

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Abstract : *Spectrum Analyzers are a necessary and vital tool at Earth Stations for uplink Carrier lineup and for any system performance measurements in the radio frequency (RF) region of a communication setup. The Spectral Component display on the analyzer provides an effective and efficient means for estimating the reliability of the link. For accuracy and reliability of the measurement, it is essential to take into consideration the data modulation scheme, the intermediate frequency (IF) filter bandwidth of the analyzer and the presence of the unavoidable noise power with the desired input.*

PAPER-14

Reactive Power Cost Evaluation Considering Voltage Security Margins

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Abstract : *The reactive power output of each synchronous generator is divided into three regions and cost of reactive power in each region is defined separately. A Particle Swarm Optimization- Sequential Quadratic Programming (PSO-SQP) algorithm is developed to minimize the cost of reactive power generation along with real power generation to alleviate the bus voltage violations. Reactive power output regions of generators needed integer variable for their selection; therefore, heuristic method (if-then rules) is applied along with PSO-SQP algorithm to alleviate the need of integer variable. The proposed approach is applied on IEEE-14 bus systems. In this paper an objective function is formulated to minimize the cost of real and reactive power while maintaining the minimum specified Voltage Security Margin (VSM) along with other constraint..*