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PAPER-1

**Transient Temperature Distribution in Annular Cross-Section of Human Limbs
With Cool Environment**

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Abstract: *Transient temperature distribution in Annular Cross-Section of a human limb has been obtained by using Pseudo Analytic Finite partition Method. The Mathematical Model considered here incorporates the effect of blood mass flow rate and metabolic heat generation. To have better approximations, the assumptions regarding physical and physiological parameters have taken more and more nearer to the real ones. The region under study has been divided into three natural sub-regions. The blood mass flow rate and metabolic heat generation are taken as function of radial coordinates in the middle layer. In view of the situation, fluctuation in the limb core temperature is also assumed varying parabolically along the boundary and also with respect of time. The limb under consideration is exposed to the cool atmosphere with negligible insensible perspiration so that heat loss from the surface is due to convection and radiation.*

PAPER-2

STRATEGIC MANAGEMENT IN DEVELOPING COUNTRIES: AN EMPIRICAL STUDY

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Abstract: *The term strategic management is of relatively recent origin and is currently the accepted term for the fields of business policy and planning. However, as a separate field of study, it is still at a fairly young and relatively evolutionary stage. The terms "strategic planning," "policy," and "strategic management" often mean precisely. Whilst conflict about it, confusion and an abundance of jargon characterize scientific endeavor in an emerging field this paper will focus on the following definitions of strategy and determination of the basic long-term goals and the objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goal.*

PAPER-3

Remote Sensing and GIS Application for Watershed Runoff and Sediment Yield Simulations Using Distributed Parameter Model

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Abstract: The present study was undertaken to simulate runoff and sediment yield for a 1200 ha small watershed located in Bhopal district of Madhya Pradesh, using distributed parameter Agricultural Non Point Source (AGNPS) pollution model. Digital elevation model (DEM), geographical information system (GIS) and remote sensing techniques were used for automatic extraction of the model input parameters. Rainfall frequency analysis was carried out using 20 year (1983– 2002) CIAE Bhopal observatory data and magnitudes of rainfalls of various durations were estimated for designing the water harvesting systems and erosion control structures/ measures. The study area is having 1070 mm average annual rainfall and 240.8 mm one day maximum rainfall for 25-year return period. The watershed characteristics such as drainage area, slope and drainage network were extracted automatically using DEM of 30 m resolution. Watershed slope varies from 0 –74% with major area under 0-5% slope range. The watershed soil is vertisols. The generated land use and land cover information from IRS-1C LISS-III satellite data at 88% classification accuracy comprises agricultural land (76%), wasteland (14%) and 3% under other uses. The watershed surface runoff and sediment yield produced were measured at watershed outlet by measuring stream flow and sediment concentrations in stream flows during monsoon seasons of the year 2003-04 to 2006-07 using automatic water level recorder and manual silt load sampling method. During monsoon season on an average 35.5 % (varying from 25.04% to – 45.77%) rainfall resulted into surface runoff. The average sediment yield for watershed for monsoon season is found to be 1.221 t/ha (varying from 0.723 t/ha to 1.979 t/ha) which is within the safe limit of soil loss (1.0 – 2.0 t/ha).

The event oriented distributed parameter AGNPS model was calibrated for simulating watershed runoff and sediment yield by using twenty-five storms of 2003 and 2004 and validated with thirty storms of 2005 and 2006. Input parameters for the AGNPS model were generated successfully with deviations less than 10 per cent from IRS Satellite data, IDRISI, EASI/PACE GIS softwares. For calibration storms, the model simulates surface runoff and sediment yield with average deviation (D_v) equal to –9.29% and –9.64% and coefficient of efficiency (E) equal to 0.960 and 0.949 respectively. For the model validation, the model simulates surface runoff and sediment yield with average D_v of –7.99% and –8.65% and E of 0.966 and 0.960 respectively. The study reveals that GIS and remote sensing techniques can be effectively applied for generating input parameters of hydrological models at watershed scale. The AGNPS model is capable of simulating runoff and non point source pollution (sediment yield) from a watershed with the acceptable level of deviation (average $D_v < 20\%$) under varied soil moisture and rainfall conditions.

PAPER - 4

EXPERIMENTAL INVESTIGATION OF E-DIESEL BLENDS IN A VCR C I ENGINE

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Abstract: *In this work an experimental investigation on performance and emissions analysis of the various blends of ethanol with diesel on a variable compression ratio diesel engine was carried out. The blends of ethanol, diesel and n-butanol are prepared in the volume percentages of 5 to 30% of ethanol with diesel, and with a fixed five percentage of n-butanol are used as a solvent. The experimental tests were carried out to study the performance and emissions of the engine fuelled with these blends of ethanol and diesel at different compression ratios 14, 16 and 18 at different loads. The test results show that the thermal efficiencies of the engine fuelled by these blends were comparable with that fuelled by diesel. However fuel consumption is increased slightly with ethanol diesel, which is due to the lower heating value of ethanol. The emissions characteristics were also studied and it is found that the smoke opacity from the engine fuelled by the blends were all lower than diesel at particular fixed compression ratio but emissions relatively increases at lower compression ratio 16 and 14. The carbon monoxide (CO) emissions were reduced when the engine is operated at its half capacity loads and above, but increased at lower than half capacity loads and low speed; the hydrocarbon (HC) emissions were all higher except for the top loads at high speed.*

PAPER - 5

Analysis of Practices being Used in Curriculum Implementation of Mechanical Engineering Diploma Programme in Mumbai Region

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Abstract: *The quality of passouts of polytechnics depend on effective curriculum implementation using variety of teaching learning methods, media, practicals, industrial visits and training, professional development activities, guidance and counselling and extra-curricular activities. The paper describes the curriculum implementation practices being used in mechanical engineering, lists the parameters for analysing the curriculum implementation, and assesses effectiveness of curriculum implementation on identified parameters, lists factors promoting curriculum implementation and proposes a model for effective curriculum implementation.*

PAPER – 6

Influence of Audio-Visual Techniques of TV Advertisements on Children's Perception in Madhya Pradesh

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Abstract: *Television belongs to the family of audio-visual communication medium. It is able to transmit sounds and images carrying message of a varied nature and for a variety of purpose. It has strong influence on people, in the culture and on other media. It is a widely used telecommunication system for broadcasting and receiving moving pictures and sound over a distance from all around the world. The term may also be used to refer specifically to a television set, programming or television transmission. Television commercials have become one of the most effective, most persuasive, and most popular methods of selling products of many sorts.*

The study attempts to investigate the extent to which children's perception from various age groups and sexes in urban and rural area of Madhya Pradesh gets influenced by the audio-visual techniques and premium offers shown on TV advertisements.

PAPER – 7

Corporate social responsibility starts with individual social responsibility

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Abstract: *Corporation's attitude is influenced by individual's attitude and individuals associated with corporation are its stakeholders who are a part of the society too. Corporate social responsibility starts with individuals. Individual's socially responsible approach should acts as a catalyst and society should progress at a faster rate. Individuals make society and corporations but they seem to be unaware of their hidden potential as their activities can impact a lot on the society at large. Individuals, if feel social responsibility, not only can become a good citizen but also can develop a positive attitude in corporations that would help to improve CSR practices.*

PAPER – 8

Role of Manager (Boss) in Employees Motivation and Retention

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Abstract: Motivation is an important aspect in human behavior and it affects performance and productivity. In motivating to employees role of immediate manager (boss) is very important, it further affects employees' turnover and retention rate in an organization. In this research, researcher was intended to know the key factors which affect employees' motivation, retention and productivity.

PAPER – 9

A CFD BASED HEAT TRANSFER AND FLUID FLOW ANALYSIS OF A CONVENTIONAL SOLAR AIR HEATER

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Abstract: This article presents the numerical prediction of fluid flow and heat transfer in a conventional solar air heater by using computational fluid dynamics (CFD). The effect of Reynolds number on heat transfer and friction factor was investigated. The computations based on the finite volume method with the SIMPLE algorithm have been conducted for the air flow in terms of Reynolds numbers ranging from 3800-18000. A commercial finite volume package ANSYS FLUENT 12.1 was used to analyze the nature of the flow across the duct of a conventional solar air heater. The predictive ability of five different turbulence models, including, standard $k-\varepsilon$ turbulence model, Realizable $k-\varepsilon$ turbulence model, Renormalized Group (RNG) $k-\varepsilon$ turbulence model, standard $k-\omega$ turbulence model, and Shear Stress Transport (SST)- $k\omega$ turbulence model were investigated. CFD simulation results were found to be in good agreement with existing empirical correlation results. It has been found that the Nusselt number increases with increase in Reynolds number and friction factor decreases with increase in Reynolds number.

PAPER – 10

Seedling Growth of *Lantana Camara* in light gaps and shade in Tropical Deciduous Forests of Rewa (M.P.)

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Abstract: *The excessive seedling mortality that characterizes the regeneration of many forest species raises an important management question. Where are the few seedling located that actually survive? What type of site provides the necessary conditions for seed germination, and also allows the new seedling to express an optimal rate of growth relative to its neighbors? The specific combination of environmental condition which describes such a site may be thought of as the "regeneration niche" of a species. To a large extent, the area and distribution of these niches are what regulate the number of seedlings that become established in the forest.*

PAPER – 11

Modeling of Phenothiazine Derivatives as Antimalarial Agents Using 2D-Autocorrelation and CPSA Descriptors

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Abstract: *This study is based on modeling the antimalarial activity of (log IC₅₀) of 16 phenothiazine derivatives using 2D-autocorrelation and CPSA descriptors. The multiple regression analysis reveals that the three parametric model containing GATS5m, GATS6e, and PNSA1 as correlating parameters is the best for modeling the activity of the compounds under study. The results are critically discussed using Cross validation method and Ridge statistics.*

PAPER – 12

The Current Needs for An Undergraduate Programme in Building Technology and Management

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Abstract: *With the liberalization and globalization of Indian economy in 1991, one of the sectors which is continuously growing fast is the building construction industry. One of the major impediments for the growth of the building industry is the lack of competent engineering graduates. From an analysis of the feedback from the employers of building industry, alumni, faculty and students of engineering colleges in Kerala state, it is observed that the current B.E/B.Tech programme in civil engineering does not provide professional competencies expected in the building industry. Hence, it is proposed an innovative B.E/B.Tech programme in Building Technology and Management with a focus on the competencies in building design, construction, finance, marketing and maintenance with IT enabled courses in design and other managerial courses.*

PAPER – 13

An Investigation on Cast-In-Situ Block Pavements laid over different Subbases

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Abstract: The construction cost of conventional flexible pavements is mainly dependent on the cost of aggregates. Scarcity of quality aggregates is a major concern for many project sites in different countries. Alternate pavements that require smaller quantity of aggregates need to be examined for these conditions. Cell-filled concrete pavement promises to be an appropriate alternative. This paper describes a study on evaluation of cell-filled pavements constructed over three different subbases (a) soil-cement (b) water bound macadam (WBM) and (c) laterite boulder and (d) without subbase. A formwork of cells of recycled thin plastic sheet was used to construct flexible, interlocked block pavements. A loaded truck was used to apply 1500 load passes on the test sections for conditioning the pavement sections before carrying out structural evaluation. Surface deflections of the pavement sections were measured using falling weight deflectometer and resilient moduli of pavement layers were estimated from the measured deflections. The equivalent elastic moduli of all cell-filled layers laid over soil cement, WBM and laterite boulder subbases were found to be significantly high. Apart from the reduction in quantity of aggregates, cell-filled pavements are expected to last long with minimum maintenance due to the high strength of surface layer.

PAPER – 14

Effect of Tire Pressure on Design Life of Flexible Pavement

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Abstract: In the past, damage resulted from load application to highway pavements focused primarily on the magnitude and frequency of axle loads. In recent years, the effect of increased commercial vehicles tire pressure on flexible pavements responses has become a subject of great concern. This paper aims to evaluate the effects of tire pressure on the design life of flexible pavements. The Indian Road Congress (IRC) has specified certain tire pressure and load limits per axle that should not be exceeded. However, many commercial vehicles violate these guidelines by carrying additional weights to decrease the transportation cost [2, 12]. These overweighed trucks with higher tire pressure causes severe deterioration in the pavement structure and thus reduces its design life. In this study effect of tire pressure on the pavement life is assessed using KENLAYER software. Pavement materials used and climate conditions prevailing in India are considered in the study. Tensile strain beneath the bitumen layer and the compressive strain above the subgrade are evaluated. These computed strains are incorporated in the fatigue cracking and rutting models to estimate the pavement life for different tire pressures. Results showed that increase in tire pressure from 560 kPa to 1200 kPa reduces the pavement life by more than 70%.

PAPER – 15

Performance Improvement of AODV Protocol using Hybrid Analysis for MANETs

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Abstract: *In this paper a new hybrid multipath routing protocol for MANET called Hybrid Multipath Progressive Routing Protocol for MANET (HMPRP) is proposed. In this work an attempt is made to improve the performance of well known MANET routing protocols, namely, the Ad-hoc On-demand Distance Vector (AODV) routing protocol and use of its preferred properties to formulate a new Hybrid routing protocol using the received signal strength. (1) The proposed routing algorithm optimizes the bandwidth usage of MANETs by reducing the routing overload and overhead. (2) The proposed algorithm also enhance the battery life of the mobile devices by reducing the required number of operations for (i) Route determination (ii) for packet forwarding. Simulation is being done for analysis for the proposed routing algorithm and is compared with standard AODV, OLSR, and ZRP routing protocols. Results shows that proposed algorithm exhibits superior performance with respect to AODV, OLSR, and ZRP routing algorithm in terms of packet delivery ratio, throughput and end-to-end packet delay.*