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Paper Title: Evaluation of Axially Loaded Piles in Sand

Abstract: The load carrying capacity and settlement behavior of the axially loaded pile embedded in layered soils were studied. The piles are made up of cement mortar and timber is placed in sand medium of different densities. The piles are tested in a testing tank for different layer density combinations of homogeneous, loose over dense, dense over loose, loose layer sand witched between two dense layers and vice-versa etc. The experimental results shows that the ultimate load carrying capacity of the pile is found to be maximum and minimum in homogeneous layered soil of higher and lower density respectively. The load carrying capacity of a cemented pile is greater than timber pile for all types of densities. The rate of settlement is much greater in timber pile with low density sand.

Keywords: wooden pile, cemented pile, sand.

References:

Authors: Ahmed Nafi Aziz

Paper Title: Temperature and Conduction Heat Transfer Equations Development Using Three Dimensional Techniques

Abstract: In this paper, new equations of temperature and the quantity of conduction heat transfer without and with heat generation for plan wall is presents. Temperature and Conduction heat transfer Equations are essential in application in all material, bodies or structure that has the same shape like the plan wall. For the plan wall without heat generation use wood material like plane wall shape where assumed that it has width, temperature value on the first side and on the second side, value of cross sectional area, value of thermal Conductivity. Therefore, one can determine the temperature at any point with different distance to study and analysis any parameter along the width of the wood material and the quantity of heat transfer from the first side to the second side in the wood material. For the plan wall with heat generation, the limestone material in plane wall shape assuming the width is present with the temperature value on the first and second side. Additionally, the value of cross sectional area, thermal conductivity and value of heat generation is considering. Results shows that the heat transfer Equations in the wood and limestone give better performance and accurate calculations compared with conventional equations.

Keywords: Conduction heat transfer, thermal Conductivity, heat generation, heat transfer Equations.

References:
A New Paradigm for Automatic Unveiling of Human Thoughts by Reading Brain Signals

Abstract: We now live in the age of deception. Existing techniques to detect deception uses polygraph methods to assess whether a suspect is guilty or not. These methods rely on measurement of autonomic arousal like palm sweating, facial expressions, words uttered, and answer to queries, actions and heart rate to get knowledge about any crime scene. No criminal would ever accept his crime. And a practiced user can conceal the emotions mentioned above. The most detailed knowledge of any crime is locked away in the brain of the person who committed it. The fact is that no person has control over his brain signals. Use of functional magnetic resonance imaging in lie detection derives from studies suggesting that persons asked to lie show different patterns of brain activity as compared to those who tell the truth. These methods rely on measurement of autonomic arousal like palm sweating, facial expressions, words uttered, actions and heart rate to get knowledge about any crime scene. No criminal would ever accept his crime. And a practiced user can conceal the emotions mentioned above. The most detailed knowledge of any crime is locked away in the brain of the person who committed it. The fact is that no person has control over his brain signals. Use of functional magnetic resonance imaging in lie detection derives from studies suggesting that persons asked to lie show different patterns of brain activity as compared to those who tell the truth.

Keywords: Polygraph, Electroencephalography (EEG), Brain fingerprinting, P300-MERMER, ERP signals.

References:

Effects of Electromagnetic & Radio Frequency on Human Body

Abstract: The utilization of Fly ash in concrete as partial replacement of cement is gaining immense importance today, mainly on account of the improvements in the long term durability of concrete combined with ecological benefits. Scarcity of good quality Natural river sand due to depletion of resources and restriction due to environmental consideration has made concrete manufacturers to look for suitable alternative Fine aggregate. One such alternative is “Manufactured Sand”. In this paper, an attempt has been made to find out the strength of cement concrete containing Fly ash as a puzzolanic material, Manufactured sand and Chemical admixture. Through standard parameters about 24% of cement is replaced by class F Fly ash, 100% replacement of Natural sand is done by Manufactured sand, SNF based Chemical admixture is added by 0.6% of cementitious materials and PCE by 0.5% of cementitious materials is added to the concrete to reduce the water content during the mix and to increase the strength parameters. Mix designs were made for M35 and M25 standard concrete mixes and their Strength parameters such as Compressive strength test, Flexural test and Test on cylinders were studied at 7, 28 and 56 days and Durability tests such as Acid test and Base test were studied at 56 days. Studies revealed that the cost whole Concrete mix will become economical than normal concrete mix. Comparing SNF and PCE, PCE in Concrete mix gave better results than SNF in almost every parameters.

Keywords: Fly Ash, Compressive strength, Modulus of Rupture, Durability, SNF, PCE.

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Abstract: This paper deliberates the effects of Electromagnetic in human beings and heat (energy) in a biological or non-biological system is frequency and also discussed on the exposure of microwaves from cellular networks. While it is not certain that RF radiation generally poses any risks to human health, some reasons exist for being concerned about human health effects from the cellular phones themselves. These concerns exist because the antennas of these phones deliver much of their RF energy to small portions of the user’s head. It describes the energy content, interaction of microwave with biological system, measurement techniques and safety standards. In the era of wireless communication, the exposure to electromagnetic radiations is increasing. Most of these radiations fall in the category of microwaves. In addition, domestic appliances and medical treatments also use microwaves for various purposes. Though the human body could compensate for and handle the extra energy load through the thermoregulatory mechanisms without obvious increase in temperature, stress could still.

Keywords: Radiofrequency, Electromagnetic, Frequency Spectrum, Bio Effects

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Keywords: finite element Model, Cold formed, ANSYS, Connection, Bolted, Bearing failure, Flexural failure, moment – rotation relation, Load- deflection curve

References:

Keywords: finite element Model, Cold formed, ANSYS, Connection, Bolted, Bearing failure, Flexural failure, moment – rotation relation, Load- deflection curve

References:

Paper Title: Finite Element Analysis of Cold Formed Steel Bolted Connection

Abstract: The aim of this paper is to present a simple and accurate three dimensional finite element Model (FE) capable of predicting the actual behavior of beam-to-column joints in steel frame subjected to static loads. The software package ANSYS is used to model the joint. The beam- column type connection is used for study. This is chosen for its complexity in the analysis and their inheritable non-linear behavior. Two experimental tests in the literature were chosen to verify the finite element model. The results of model in literature were compared with analytical model. Two modes of failure were identified from the tests: 1) Mode: Bearing failure in section web around the bolt hole. 2) Flexural failure of connected section. The structural behaviour of the connection including the moment – rotation relation, Load- deflection curve, the yield strength, and ultimate moment capacity of the connections were studied. The main parameters considered in this study were the thickness of flange & web, span and number of bolts.

References:

Keywords: finite element Model, Cold formed, ANSYS, Connection, Bolted, Bearing failure, Flexural failure, moment – rotation relation, Load- deflection curve

References:

Keywords: finite element Model, Cold formed, ANSYS, Connection, Bolted, Bearing failure, Flexural failure, moment – rotation relation, Load- deflection curve

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S. Bitzer and P. van der Smag, “A Cogent Tool for Prosthesis and Human Robot Interaction

Authors: D. J. Evanjaline, N. Kalpana, P. Raja Kumar

Paper Title: Security Enhancement of Wireless Protocol WPA (WI-FI Protected Access)

Abstract: A Wireless Local Area Network (WLAN) is a flexible data communication system implemented as an extension to or as an alternative for a wired Local Area Network (LAN). However, anyone can eavesdrop on information so that WLAN has the hidden security trouble such as leaking of electromagnetic wave or eavesdropping of data because WLAN adopts common electromagnetic wave as media to transmit data. Therefore, the security of WLAN is very important and outstanding. This paper discusses the security flaws in wireless security protocol WPA and to describe a solution to enhance the security WPA.

Keywords: WLAN, WEP, Initialization Vector, TKIP, AES, WPA, WPA2, MIC.

References:

Authors: Sahithi Govindaraju, Krishna Prasad Satamraju, Sathish Babu Kaaparapu

Paper Title: MIRCHI – A Cogent Tool for Prosthesis and Human Robot Interaction

Abstract: To achieve highly dexterous manoeuvre with many degrees of freedom is of significant importance to perform normal hand-like movements. We present a powerful tool, Myoelectric Interface for Computer and Human Interaction (MIRCHI), which can be used in prosthesis, physiotherapy and Gaming technology. MIRCHI is useful for people undergoing upper limb prosthesis. Unlike most of the prosthetic prosthesis tools which are dynamic subject- or task-specific, the proposed system takes input from the muscle of the subject using surface electromyography sensors and generates corresponding movements with the aid of some predefined mapping functions. We have tested different movements from various subjects. Results show that the subject is able to make custom movements with lot of ease. The entire system is developed in Ubuntu 12.04 LTS and OpenGL is used for GUI.

Keywords: Degree-of-Freedom (DoF), Human Computer Interaction, OpenGL, Prosthesis, Ubuntu 12.04 LTS.

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Abstract:

Elastic properties of coal measure rocks from the Sydney basin, New South Wales

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Authors: Vasudeva G

Paper Title: Design and Implementation of Radix-2 Modified Booth’s Encoder Using FPGA and ASIC Methodology

Abstract: This paper presents the design and implementation of signed-unsigned Modified Booth Encoding (SUMBE) multiplier. The present Modified Booth Encoding (MBE) multiplier and the Baugh-Wooley multiplier perform multiplication operation on signed numbers only. Therefore, this paper presents the design and implementation of SUMBE multiplier. The modified Booth Encoder circuit generates half the partial products in parallel. By extending sign bit of the operands and generating an additional partial product the SUMBE multiplier is obtained.

The Carry Save Adder (CSA) tree and the final Carry Look ahead (CLA) adder used to speed up the multiplier operation. Since signed and unsigned multiplication operation is performed by the same multiplier unit the required hardware and the chip area reduces and this in turn reduces power dissipation and cost of a system. The proposed radix-2 modified Booth algorithm MAC with SPST gives a factor of 5 less delay and 7% less power consumption as compared to array MAC. The simulation results are obtained from MODELSIM and Physical design is done from encounter tool from cadence also area, power and timing reports are obtained from RTL Compiler from cadence.

Keywords: CLA, CSA, SUMBE, Booth Encoder

References:
Abstract: This paper provides the design details of 600W grid connected PV cell. Six PV cells are connected in parallel is considered as the source. The source voltage is then stepped up using a DC-DC boost converter. The boost converter is then provides the voltage to a single phase inverter, which provides the AC signal which can be injected to the grid

Keywords: PV cell, DC-DC boost converter, inverter

References:

Authors: Akhilesh Kumar Gupta, Prabhaut Kumar

Paper Title: Biometric Authentication of Individual Using M-Wave Signals

Abstract: This paper suggests a new biometric method of human verification based on muscle response following an electrical stimulation is presented in this study. The corresponding response is called M-wave. The goal is to study the possibility of using the M-wave signals to verify an individual. In this work, parameters are extracted by modeling the M-waves using wavelet networks. The radial basis neural network method is then used to classify these parameters. This method has been evaluated on a set of M-wave responses corresponding to normal individuals. Consequently, very encouraging results have been obtained.

Keywords: M-wave; biometrics; wavelet networks; neural network; classification

References:
Authors: Ashish Kori, Vilas Warudkar

Paper Title: Functioning and Assessment of Uncoated and PVD Coated Carbide Tool and its Vibration Analysis

Abstract: In today’s manufacturing industries there is an always demand and requirement of high rate of production, accurate dimensions, decrease in the cutting rate, increase in the quality of manufacturing machined part and machining of hard materials. In this experimentation work the machining and performance of uncoated carbide cutting tool and PVD Tin coated cutting carbide tool is experimented. The hard turning is done on hard material AISI 1045H and soft material pure aluminium under various parameters cutting speed, rate of feed and depth of cut. The machining is done under dry condition. The affect of various parameters of cutting tool and work material has been tested in experimentation work. The tool chatter vibration, surface roughness, tool wear is tested. The tool chatter vibration is measured by using Digital Vibration Meter (VM-8200) for both uncoated and PVD tin coated cutting tool. It has been found that hard turning on hard material at high speed, low rate of feed and high depth of cut is improved by using PVD Tin coated cutting tool and uncoated cutting too is good for soft material. The tool chatter vibration is very critical factor that’s affect on rate of production, dimensions, tool life, efficiency of machine, and etc. The high tool chatter vibration can break cutting tool that’s result on loss of material, decrease the rate of production, money loss, time loss. It is very essential to reduce tool chatter vibration, the various researches has been done on this factor but no researches exits that completely exit this factor. In this experimentation work the PVD TiN multilayer coating is used for minimization of tool chatter vibration that meets to the demands and requirements of today’s manufacturing world. The tool chatter vibration on uncoated cutting tool is high at high speed, low rate of feed and high depth of cut, whereas the tool chatter vibration on PVD Tin coated tool at same conditions is low. PVD Tin coated cutting tool give better performance as compared to uncoated tool. The surface roughness is also a very crucial factor that’s affect on the dimensions of the machined material and its quality. It is very necessary to achieve better surface finish. The PVD Tin coated cutting tool gives good surface finish as compared to uncoated tool. It also increases the life of tool that’s affect on performance and the demands and requirement of today’s manufacturing industries.

Keywords: Dry machining, PVD Tin coated, SEM, Tool chatter vibration.

References:

Authors: Shrraddha J. Patil, R. S. Talikoti

Paper Title: Effect of Wind Load on High Rise Structure

Abstract: The global urban population is expected to grow approximately 1.84% per year between 2015 and 2020. So to accommodate this large number of world’s population in the urban area there is not enough space available on the horizontal ground. So the Analysis and design of high-rise buildings for lateral load such as wind load and earthquake are the major issues which are playing significant role in recent decades in the designing of new high rise buildings. In this research we study about how wind load analysis plays an important role in designing and analysis of this high rise buildings. Analysis carried out on G+19 structure to study its behaviour in wind load. All dynamic parameter such as storey shear, storey drift, torsion in column, change in reinforcement of column, displacement of mass C.G., change in bending moment, shear force and axial force in column and change in stresses of beam are analyzed and summaries its governing condition.

Keywords: Necessity of high rise structure, Wind effect on high rise, Governing parameter during wind load

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