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Professor, Department of Computer Science and Engineering, Dreen Avenue, Khatipura Road, Jaipur, India
Abstract: Nanotechnology is a multidisciplinary field which combines engineering, biology, physics and chemistry. This field has evolved over the past half century and most scientists now agree that it has truly come of age. Nanotechnology is well placed in the diagnosis and treatment of cancer as it enables doctors and scientists to operate at a molecular and cellular level. This allows treatment to be focussed on specific areas without impacting surrounding organs and systems. Using nanotechnology, it is possible that cancer cells could be targeted and destroyed with almost no damage to surrounding healthy tissue. The purpose of this paper is to investigate the developments and future uses of nanotechnology in diagnosing and treating cancer. In addition, we will explain how the advances in the uses of nanotechnology, combined with other developments in medicine, have led scientists to predict that cancer will be eradicated in less than ten years.

Keywords: Cancer, Tumour Necrosis Factor (TNF), Nano Particles (NP), Radiation Therapy.

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Authors: Zaid Abulghamam, Nicolae Băran, Sayel M. Fayyad, Sameh Abu-Dalo

Paper Title: Experimental Researches Regarding the Obtaining of Fine Air Bubbles

Abstract: In this paper the authors present the constructive solution of a new type of fine air bubbles generator. As the air output holes are located on a single row, the bubble columns that appear in the water mass generate a planar jet similar to a bubble curtain. This bubble curtain can be used to deurate residual waters or to enrich basins or lakes with oxygen. This fine bubble generator has Ø0.5mm holes, practiced by electro-erosion using an AG55L type machine that ensures the location of the holes in xoy coordinates as demanded by the designer. Images and results of experimental researches made on the fine bubbles generator, at different working levels, are exposed.

Keywords: Fine Bubbles Generator, Processing by Electro-Erosion, Bubble Curtain.

References:


Authors: C. Ramachandra, J. Venkatesh, Sarat Kumar Dash

Paper Title: Passive Voltage Contrast Technique for Semiconductor Device Analysis

Abstract: Passive voltage contrast is found to be very effective in localizing defect / fault at micron / submicron scale in semiconductor devices. It requires use of Focused Ion Beam (FIB) System for analysis. Effectiveness of passive voltage contrast in identifying fault location is explained with case studies in DRAM devices.

Keywords: PVC, FIB, SEM, IC, DRAM, DLCT, BPSG, ILD, RIE, GDS,

References:

5. O.D. Patterson et all, “Real time fault site isolation of front end defects in ULSI – ESRAM utilizing in – line passive voltage contrast analysis” ISTFA Proceedings, pp: 591 – 599, 2005

Authors: A. Nachev

Paper Title: Measuring Factors of Employment by Classification Tree Models

Abstract: This paper presents a case study on data mining modeling, based on classification trees. The study analyzes data from a national household survey, which provides information about Irish labour and unemployment status of the respondents. Based on trained predictive models, we address some gaps in previous studies by providing means to measure and rank the employment factors and analyze their role over the studied period. Results from experiments show that features representing age and education appear as top factors affecting the employment status. Studying further each of those by VEC analysis, we find empirically the role of their values in employment success. Measuring the model performance, we came to the conclusion, that a carefully trained classification tree can outperform neural networks trained on the same data in terms of accuracy, but underperforms neural nets in terms of AUC.
6. **Abstract**: Nonlinearity Reduction in Subcarrier Multiplexed Radio Over Fiber Systems

7. **Abstract**: In subcarrier multiplexed (SCM) Radio over Fiber (RoF) systems, multiple radio frequency (RF) signals are combined in the electronic domain and transmitted simultaneously by modulating them on high-frequency optical carriers. The harmonic and intermodulation distortions generated due to the inherent nonlinearity of the laser transmitters causes severe performance degradation in multiuser RoF systems. This work aims to reduce the adverse effects due to the laser diode nonlinearity using external mechanisms. A predistortion technique is suggested for the suppression of the additional frequency components generated. A simulation study on the effect of nonlinearity on a three-user SCM-RoF system is carried out. A predistortion technique in which the input signals are preprocessed to mitigate the nonlinear effects is introduced into the system and the performance enhancement is

6. **Keywords**: classification, data mining, labour, classification trees.

7. **Keywords**: Classification, nonlinearity, RoF system, predistortion, data mining models.

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6. **References**

7. Fawcett, T. An introduction to ROC analysis, Pattern Recognition Letters 27, No.8, 681–784, 2005

6. **Authors**: A. Vinay Chandra, K. Narender Reddy

7. **Authors**: Tony Jose, Vijayakumar Narayanan

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6. **Paper Title**: Empowering Rural Women In The Field of Biomass Technology Towards Uplifting Economic Status in India

7. **Paper Title**: Nonlinearity Reduction in Subcarrier Multiplexed Radio Over Fiber Systems

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6. **Keywords**: Telangana State, Biomass energy services, Empowerment, Awareness programs.

7. **Keywords**: classification, data mining, labour, classification trees.
Abstract: Entrapment of mammalian cells in physical membranes has been practiced since the early 1950s when it was originally introduced as a basic research tool. The method has since been developed based on the promise of its therapeutic usefulness in tissue transplantation. Encapsulation physically isolates a cell mass from an outside environment and aims to maintain normal cellular physiology within a desired permeability barrier. Numerous encapsulation techniques have been developed over the years. These techniques are generally classified as microencapsulation (involving small spherical vehicles and conformally coated tissues) and macroencapsulation (involving larger flat-sheet and hollow-fiber membranes). This review is intended to summarize the state-of-the-art successes of microencapsulation, specifically with regard to the encapsulation of microorganisms, mammalian cells in treatment of various diseases.

References:

Microencapsulated cell, Probiotic Bacteria, Alginate Solution, Liver Cell.

References:


Abstract: A major paradigm shift where power dissipation has become an important consideration as performance and area. RISC is termed as Reduced Instruction Set Computer, computer arithmetic-logic unit that uses a minimal instruction set, emphasizing the instructions used most often and optimizing them for the fastest possible execution. In this work, a 64-bit RISC processor is presented with higher performance and efficiency being the main aim. This processor comprises of Control unit, general purpose registers, Arithmetic and logical unit, shift register, instruction cycle. According to the instruction to the fetch stage, control unit generate signal to decode the instruction. The architecture supports 16 instructions for arithmetic, logical, shifting and rotational operations.

Keywords: RISC, control unit, ALU, shift register, instruction cycle.

References:

Authors: G. Jhansi

Paper Title: Design of MIPS based 64-bit RISC Processor

Abstract: Pulse detonation engine (PDE) is future propulsion technology that involves detonation of fuel to produce thrust more efficiently than the available current engines. The PDE can provide static thrust for a ramjet or scramjet engine, or operate in combination with turbofan systems. The objective of present study was to observe the effect of predetonator (having disturbances in the form of Shchelkin spiral) on the detonation velocity, pressure and length of PDE tube. In this project a new design has been developed for Predetonator. Initiation and propagation of detonation waves inside predetonation tube has been done by two-step detonation initiation method, low energy ignition system (total energy of 50mJ), and effective Shchelkin spiral of blockage area ratio of 0.43. Liquid kerosene, gaseous oxygen and nitrogen were used as fuel, oxidizer and purge gas respectively with 420mm predetonator, a convergent-divergent nozzle and a 415mm long tube for main detonation has been used. In the present study the filling processes is modeled numerically using CFD code FLUENT. Calculations for the gas flow are carried out by solving the Navier-Stokes equations coupled with the k-ε turbulence model. Numerical analysis of the geometry made has been done by using GAMBIT and FLUENT for two dimensional predetonator model and results have been observed in the form of pressure, velocity and temperature contours at different time step. Numerical analysis obtained results have been compared with the calculated results from NASA CEA code for respective conditions.

Keywords: Detonation, Deflagration, Predetonator and Pulse Detonation Engines (PDE).
References:

Authors: Sonal Tiwari, Nitin Choudhary

Paper Title: An Efficient Method for Indian Number Plate Recognition

Abstract: Number Plate Recognition (ANPR) became a very important tool in our daily life because of the unlimited increase of cars and transportation systems, which make it impossible to be fully managed and monitored by humans. On rising population and on growing need of the people, there is a big rise of using vehicles for the last decades. This increase in the number of vehicles must control from the perspective of security and management. However, controlling a huge amount of traffic is a major problem to be solved. In order to maintain traffic problem and controlling a crime and various agencies working in the field of Indian license plate recognition system. We found some general problem. Here we mention problem
- Rate of recognition low.
- Creation of template.
- Recognition time is very high.
- Standard deviation error of most of the method nearer.

Yet, it’s a very challenging problem, due to the diversity of plate formats, different scales, rotations and non-uniform illumination conditions during image acquisition.

The objective of this paper is to develop an accurate and automatic number plate recognition system. In this paper we propose a license plate recognition technique for the improvement of the recognition rate and recognition time for recognition of the number and the character of the vehicle license plate. We proposed a new technique of Neural Network for Vehicle plate recognition. The Neural Network generates less recognition times and improves the recognition rate of the license recognition system. Our work shows better performance as compare to the correlation method which is one of the efficient techniques for matching, Therefore, the standard deviation error reduces which comes from the data lost during the pre-processing in the recognition process.

Keywords: Edge Detection, Segmentation, Neural Networks, correlation method, Radial Basis Function.

References:


Authors: Jamil Islam, Hasan-ur-Rahman, H.M Mamun Al Rashed

Paper Title: The Effect of Magnesium and Heat Treatment on the Hardness as well as Microstructures of Aluminum Copper Binary Alloys

Abstract: Cast Al – Cu-Mg alloys have been widely applying in aircraft and aerospace industries since many years due to their extraordinary mechanical properties like super strength and super strength-to-weight ratio. In this research an intensive investigations have been made on their mechanical behaviors and microstructural changes due to casting magnesium and copper with mother Aluminum cast. The hardness profile indicates the great effect of magnesium and copper when doped with Aluminium cast. Heat treatment for 2 hours at 3800°C has been conducted for observing the mechanical properties changes and microstructural also. The effect of Magnesium and aging on microstructure was analyzed by Scanning Electron Microscope (SEM) and optical microscope. Moreover, the chemical compositions were determined using Optical Emission Spectroscopy (OES) and EDS analysis.

Keywords: Aluminum-copper-magnesium alloys, effect of magnesium, heat treatment effect, Microstructural changes.

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Authors: Cengiz POLAT

Paper Title: Dynamic Analysis of Structures using a Solid-Shell Element

Abstract: Dynamic analysis of some structures are performed using a solid-shell element. An eight node solid-shell element is used in the analyses. The Assumed Natural Strain (ANS) and the Enhanced Assumed Strain (EAS) methods are used to alleviate the locking problems. The governing equations are solved employing the Newmark’s integration technique. Several benchmark problems are solved to demonstrate the efficiency of the element.

Keywords: Solid-shell element; ANS-EAS method, Dynamic Analysis.

70-75
References:


Authors:

Germain Wende Pourié Ouedraogo, Boureima Kaboré, Sié Kam, Dieouonné Joseph Bathiébo

Paper Title: Determination of Physical and Chemical Properties of Okra During Convective Solar Drying

Abstract: Convective solar drying of okra was carried out for three different types of cuts. Using the variation of the reduced water content or the moisture content of okra as a function of time, we were able to determine the diffusion coefficient of okra. And the mass transfer coefficient. The diffusion coefficient of okra varies from 6.16×10^-10 to 47.8×10^-10 m²/s^n(-1) depending on the shape of the cut. By applying the Arrhenius relation dependent on the temperature of the drying air, the energy of activation of the okra obtained varies from 20.497 to 39.864 kJ/mol.-1.

Keywords: okra, diffusion coefficient, mass transfer coefficient, activation energy, convective solar drying.

References:


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14. 76-80
Authors: Bhavik Patel, Kiran Patel, Tushar Patel, Harshad Patel

Paper Title: Parametric Evaluation Performance of Ti-6Al-4V using Coated & Uncoated Carbide Insert in CNC Turning - A Review

Abstract: This study consists a comparison of outcomes obtained by PVD coated carbide insert and uncoated carbide insert during dry turning Ti6Al4V which is titanium alloy. It has many applications such as aerospace components, medical surgical parts etc. due to their properties such as high strength to weight ratio, better corrosion resistance and heat treatable. In this experiment, turning was carried out using different cutting parameters like speed, feed and depth of cut. Design of Experiment was based on Taguchi’s L9 orthogonal array. Surface roughness was measured for different combination of input parameter. The analysis of variance is carried to get the optimal levels and to analyze the effect of the cutting parameters on the surface roughness with different inserts of tools.

Keywords: Titanium alloy, Dry machining, Taguchi method, PVD Coated, Uncoated carbide Insert

References:

Authors: Otchere Peter Kwetu

Paper Title: Wireless Mobile Charger using Inductive Coupling

Abstract: This system demonstrates the concept of wireless mobile charging system using the principle of inductive coupling. The system demonstrates how to wirelessly charge their mobile phones without plugging in the mobile adapter. The system is demonstrated using a charging pad where users just need to place their adapter circuit to charge the mobile phone. For this purpose the advanced power transfer concept is utilized. A high frequency transformer is used to convert mains input 230V AC to 12 V DC. This output is supplied to the charging pad coil. When the adapter coil comes in range of the charging pad coil, the power is thus transferred wirelessly to the receiving coil and this 12 V DC is provided to the adapter circuit which is used to convert this 12 V DC to 5V DC which is then supplied to the mobile phone. So this allows us to charge the mobile phone wirelessly without plugging it in. The system can be further enhanced by integrating the charging adapter within the mobile itself so that users that just need to place their mobile phones on the charging pad to charge it.

Keywords: Advanced power transfer, inductive coupling, mobile charger, wireless.

References:
Abstract: This paper proposes physical installation and analysis of a hybrid photovoltaic - wind energy system in islanded mode that constructed at the Rahva Campus of Bitlis Eren University. As the purpose of the study, a hybrid system is physically installed and connections are completed. System is analyzed by using the values that obtained separately at various times from distributed generating units, which are photovoltaic system and wind turbine, and results of the performance analysis of the system are discussed.

Keywords: Hybrid Energy System, Photovoltaic System, Renewable Energy, Wind Energy System.

References:

Abstract: Hypergolic bipropellant radiation cooled thrusters utilizing Mono-methyl Hydrazine and Nitrogen Tetroxide are commonly used in spacecraft missions for attitude and orbit control. The performance index of a rocket engine is the specific impulse which is a function of combustion efficiency, known as C* efficiency, and the nozzle efficiency. An experimental investigation is carried out to evaluate the effect of combustion chamber design parameters on performance(C*efficiency) for varied injector spray and atomisation characteristics as well as injection pressures. Analytical model with empirical correlation available in the literature is used as a tool for understanding the physical process in the combustion chamber and predicting C* efficiency which was validated with experiments. Design variables considered are characteristic length and the contraction ratio. Cold flow evaluation of the injector using simulant water was done to evaluate the droplet size and injection velocity, which is normalised to the propellant flow conditions. Hot test for 10s using the stainless steel chamber was done at sea level with instrumentation for chamber pressure, mass flow rate of propellants and throat temperature. Results show that for a given injection and operating conditions, there exists a range of L* and contraction ratio where C*efficiency will be optimum and less sensitive. Trends in throat temperature measured are also evaluated. This paper presents the details of the investigation.

Keywords: Hypergolic bipropellants, C* efficiency, L*, Contraction Ratio
References:

Authors: Amogh Raut, Aniket Patil

Paper Title: Design Analysis of Chassis used in Students’ Formula Racing Car using FEA Tool

Abstract: In this paper, the overall design process for a Formula SAE vehicle will be explored, as well as the many challenges that must be overcome. Several factors will be taken into account, including modelling and analysis, and overall manufacturing and performance of chassis. This project will be split into several phases: analysis, testing and validation of the FSAE vehicle and the design, analysis, manufacturing. All decisions for design were based on all pros and cons from previous FSAE testing and competition results. The competition consists of various sub events for which points are given and cumulative score is recorded for deciding the ranks. Following the technical inspection are the sub events which include the static events like tilt test, brake test, cost report presentation, engineering design report and business presentation, dynamic events like acceleration test, skid pad, autocross and endurance test. In this high octane scenario a car is expected to perform high on acceleration, handling, braking, aesthetics, ergonomics, fabrication and maintenance with least investment in fabrication without compromising on safety of the driver at different track configurations.

Keywords: Chassis, Design, FSAE, Line Element.

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5. Author: Abhijeet Das International Journal of Science And Research (IJSR) ISSN (Online): 2319-7308 “Design and Analysis of A Tubular Space Frame Chassis Of A High Performance Race Car Chassis”.

Authors: Vishal Pravinbhai Vekariya

Paper Title: Prototype of Vertical Axis Savonius type Wind Turbine with 2.3kWh Power Generation

Abstract: In recent scenario the energy utilization is most impacted topic in research and development section. Research work on wind and solar section has been considerably increased due to its availability and effectiveness. In wind section, windmill is one of the way, through which we can use maximum percentage of wind energy. The Horizontal Axis Wind turbine can be said tradition equipment for wind energy utilization. Due to its characteristics it is not used for household purpose. In case of Vertical Axis Windmill, due its type of blade, it is compactable for household purpose. For the main aim to choose this type of design, it is suitable for varying condition of weather.
Keywords: Energy Utilization, Magnetic Levitation, Savonius Blade, Vertical Axis.

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Authors: A. Mahdy, S. M. EL-Hakim, M. Abdel Hakim

Paper Title: Modeling and Control of Inversely Connected Rotors of Brushless Doubly Fed Twin Stator Induction Generator

Abstract: This paper presents a steady state and dynamic modeling of inversely connected rotors of Brushless Doubly Fed Twin Stator Induction Generator (BDFTSIG). The BDFTSIG consists of two identical machines, one is called power machine whose stator is connected directly to the grid and the other machine is called control machine whose stator is connected to a pulse width modulation converters. A vector control scheme is applied on the grid side converter (GSC) to control the DC link bus voltage; another vector control scheme is applied on the control machine side converter (CMSC) for synchronization and also to control the active and reactive power delivered to the grid. The system is simulated using MATLAB/Simulink environment. The simulation results show a good performance comparing with conventional doubly fed induction generator, under various loading and rotor speed conditions.

Keywords: BDFTSIG, vector control, inversely connected rotors.

References:

Authors: Tanushree Debilata Das, Ramdulari Pradhan, Debabrata Singh, Adyasha Rath, Sonali Pattnaik

Paper Title: Performance Analysis of Devices in Double Gate MOSFET

Abstract: The silicon CMOS technology moves into the sub-20nm regime and due to manufacturing limits the fundamental curb the traditional scaling of transistors. Rapid development in device structures and materials will be need for transistor miniaturization and improvement of performances. Device dimensions are approaching to their scaling limit rise to undesirable effects i.e. drain induced barrier lowering (DIBL), gate leakage current, short
channel effects etc. Tri-Material Double Gate (DMDG) structure offers an alternative way of simultaneous SCE suppression and improved device performance by careful control of the gate material work function. We study and analyze the short channel effects (SCE), potential distributions, impact ionization, ion scattering, hot carrier effect and sub threshold swing. Analysis and comparative study of the electrical characteristics of DOUBLE GATE FETs shows that TMDG MOSFET exhibits better performance than DMDG and SMDG MOSFET in terms of surface potential, electric field, carrier mobility, and electron velocity to suppress the scaling effects like DIBL, HCEs etc.

Keywords: Dual Material Double Gate FETs, Scaling, short channel effects (SCE), potential distributions, impact ionization, ion scattering, sub threshold swing

References:

Authors: Prakash Choudhary, Neha Mahala, Khusboo Uprey, P K Bhagat

Paper Title: Application of Polar Harmonic Transforms in Thumb Impression Recognition

Abstract: Fingerprint recognition refers to the methods of matching or verifying a known and questioned fingerprint against another fingerprint to ascertain if the impressions are the same. Fingerprints are the most popular biometrics to authenticate a person as it is unique and permanent throughout a person’s life. Polar Harmonic Transforms (PHTs) are orthogonal rotation invariant 2D transforms that provide various numerically stable features for fingerprint recognition. The kernel functions of PHTs are basic waves and harmonic in nature that consists sinusoidal functions that are inherently computation intensive transforms that can be used to generate rotation invariant features. PHTs are characterized by low time complexity and numerical stability. In this paper, Polar Harmonic Transforms (PHTs) are introduced for rotation invariance in thumb impression recognition, namely, Polar Complex Exponential Transform (PCET), Polar Cosine Transform (PCT), and Polar Sine Transform (PST). Orthogonal kernels of PHTs are more effective in terms of information compactness and minimal information redundancy. A fast approach of computation of Polar Harmonic Transform for thumb impression recognition with low values of FAR and FRR have been implemented. The accuracy obtained is above 80 percent.

Keywords: Fingerprint, PCET, PCT, PHT, PST, Rotation Invariant PHT

References:
Title: Design of Elastic Application for Seamless Cloud Computing

Abstract: Mobile cloud computing is an emerging technology. Unlike previous definition of mobile cloud computing, mobile node now has become a part of deployment of cloud application. But present issues in the currently existing network infrastructure create problems in connecting mobile devices to cloud hosting server. We present a protocol for elastic applications which uses application partitioning technique to facilitate the mobile cloud computing in disconnected network. Application partitioning is a technique that aims to split a complex application into components called as weblets. An elastic application consists of one or more weblets, each of which can be launched on a device if wireless network is not responding. The proper organization of weblets with client side data storage technique drives mobile cloud computing into a new era of wireless cloud computing. The initial phase of our work approach proposes algorithms for application partitioning and in the latter part we have explained protocol for elastic application through client side data storage mechanism. We present results of experimentation done by changing different cost parameters.

Keywords: About four key words or phrases in alphabetical order, separated by commas.

Keywords: exhaust emissions, engine speed, engine torque, gasoline fuels, and environment

References:

Authors: Kishu Gupta, Ashwani Kush

Paper Title: A Review on Data Leakage Detection for Secure Communication

Abstract: Data is an important asset for an enterprise. must be confined against loss and damage. In IT field massive amount of data is being exchanged among multiple parties at every moment. During data sharing, a great probability of data vulnerability, breach or variation exists. Along with data availability and accessibility data security is also very important. The term Data leakage is expressed as the accidental or unintentional allocation of confidential or sensitive data to a not permitted third party. This paper focuses on the data leakage concept, DLD modules & techniques to identify data leakage. A literature review for data leakage techniques is been presented in this paper. Commonly, water marking technique is used to handle the data leakage and hence causes data alteration. Distributor can allege his rights over the data if this altered watermark copy of data does exist at some not permitted location [1]. Various Data allocation strategies are in use to prevail over disadvantages for using watermark; these techniques enhance the probability of detecting guilty parties. The guilty agent(s) is an individual or a group of malicious users who cause data breach. Finally the algorithms were implemented which enhances the chance to detect guilty agents using fake objects.

Keywords: Data Leakage, Data Leakage Detection, Data Leakage Prevention, Encryption, Watermarking.

References:
Authors: TIJANI, Murtadha Adekilekun, AKINLEYE, Monsuru Tunde, JAIYEBOA, Kehinde Folake

Paper Title: Engineering Properties of Laterites Obtained in Ede, Southwestern Nigeria

Abstract: Engineering properties of laterites obtained from four different pits in Ede were evaluated to determine their suitability for road construction. Samples from each pit sites were subjected to sieve analysis, atterberg limits, linear shrinkage, compaction and California bearing ratio adopting British Standard 1377 (1990) testing methods. The sieve analysis results showed that percentage passing No 200 sieve ranged between 12.4 and 33.6%. The liquid, plastic limit and plasticity index varied between 24.0 to 3. The maximum dry density ranged from 1.72g/cm³ to 2.12g/cm³ while optimum moisture content varied from 9.0 to 11.1%. California bearing ratio ranged between 2.1 to 7.0. Linear shrinkage is of the order 4.0 to 7.0%. The maximum dry density ranged from 1.72g/cm³ to 2.12g/cm³ while optimum moisture content varied from 9.0 to 11.1%. California bearing ratio ranged between 35 to 85%. The soils were classified as A-2-4 and A-2-6 which implied that they are suitable for sub-grade, good fill and sub-base and base materials. This geotechnical data obtained will be useful for future road foundation design and construction in the study area.

Keywords: Laterites, engineering properties, road construction, Ede.

References: