Foreword and Editorial

International Journal of Advanced Science and Technology

We are very happy to publish this issue of an International Journal of Advanced Science and Technology by Science and Engineering Research Support soCiety.

This issue contains 7 articles. Achieving such a high quality of papers would have been impossible without the huge work that was undertaken by the Editorial Board members and External Reviewers. We take this opportunity to thank them for their great support and cooperation.

The paper “Identification, Modeling and Control of Unmanned Aerial Vehicles” presents a method to control height and speed of fixed wing unmanned aerial vehicles (UAVs) using MATLAB platform. The mathematical dynamic model of Six Degrees of Freedom (6-DOF) aircraft is nonlinear and it is linearized about a flight condition. System is divided into two Multi Input Multi Output (MIMO) sub models. First model controls the longitudinal dynamics and second model is used to control the lateral dynamics. Each MIMO model is converted into ten Single Input Single Output (SISO) systems and then the systems needed for the primary requirement of plant control is selected. Same technique can be also be used to make Manned Aerial Vehicles (MAV) autopilots and to control flight of other aerial vehicles.

Paper “Effects of Human Hair Additives in Compressive Strength of Asphalt Cement Mixture” presents the effects of human hair additives in compressive strength of asphalt cement mixture as potential binder in road pavement. Human hair is strong in tension and can be used as a fibre reinforcement material. Hair Fibre (HF) is an alternate non-degradable matter is available in abundance and at a very cheap cost. It also creates environmental problem for its decompositions. This elastic property of the HF reinforced in asphalt pavement may produce better stand on traffic loading by the same fundamental mechanism of transferring the high intensity forces imparted at the surface by the wheel loads to lower levels that the subgrade can accommodate without deforming.

In the paper “Resolution of Lipid Content from Algal Growth in Carbon Sequestration Studies”, green microalgae species was collected from Bhavani Lake of Erode in Erode District, Tamilnadu State, India. The Morphological studies were examined by utilizing Fourier Transform Infrared Spectroscopy, Microscope studies, Scanning Electron Microscopic studies and isolated and identified by PCR studies and by these studies that the collected specimen is to be Chlorella sp. In this study to check growth behavior and tolerance of fresh water green algae chlorella sp, under different pH, Temperature, different concentrations of sodium bicarbonate salt, carbon dioxide gas and under different levels of sodium chloride salt.

The paper “Implementation FPGA of Public Key Cryptosystems Based on Finite State Machines Reconfiguration” states that the method of the finite state machine (FSM) for public key cryptosystem allows reducing key’s length of the cryptosystem without reducing cryptographic strength. A reconfigurable finite state machine is entered into public key

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cryptosystem’s model. A reduced key is used for adjustment of the reconfigured finite state machine. Each adjustment of the reconfigurable model generates some finite state machines which sets process of the encryption/decryption. Software implementation includes the finite state machines generator and a translator for transfer the table description of the finite automaton to the hardware description language VHDL.

Paper “Role of Pico Second PEF On Osteoblast Intra organelle Nanoporation” presents the effect of pico pulse electric field on intra organelle nanoporation of multilayer osteoblast cell placed in a 3D non uniform microfluidic chip composed of bi metallic heterogeneous micro electrode under the influences of smart control FPGA based pico pulse generator and images of intra organelle nanoporation are recognized by neural fuzzy network. It is observed that when the micro pulse is applied the cell starts to response but it is unable to penetrate the intra cellular nucleus- membrane whereas the expected results will come when the Pico pulse is applied on the cell, a number of nana pores are generated on the intra organelle and chemicals are entered into the cell.

The paper “Performance Analysis of Different Higher Order Modulations for PAPR Reduction” states that next generation wireless communication system uses one of the most competent multi-carrier transmission techniques known as Orthogonal Frequency Division Multiplexing (OFDM). OFDM has several characteristics such as providing greater immunity to multipath fading & impulse noise, eliminating Inter Symbol Interference (ISI) & Inter Carrier Interference (ICI) using a guard interval known as Cyclic Prefix (CP). But, OFDM suffers a serious drawback of high peak to average power ratio (PAPR) which is defined as the ratio of the peak power to the average power of OFDM Signal. A lot of researches are carrying on reducing this high PAPR.

The paper “AVSA, Modified Vertex Support Algorithm for Approximation of MVC” presents that the minimum vertex cover is very important among the NP-optimization problems and got the attention of the researchers in the past decade. Approximation techniques are used to solve the NP problems to get either optimal or near optimal solutions in polynomial time. In this paper, a modified vertex support algorithm is proposed that make use of same data structure as that of VSA but with different vertex selection criteria. Proposed algorithm is called advance vertex support algorithm (AVSA), it takes into account all the neighbors of a vertex twice while selection as surrounding vertices are very important for the decision. AVSA is analyzed experimentally against all benchmarks and compared with some better algorithms already present.

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