Volume 4 Issue 8, January 2015

International Journal of Innovative Technology and Exploring Engineering

IJITEE

ISSN : 2278 - 3075
Website: www.ijitee.org

Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.
Exploring Innovation: A Key for Dedicated Services

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1.	**Authors:** Xiaohong Wang, Jiayin Wang **Paper Title:** Vascularization and Adipogenesis of a Spindle Hierarchical Adipose-Derived Stem Cell/Collagen/ Alginate-PLGA Construct for Breast Manufacturing	1-8

Abstract: The creation of vascularized adipose tissues is a subject of broad fundamental and technological interest in implantable breast manufacturing. Here, we demonstrated a simple, easy, and effective way to fabricate a spindle hierarchical poly(DL-lactic-co-glycolic acid) (PLGA) encapsulated adipose-derived stem cell (ADSC)/collagen/alginate construct with a multiple-branched vascular network using a rotational combined mould system (RCMS). Both the optimized PLGA overcoat and internal collagen/alginate hydrogel provided the ADSCs with a stable and comfortable accommodation to grow, proliferate, and differentiate. Cell viability remained at a comparatively high level during 4 weeks in vitro engagement with two groups of cell growth factor combinations. At the end of the second week, part of the cells were engaged into endothelial cells, while at the end of the fourth week more than 63% of the ADSCs were replaced by adipose cells. We envisage that this RCMS, vascularization and adipogenesis techniques will provide an enabling platform for a wide array of research and clinical applications.

Keywords: Vascularization; adipogenesis; a rotational combined mould system; adipose-derived stem cells (ADSCs); collagen/alginate hydrogel

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2.

Authors: **A. Arunitha, T. Gunasekaran, N. Senthil Kumar, N. Senthilvel**

Paper Title: **Adaptive Beam Forming Algorithms for MIMO Antenna**

Abstract: MIMO antenna is a combination of multiple antenna elements. It has a signal processing capability to optimize its radiation reception pattern which automatically change in response to the signal environment. This paper provides comprehensive review on various evolutionary algorithms which are used for adaptation. The weights of the smart antenna array are adapted to maximize the output in desired direction and minimize the signals in undesired direction. Adaptive beam forming algorithm is used for track corresponding users automatically. This paper discuss about Non-blind beam forming algorithm i.e.. Least Mean Square, and Blind beam forming algorithm i.e.. Constant Modulus Algorithm and Sample Matrix Inversion. The algorithms are simulated for MIMO environment by using MATLAB. Beam forming can be used for either radio or sound waves. It has found numerous applications in radar, sonar, seismology, wireless communication, radio astronomy, speech and biomedicine.

Keywords: Smart antenna, Beam forming, Least Mean Square, Constant Modulus Algorithm , Sample Matrix Inversion.

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3.

Authors: **Archana Singh Sikarwar, Denishvaran Jaya Gopal**

Paper Title: **A Review on Antibiotic Drug Resistance in Escherichia Coli**

Abstract: Antibiotic drug resistance to Escherichia coli is an emerging issue for healthcare which causes public health problems and outbreak worldwide. Antibiotic resistant of E.coli can cause community and hospital acquired infections. Uses of broad spectrum antibiotics, inadequate aseptic techniques and improper infection control measures had worsen the emergence of antibiotic resistance of E.coli. Emergence of antibiotic resistant E.coli is a major challenge to healthcare provider to create newer, better and more efficient antibiotics. Infection control measures should be taken by healthcare provider to control emergence and spread of antibiotic resistant E.coli. Further researches are needed to evaluate the available antibiotic drugs, agent and identify new drugs that can solve the issue of antibiotic resistant emergence.

Keywords: Antibiotic drug resistance, Escherichia coli, infections

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4.

Authors: **Pritesh R. Gumble, S.A. Ladhake**

Paper Title: **Design of Low Power Optimized Filter Architecture using VLSI Technique**

Abstract: In the prevalence of DSP applications the weighted operations are the multiplication and accumulation. Multiplier-Accumulator (MAC) unit that consumes low power is always a means to accomplish a high concert digital signal processing system. Finite impulse response (FIR) filters are widely used in various DSP applications where signal were present with noise (e.g. data converters). Uptill many proficient techniques have been introduced for the design of low snag bit-parallel multiple constant multiplications (MCM) process which reduces the intricacy of many digital signal processing systems. On the other hand, digit-serial adder architectures present remarkable n-bit designs which process dynamic size data, since digit-serial operators hold less area and power. The purpose of this work is to design and implementation of low power optimized digital Finite impulse response (FIR) filter architecture using VLSI technique. We design and analyze 1] Direct form 2] Transpose form 3] Transpose using MCM 4] Transpose using digit serial adder 5] Transpose using MCM and digit serial adder. Experimental results shows the efficiency of the various architectures and we found best performance results of Transpose using MCM and digit serial adder design in terms of area and power. To execute this work the design is verified using Active-HDL with MATLAB and synthesis [45nm] using Synopsys.

Keywords: digit- serial adder architecture, FIR, Low Power, MAC, MCM.

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5.

Authors: **Komal K. Maheshkar, Dhiraj G. Agrawal**

Paper Title: **Campus Access Management System via RFID**

Abstract: For colleges where security is vital and access to certain areas of campus must be controlled & monitored, there should be some access control system that allows college administration to manage and monitor all access points & locks centrally and remotely, allowing for auditable security & quick responses to any security breaches. Campus Access Management System (CAMS) via Radio-Frequency Identification (RFID) allows only authorized persons i.e. student, teacher or an employee to enter a particular area of the college campus. The authorized persons are provided with unique RFID Tag & its PIN code, using which they can access that area. The system is designed using Peripheral Interface Controller (PIC) Microcontroller MICROCHIP-16F877 and comprises of RFID module

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(Tag+Reader), Keypad for entering access code an (Liquid Crystal Display) LCD module for displaying "name" of the authorized person & a relay for opening the door for him. For an unauthorized person door remains closed and buzzer alarms with indication as "invalid card" on LCD Display [1]. The data from RFID reader is transmitted to a Centralized Remote Computer or Server located in the administrative office of the college through a RS-232 interface. The centralized server determines the authorization & access control rights. The entire program code is written in Microsoft Visual Basic 6.0 Software.

Keywords: Inductive couplings, PIC controller, RFID reader, RFID Tag.

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6.

Authors: **A. Ali, R. Hussain, F. Kappel**

Paper Title: **Resonance Effect in Dynamic of the Mathematical Model for Baroreceptor**

Abstract: The best known nervous mechanism for control of arterial pressure is the baroreceptor loop. To simulate some fundamental regulation processes mathematical model is used which approximate the short-term behavior of the baroreceptor. The most important short term properties of baroreceptor in a clear mathematical model is presented in [2]. This model is applies in the dynamic features of the human system. The goal of our work is to see the resonance effect in the dynamic of the baroreceptor model presented in [2].

Keywords: baroreceptor, mechanism, fundamental, mathematical model.

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7.

Authors: **R. Hussain, A. Ali, N. Arif**

Paper Title: **Stability Analysis of Mathematical Model Comparing Solute Kinetics in Low & High Hemodialysis Patients**

Abstract: This paper is about the stability analysis of model, which we have taken from "The mathematical model comparing solute kinetics in low- and high-BMI hemodialysis patients" [2]. The purpose of this study is to check the stability of three types of patients i.e small medium and large during dialysis and in between the dialysis treatment. In all cases we get the stable solution for above model presented in [2].

Keywords: Stability analysis, hemodialysis, mathematical modeling.

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