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Authors:	Supriya Sarkar, Sanghita Deb, G. Dilip
Title:	A New Architecture for Signed and Unsigned Multiplier by Using Radix-4 Process

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. The array multiplier and the array multipliers perform multiplication operation on unsigned numbers only. Thus, the requirement of the modern computer system is a dedicated high speed unique multiplier unit for signed and unsigned numbers. 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 Lookahead (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 chip area reduces and this in turn reduces power dissipation and cost of a system.

Keywords: SUMBE, MBE, CSA, CLA. Baugh-wooley multiplier.

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Authors:	Mohammad Hassan Chamansara, Ayat Akbari, Hassan Taheri, Abdolhamid Sohrabi
Title:	High Performance and Low-Power Full Adder

Abstract: Full adders (FAs) are essential for digital circuits including microprocessors, digital signal processors, and microcontrollers. Both the power consumption and the reliability of FAs are crucial as they directly affect: arithmetic logic units, floating-point units, as well as memory address operations. This paper studies the effect threshold voltage (V_{TH}) variations play on the reliability of a classical 28-transistor FA, and shows that reliability can be enhanced without increasing the occupied area, and while also reducing power consumption. An enabling transistor sizing scheme is proposed to improve on reliability without increasing power consumption (as reducing and limiting currents). The proposed FA in 16nm predictive technology (PTM) is significantly more reliable (six orders of magnitude in case of Cout, and three orders of magnitude in case of Sum at 10% input variations) and dissipates 38× less than a classical FA, while being 6× slower.

Keywords: Full adder, CMOS, power, energy, reliability.

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Authors: Supriya Sarkar, Sanghita Deb, Tejaswini R. Choudri, Sudha Nair

Title: Delay Analyzing Between KS, SKS, Spaning Tree and Brentkung Adders

Abstract: Adders are known to have the frequently used in VLSI designs. In digital design we have half adder and full adder, main adders by using these we can implement ripple carry adders. RCA use to perform any number of addition. In this RCA is serial adder and it has commutation delay m. If increase the ha&fa simultaneously delay also increase. That's why we go for parallel adders (parallel prefix adders). In the parallel prefix are ks adder(kogge-stone),sks adder(sparse kogge-stone),spaning tree and brentkung adder. These adders are designed and caparisoned by using of and delay constraints. Simulated and synthesis by model sim6.4b, Xilinx ise10.1

Keywords: RCA, KS, SKS, Spanning tree, Brentkung adder.

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Authors: Pooja Sabherwal

Title: Wavelet Transform As Method for ECG Signal Analysis

Abstract: Theory of wavelet transform is a young branch of applied mathematics extensively developing from early 1980's. Recently, the wavelet transform is studied as applications to digital signal processing. Its application to biomedical signal processing has been found particularly useful in the analysis of the signals like ECG. In this review, the emerging role of the wavelet transform in the interrogation of the ECG is discussed in detail. In this paper an algorithm has been proposed to determine the R peaks and the number of betas in sampled signal. In the first step an attempt was made to generate ECG waveforms by developing a suitable MATLAB simulator and in the second step, using wavelet transform, the ECG signal was denoised by removing the corresponding wavelet coefficients at higher scales. Then R-Peak in QRS complexes were detected and the last step is to calculate the beat. This Matlab 7.4.0 environment has been used and Db4 taken as mother wavelet. The maximum value of the approximation coefficients of level 4 is used as the indicating parameter.

Keywords: ECG, Wavelet transform, beat calculation, R-peak.

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 Global Journal of Computer Science and Technology Vol. 10 Issue 5 Ver. 1.0 July 2010 [16] QRS Wave Detection Using Multiresolution Analysis S.Karpagachelvi1 Dr.M.Arthanari, prof. & Head2 M.Sivakumar
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Authors: Neha Singh

Title: A Review of IS-IS Intrarouting Protocol

Abstract: Need of global networking is increasing day by day and is as a primary need. This paper state the issues related to Intermediate System to Intermediate System (IS-IS) routing protocol, currently that supports routing of Internet Protocol version 4 (IPv4) and 6 (IPv6) and study both the strong and weak points of IS-IS routing protocol. This paper illustrate the working of IS-IS and issues (Routing, addressing, packet format, area and domain) related to IS-IS because it will be helpful for understanding the key things related to IS-IS. There are various intra routing protocols among which OSPF is very popular but IS-IS is more flexible than OSPF. This paper also gives some prospective ideas that why we can't ignore IS-IS. This paper also describe the issues that are related to different resources utilization in IS-IS and in similar link state routing protocol such as OSPF and describe the difference why and in which situations IS-IS is better than OSPF.

Keywords: (IPv4), IS-IS, OSPF.

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Authors: S. U. Kulkarni, Kalpana Patil

Title: Energy Audit of an Industrial Unit- A Case Study

Abstract: In any industry, the three top operating expenses are often found to be on energy, labor and materials. If one were to find out the potential cost savings in each of the components, energy would invariably emerge at the top, and thus energy management function constitutes a strategic area for cost reduction. This paper discusses the common aspects of electrical energy management in small- and medium-sized industries. It contains the findings and analysis of the results obtained from the electrical energy audit program employed in an industrial unit, Loknayak J.P.Narayan Shtekari Sahakari Ghat, Untawad Hol, Shahada. Dist.-Nandurbar. The electrical energy audit was carried out under three major heads: (i) lighting audit, (ii) power load audit (motors, meters, etc.), and (iii) harmonic analysis. Readings were taken under these heads and analyzed to find the scope of energy conservation opportunities in the selected test case industrial unit.

Keywords: Energy audit, energy conservation opportunities, harmonic analysis, industrial unit.

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Authors: Avinash Pawar

Title: A Single-Feed Small Circularly Polarized Square MSA and Cavity Model for Square Patch Antenna

Abstract: Communication between humans was first by sound through voice. With the desire for slightly more distance communication came, devices such as drums, then, visual methods such as signal flags and smoke signals were used. These optical communication devices, of course, utilized the light portion of the electromagnetic spectrum. It has been only very recent in human history that the electromagnetic spectrum, outside the visible region, has been employed for communication, through the use of radio. One of humankind's greatest natural resources is the electromagnetic spectrum and the radio has been instrumental in harnessing this resource. The design of a single-feed small micro strip antenna with circular polarization (CP) radiation is described. This design is achieved by cutting slits in the square patch and, by adjusting the lengths of the slits; the micro strip antenna can perform CP radiation with a reduced patch size at a fixed operating frequency. This design also provides a wide CP bandwidth and relaxed fabrication tolerances. In addition, it is shown that for a feed offset from one corner of the patch, the perturbation segment (ΔS) is increased, thereby reducing the effect of manufacturing errors.

Keywords: Single feed, micro strip antenna, single feed.

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Authors:	Valmik Kardile, Abhilasha Mishra
Title:	Design & Analysis of Microstrip Patch Antenna for BW Enhancement Using Symmetrical Cuts

Abstract: The narrow BW of microstrip antenna is one of the important features that restrict its wide usages. This paper present omnidirectional microstrip patch antenna with wide bandwidth has been designed with centre frequency of 2GHz. In order to achieve BW enhancement a rectangular structure have been introduced in the simple rectangular patch antenna with ground optimization. It has been analyzed that Broad BW of 2.46 GHz to 2 GHz is achieved & omnidirectional pattern obtained, the results were obtained using the simulation software HFSS.

Keywords: BW, rectangular microstrip patch antenna, ground variation, symmetrical cuts, return loss, radiation efficiency.

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Authors:	Sharad R. Mahajan, Prasad Vilas Bapat
Title:	Specialized Noise Control Materials in the Automotive Industry

Abstract: The automotive industry is currently spending millions of dollars on NVH work to develop new materials and damping techniques. The new methods are starting to consider NVH issues throughout the whole design process. This involves integrating extensive modeling, simulation, optimization, and optimization techniques into the design process to insure both noise and vibration comfort. New materials and techniques are also being developed so that the damping treatments are lighter, cheaper, and more effective. Some of the methods used to control noise, vibration, and harshness include the use of different carpeting treatments, the addition of rubber or asphalt material to car panels, gap sealant, and the injection of expandable foam into body panels. The carpeting treatments include varying types of foam padding combined with different weights of rubber-backed carpet. The overall concept of this technique is a mass-spring system that acts as a vibration absorber. The rubber or asphalt materials are attached to various car panels to add mass and mass loading to reduce vibration levels and the rattling sounds from the panels. Sealant is applied to close gaps in order to increase the sound transmission loss from the engine, wind, and road noise sources to the vehicle interior. Expandable foam injected between panels, such as the dashboard and firewall, helps to add stiffness and vibration absorption. All of these current methods are effective at reducing sound and vibration levels in a vehicle over a wide range of frequencies. However, some of the treatments become almost ineffective at lower frequencies below 200 Hz. The treatments also add a significant amount of weight to the vehicle, thus affecting its fuel economy, as well as adding cost. Choosing the correct product for your application can be difficult, but not impossible. It is easy if you properly identify the noise from the start. There are many contributors to automotive noise and the noise exists across a wide range of frequencies. To effectively reduce the noise floor within a vehicle, a combination of materials must be used. This technique will result in a significant reduction in installation time, a serious reduction in the amount of added weight to the vehicle and bunch of money saved in your wallet. When trying to reduce or eliminate various types of automotive noise, it is often necessary to utilize a variety of specialized noise control materials.

Keywords: Noise, vibration, and harshness, Floor Barrier, vinyl barrier, Thermo-Acoustic under hood Liner, Gasketing Foam.

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Authors:	Edward Danso Ansong, Tony Takyi, Dominic Damoah, E. Afum Ampomah, Winfred Larkotey
Title:	Internet Trolling in Ghana

Abstract: This paper presents the definition and history of internet trolling as espoused by different views and some varied ways it is practiced. A link between the Ghanaian cyber communication space and this online practice is verified and substantiated with an empirical study with regards to some social media platforms. The social implications are analyzed and some recommendations are made.

Keywords: Trolling; troller; social media.

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Authors: Mahmod A. Al-Zubaidy, Samaa K. Al-Saffar

Title: Targets Signals Simulation in Radar System

Abstract: Radar system has many applications in the military and civilian fields; it is utilized for targets detection, obtaining the range, the direction, the angle and velocity (for moving target). These information can be extracted from target signal. Target effects on the transmitted signal, such effects are range and Doppler shift for moving targets. Generally, the development of radar systems and radar signal processing are always in progress and real time systems are not always available for testing these developments. This work required computer simulators which are used to test the modification and development of these systems. In this paper, the two types of targets (moving and fixed) signals are simulated. In order to implement the target block, transmitted signals and antenna location signals must be generated as inputs to target block. The target block is simulated using MATLAB Simulink, the target block is designed by specifying the parameters of target block such as the velocity, range, azimuth of a target (direction), the direction of the target and the angle and wavelength. This block is tested for all different types of radars such as pulse radar, pulse compression radar, continuous wave radar and frequency modulation continuous wave (FM-CW) radar.

Keywords: Radar system, target signal simulation, Doppler effect, radar signals.

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Authors: Vijayalakshmi G, Hema S, Geethapriya S

Title: Secure Data Aggregation & Query Processing in Wireless Sensor Networks using Enhanced Leach Protocol

Abstract: Data aggregation and storage has become very important issue in Sensor networks for future information retrieval. Storage nodes serve as an intermediate tier between sensors and a sink for storing data and processing queries in wireless sensor networks. The importance of storage nodes also makes them attractive to attackers. Data Storage is happens via the Forwarding nodes and Storage nodes. Storage nodes are introduced in this paper to collect data from the sensors in their proximities, It reduce the energy cost and communication cost induced by network query. Aim of the project is to deploy the storage nodes and secure data transmission for cluster-based WSNs (CWSNs), where the clusters are formed dynamically and adaptively. We propose two Secure and Efficient data Transmission (SET) protocols for CWSNs, called SET-IBS and SET-IBOOS, by using the Identity-Based digital Signature (IBS) scheme and the Identity-Based Online/Offline digital Signature (IBOOS) scheme, respectively. The cluster routing protocol LEACH (Low-Energy Adaptive Clustering Hierarchy) is considered and improved. We propose a clustering routing protocol named Enhanced LEACH (E-LEACH), which extend LEACH protocol by balancing the energy consumption in the network. The simulation results show that Enhanced LEACH outperforms LEACH in terms of network lifetime and power consumption minimization.

Keywords: LEACH, SET, SET-IBS, SET-IBOOS.

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Authors:	Hema S, Geethapriya S, Vijayalakshmi G
Title:	Speed Comparison of 32x32 Multiplier Using Vedic Mathematic Techniques

Abstract: Digital multipliers are the core components of all the digital signal processors (DSPs) and the speed of the DSP is largely determined by the speed of its multipliers. So the Implementation of Vedic Mathematic techniques and their application to the complex multiplier provide substantial reduction in propagation delay, execution time in comparison with the existing methods. This paper proposed the design of high speed Vedic Multiplier using the techniques of Ancient Indian Vedic Mathematics that have been modified to improve performance. The techniques described in this paper are Karatsuba Sutra, Urdhva Tiryakbhyam and Karatsuba-ofman and the performance analysis of these techniques is obtained. Modelsim tool is used for simulation and the results obtained are compared on the basis of time delay of multiplication.

Keywords: Vedic mathematics, urdhva triyakbhyam sutra, karatsuba - ofman algorithm.

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Authors:	Geethapriya S, Vijayalakshmi G, Hema S
Title:	Power Consumption of Hybrid Topology Control in WSN

Abstract: A Wireless Sensor Networks (WSN) consists of spatially distributed sensor to monitor physical conditions and pass their data through network to sink node. Topology control is an important technique used in WSN to achieve energy conservation and extend network lifetime without affecting network performance such as connectivity and throughput. Topology control can be implemented in following ways: power adjustment technique, power mode technique, clustering technique. In each of these techniques, there are some limitations. To overcome the limitations of the existing schemes, new hybrid scheme is proposed by integrating the above mentioned schemes. It is proved that the proposed hybrid approach excels in performance compared to the existing schemes in terms of energy savings.

Keywords: Cluster, cluster head, idle mode, sleep mode.

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Authors:	Suja K. J, Vidya Gopal T. V, Rama Komaragiri
Title:	Optimized Design of Double Diaphragm Based MEMS Pressure Sensor for Wider Range and Better Sensitivity

Abstract: Microelectromechanical system based silicon pressure sensors have undergone a significant growth in the last few years. The sensitivity, minimum measurable pressure and linear range of pressure sensors highly depend upon the diaphragm structure. In this work, single and double diaphragm based pressure sensors are designed and simulated and these can be used for high pressure measurements. A novel method of sensitivity enhancement by optimizing the thickness of double diaphragms is presented in this work. Also a study of the bulk micromachined silicon piezoresistive pressure sensor and surface micromachined stacked diaphragm pressure sensor are presented, simulated and compared with respect to linearity and sensitivity. Microelectromechanical system pressure sensors have been simulated with different diaphragm structures for obtaining wider linear range with better sensitivity. The performance of silicon and silicon on insulator pressure sensors at a given pressure are compared. The doping concentration of the piezoresistor is varied from 10^{15} cm^{-3} to 10^{20} cm^{-3} and the sensitivity of pressure sensors are compared. Evaluating different structures of pressure sensors and optimizing doping concentrations as 10^{17} cm^{-3} , the double SOI sensor shows better pressure sensitivity.

Keywords: MEMS, Piezoresistive Pressure Sensor, Surface micromachining, Bulk micro machining, Sensitivity.

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