PROCEEDINGS

of
Sixth National Conference
on

Communication, Information Technology and Electronics

CITEL 2018

10th & 11th APRIL 2018

Organized by

DEPARTMENT
OF
ELECTRONICS AND COMMUNICATION ENGINEERING

KUMARAGURU COLLEGE OF TECHNOLOGY
COIMBATORE – 641 049
TAMILNADU

ABOUT KUMARAGURU COLLEGE OF TECHNOLOGY

KCT is an autonomous Institution established in 1984, under the aegis of Ramanandha Adigalar Foundation, a charitable trust of the Sakthi Group. KCT is accredited by NAAC with A grade and ranked in top 100 for two consecutive years by NIRF. KCT offers 13 undergraduate and 14 PG programs with student strength of over 6000. KCT is situated in a 150 acre campus in the IT corridor of Coimbatore city has good infrastructure and facilities to aid academic research and study.

ABOUT DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGG

The Department of Electronics & Communication Engineering was started in the year 1987. The Department offers 4 year NBA Accredited B.E. degree programme in Electronics & Communication Engineering and two full-time PG programmes in Communication Systems & Applied Electronics. The Department has a team of well-qualified, dedicated faculty members with adequate industrial and research background. The Department is fully equipped with state-of-the-art laboratories with high-end computers and software tools. The laboratories include VLSI, DSP, Optical & Microwave Engineering, RF/Communication, Microprocessors & Microcontrollers.

ABOUT THE CONFERENCE

The advancements in the fields of Information technology and communication has enabled the world to move towards a newer order. The pace with which 4G vis-a-vis 5G technologies information technologies and embedded systems have evolved necessitates frequent interaction between academia and industry to understand and develop compatible standards and visualize better applications. The aim of the National Conference on “Communication, Information Technology & Electronics” (CITEL2018) is to provide a forum for scientific debate and constructive interaction between all participants. The event constitutes a valuable opportunity not only for knowledge exchange but also for fruitful collaborations between scientists, researchers, faculty and students. Two keynote sessions have also been arranged in emerging Communication Technology and Embedded systems. The conference also includes to pre- conference workshops Current Research Challenges in Speech Signal Processing and Its Applications, Workshop on M2M-LoRa and a project competition Da-Win-Competition.

KUMARAGURU COLLEGE OF TECHNOLOGY, COIMBATORE - 641049
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Sixth National Conference on
COMMUNICATION, INFORMATION TECHNOLOGY AND ELECTRONICS
(CITEL 2018)

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Sixth National Conference on

Communication, Information Technology & Electronics

(CITEL 2018)

10th APRIL 2018

INAUGURATION SCHEDULE

Venue: Sir M. Visvesvaraya Hall, **Admin Block**

Time	**Agenda**	
9.30 – 9.32am	Prayer	
9.32 – 9.35am	Welcome Address	Dr.S.A.Pasupathy HOD-ECE
9.35 – 9.38am	About the Conference	Dr.K.Kavitha Professor / ECE
9.38 – 9.48am	Presidential Address	Shri. Shankar Vanavarayar Joint Correspondent, KCT
9.48 – 9.52am	Inaugural Address	Mr.A.K.Mohammed Azad Senior Director, Mirafra Software Technologies, Bangalore
9.52 – 9.57am	Special Address	Dr. J.Senthil Principal, KCT
9.57 – 10.00am	Vote of Thanks	Dr. K.Paramasivam Professor /ECE
10.00am – 11.00AM	**Keynote Address** Do we carry right skills? Are we innovating?	Mr.A.K.Mohammed Azad Senior Director, Mirafra Software Technologies, Bangalore

Sixth National Conference on

Communication, Information Technology and Electronics
CITEL '18

SCHEDULE

10th & 11th April 2018

	Time	Event
Day 1	9.00 am to 9.30 am	Registration
	9.30 am to 10.00 am	Inauguration
	10.00 am to 11.00 am	Key note Address: Mr. A. K. Mohammed Azad Sr. Director, MIRAFRA Software Technologies, Bangalore
	11.00 am to 11.30 am	Tea Break
	11.30 am to 1.30 pm	Technical session I
	1.30 pm to 2.00 pm	Lunch Break
	2.00 pm to 4.00 pm	Technical session II
	4.00 pm	Tea Break
Day 2	09.30 am to 10.30 am	Key note Address
	10.30 am to 11.00 am	Tea Break
	11.00 am to 1.00 pm	Technical session III
	1.00 pm to 2.00 pm	Lunch Break
	2.00 pm to 4.00 pm	Technical session IV
	4.00 pm	Tea Break

RF & Antennas

Day : 10.04.2018
Session : I
Time : 11.30 am – 1.30 pm
Venue : Conference Hall ,C103

1. Design, Simulate And Analyze The Performance Of Parallel Coupled Microstrip Bandpass Filter At 1.5ghz For GPS Applications
   Loshni T, Aparna A P, Prof.K.Ramprakash
   Kumaraguru College of Technology, Coimbatore

2. Review On Various Approaches Of Pattern Synthesis In Antenna Array
   Anitha Suresh , Dr. Puttamadappa C
   Dayananda Sagar University, Bangalore.

3. Literature Review on Conformal Antennas for Avionics or Airborne Applications
   Pushpa B R Dayanandh Sagar College of Engineering,
   Dr. H L Viswanath, Professor, Dayanandh Sagar university.

4. Interdigital Bandpass Filter For 2.5 Ghz LTE Application: Design And Performance Analysis
   Aparna.A.P, Loshni.T, Prof.K.Ramprakash
   Kumaraguru College of Technology, Coimbatore.

5. Distributed Power Control Algorithm In Wcdma
   Ashwin.A Chaitra Anantpur P.N.Jayanthi
   RV College of Engineering, Bangalore.

6. Investigation Of Wearable Ultra Wide Band Textile Antenna With Multilayered Structures Under Various Substrate Materials
   Vivishekh S , Dr S A Pasupathy
   Kumaraguru College of Technology, Coimbatore

7. Cognitive Radio (Cr) Spectrum Sensing Using Energy Detection Method
   Karuna Gayatri K, Kumaresan A
   Kumaraguru College of Technology, Coimbatore.

8. EBG Array Based Wearable Antenna For Gain Improvement
   Phavithra. P. J, Dr. A. Amsaveni
   Kumaraguru College ofTechnology, Coimbatore.

9. UWB Planar Monopole Antenna with Multi-Band Notching for High Data Rate Applications
   Chandramouli. A, Karthikeyan. R
   Kumaraguru College ofTechnology, Coimbatore.

10. Design of Dual Band Wearable Rectangular Slot Antenna at 2.9 GHz and 5.1 GHz for WIMAX and WLAN Applications
    S.Vinodhini1, R.Darwin
    Kumaraguru College ofTechnology, Coimbatore.

11. Design of flexible wideband antenna for conformal surfaces
    Pratyush Chaturvedi, AmanLohiya, Sachin Kumar, Sandeep Kumar P
    SRM institute of science and technology Chennai.

12. Design of heptaband planar monopole antenna
    P.V. Rama Dharith, Sachin Kumar I, Sai Kiran Y.N, Sandeep varma, Sandeep Kumar P
    SRM institute of science and technology Chennai.

13. Dual band-notched planar monopole antenna with tapered ground plane for ultra-wide band applications
    Prashant Saxena Sachin Kumar, Bidisha Sarma Sandeep Kumar P
    SRM Institute of Science and Technology Chennai .

14. Circularly Polarized Planar Monopole Antenna
    Pradeep Kumar Goud Vasa, Sachin Kumar, Ginne Manith, B. Lokesh Singh Thakur, Sandeep Kumar Palaniswamy
    SRM Institute of Science and Technology, Chennai.

15. Design and Analysis of Planar Wearable Antenna for Wideband Applications
    Divyank Grover T.Ramya Shivani Satya Sajneet Kaur Sandeep Kumar P
    SRM University Chennai.

16. Design Of Compact Super Wideband Monopole Antenna For MIMO Applications
    Meghna Choudhary, Keerthana Nimmagadda, Sandeep Kumar P, Sachin Kumar, Rohini Subramanian
    SRM Institute of Science and Technology, Chennai.

17. Design of Planar Diversity Antenna for Ultra Wideband Applications
    N.Sarat Chandra, V.Anirudh Vaidhyaa, Sandeep Kumar P,Sachin Kumar
    SRM Institute of Science and Technology, Chennai.

Signal and Image Processing

Day : 10.04.2018
Session : II
Time : 1.30 pm – 3.30 pm
Venue : Conference Hall ,C103

1. ANN Based EEG Classification For Parkinson's Disease
   V.Madhusri, PG, M.Narmatha, PG , Dr S.N Shivappriya,
   Kumaraguru College of Technology, Coimbatore

2. Active Learning In Classification Of Hyperspectral Imaging-A Review
   R.Elakkiya, K. Thilagavathi, A.Vasuki
   Kumaraguru College of Technology, Coimbatore

3. Performance Analysis Of Multiantenna NOMA-STBC
   Harshini N.M, Dr. K.Kavitha
   Kumaraguru College of Technology, Coimbatore

4. Vehicle Classification Based On Acoustic Signals Using Machine Learning Algorithms
   Sujatha D. Badiger , Manish K , Rahul A , Nikesh M , Nitesh D Shet
   R.V. College of Engineering, Bangalore.

5. Detection Of Brain Tumor In MR Images Using Various Optimization Algorithms
   Mr.K.Ragavan, A.Azhagu Lakshmi, M.HariniJayalakshmi, N.Muthumalar
   Ramco Institute of Technology, Rajapalayam.

6. Lung Cancer Detection Using Radial Basis Function And GLCM Features
   Sowmiya B R, Sasikala. S
   Kumaraguru College of Technology, Coimbatore

7. Robust Feature Training Of Different Dataset Using Constructed Stacked Autoencoder: Achieving Speed-Accuracy Trade-Off
   Dr.S N Shivappriya, Divya Raju
   Kumaraguru College of Technology, Coimbatore

8. Speed Breaker Detection Using GLCM Features
   Manikandan B, M. Bharathi
   Kumaraguru College of Technology, Coimbatore

VLSI & Embedded Systems

Day : 11.04.2018
Session : III
Time : 11.00 am – 1.00 pm
Venue : Conference Hall ,C103

1. Lo-Ra Based Waste Management System
   Periyanayagi.S , Divyadharshini.R, Jeyalakshmi.A , Koushika.G
   Ramco Institute of Technology, Rajapalayam.

2. Smart Crop Selection Technique Using Agri-Apps
   Periyanayagi. S , R. Stefy, M. Uma Maheswari , V. Uma Rani
   Ramco Institute of Technology, Rajapalayam.

3. Optimization Of Power In Transparent Scan PRPG Generation Based On BIST Architecture
   Thaarani P R, Thilagam S
   Kumaraguru College of Technology, Coimbatore.

4. An Area Efficient Square Root Carry Select Adder Using Cascaded Half Adders
   Dr.B.Deepalakshmi S.Devi M.Lavanya A.Kanagalakshmi
   Ramco Institute of Technology Rajapalayam.

5. Improvement Of Power System Stability In Transmission Line Using Static Synchronous Series Compensator (SSSC)
   Papitha R, Shanthi M
   Kumaraguru College of Technology, Coimbatore.

6. Design Of Dadda Multiplier Using Compressor Technique
   M.Narmatha, V.Madhusri, Dr S N Shivappriya
   Kumaraguru College of Technology, Coimbatore.

7. Design And Analysis Of Memristor Memory Cell Using Different Windowing Functions
   Dr. K. Paramasivam, R. Sathiya Priya, V. Saminathan,
   Kumaraguru College of Technology, Coimbatore.

8. IOT Based Smart Sensor Network For Safety Mining Environment
   Dr.K.Paramasivam, Rajendra prasad.A, Prasanth Kumar.S Naresh.R
   Kumaraguru College of Technology, Coimbatore.

9. Public Bus Status System
   Dr.S.N.Shivappriya, Anbazhagan.S, Aswin. P
   Kumaraguru College of Technology, Coimbatore.

10. Digital Ballot
    P.S.Rhenuka and B.Sathiyamohana S.Nagarathinam
    Kumaraguru College of Technology, Coimbatore.

11. Comparison Of Traditional Fast Multipliers With Stacking For Fast Multipliers
    Sneha K, Sohani L Gangolli, Ravishankar Holla,
    R.V College of Engineering, Bengaluru.

12. Design And Simulation Of PDMS Based Piezo-Electric Transducer Using COMSOLMultiphysics
    Roopa J, Swathi Hari, Geetha K S, B S Satyanaryana
    R.V College of Engineering, Bengaluru.

13. Performance Comparison Of Modified Baugh-Wooley And Booth Multiplier
    Shanthi D, Nagarathinam S
    Kumaraguru College of Technology, Coimbatore.

14. Design and Analysis of Low Power full adder
    Suresh kumar N , MAM College of Engineering, Siruganur
    K.Paramasivam, Kumaraguru College of Technology, Coimbatore.

15. Low Power Clock Gated Delay Buffers
    Anudeep Bonasu, Sanjeevan Goswami, M. Maria Dominic Savio
    SRM Institute of Science and Technology, Chennai.

16. IoT based Vehicle Pollution monitoring system
    G.Karthik Raja, S.Dhivakar, M.Bharathi
    Kumaraguru College of Technology, Coimbatore.

17. Water Theft Identification And Control System
    K. Bala Prashanthi, A.Suresh Babu, A. Kalaiselvi , Alexandra Wilson,
    Kumaraguru College of Technology, Coimbatore

Networks

Day : 11.04.2018
Session : IV
Time : 2.00 pm – 4.00 pm
Venue : Conference Hall ,C103

1. Investigation On Internet Of Things
   J.Poongodi , S.Sathish
   Sri Ranganathar Institute of Engineering and Technology, Coimbatore.
   Dr.K.Kavitha , Kumaraguru College of Technology, Coimbatore.

2. A Survey On Software Defined Wireless Sensor Networks
   S.Sathish , J.Poongodi
   Sri Ranganathar Institute of Engineering and Technology, Coimbatore.
   Dr.K.Kavitha , Kumaraguru College of Technology, Coimbatore

3. Wireless Body Sensing Network Based On Chaotic Compressive Sensing
   DA.Inieya Dharshini , J.Poongodi , S.Sathish
   Sri Ranganathar Institute of Engineering and Technology, Coimbatore.

4. A Survey On Various Reconfigurable Architectures For Wireless Communication Systems
   Karthi S P, Sri Krishna College of Engineering and Technology, Coimbatore.
   Kavitha K, Kumaraguru College of Technology, Coimbatore.

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5. eGRUB Ordering System
   C.Visvesvaran, S.Vijitha, S.Preethi
   Sri krishna College of Engineering and Technology, Coimbatore.

6. Routing Protocol For Load Balancing In A Fault Tolerant Network Using Reward-Based System
   Sourabh R Kulkarni, Kiran P Mahendra B M,
   R.V College of Engineering, Bengaluru.

7. Virtual Traffic Signals Using Ad-Hoc Wireless Networks .
   Sujay S Joshi, Suraj N ,Udit R M, Zainab Jamil Ahmed, Dr.Usha Rani K.R
   R.V College of Engineering, Bengaluru

8. TIC TAC TOE Game Application Development Using Amazon Web Services
   Swetha , Tanuja.K
   Coimbatore Institute of Technology, Coimbatore.

9. Smart Dumpster - A proposed smart solution to smart cities
   V.Koushik U.Gayathri
   Kumaraguru college of Technology, Coimbatore.

10. Zig-bee Protocol Based WSN For Environmental Monitoring Using Telosb Motes
    Malaravan A, M.Alagumeenaakshi
    Kumaraguru College of Technology, Coimbatore.

11. Implementation Of ACO Algorithm in RWA
    G.Karthikeyan, R.Hemalatha
    Kumaraguru College of technology, Coimbatore.

12. Duplicate detection and completeness approach for end users' data quality improvement in data federation
    Hema M S, Srilatha Chepure , Maheshprabhu R
    Aurora's Scientific Technological and Research Academy, Hyderabad.

RF&ANTENNAS

DESIGN, SIMULATE AND ANALYZE THE PERFORMANCE OF PARALLEL COUPLED MICROSTRIP BANDPASS FILTER AT 1.5GHZ FOR GPS APPLICATIONS

[1]Loshni T,[2] Aparna A P, [1, 2]Masters Scholar, [3]Prof.K.Ramprakash Professor, Head of PG Programme
Kumaraguru College of Technology, Coimbatore, TamilNadu, India

Abstract:

In this trending generation, world is mainly focusing on system miniaturization, without affecting the performance of the system. Global Positioning System (GPS) is the satellite based navigation system, mainly used for tracking. Radio Frequency (RF) filters used in this GPS receiver should be in compact size. One of the RF transmission line structure is micro strip line structure, and it is the most preferable one because of its low cost, compact size, less weight etc. In this paper, a compact sized parallel coupled microstrip band pass filter was designed with the frequency of 1.5GHz lies in the L band and 200MHz bandwidth. The simulation was carried out by using the software, Advanced Design System 2016 (ADS). Easily available and cost effective FR4 substrate with the dielectric constant of 4.4 was used to design the filter. The designed filter meets the required insertion and return loss values.

REVIEW ON VARIOUS APPROACHES OF PATTERN SYNTHESIS IN ANTENNA ARRAY

[1]Anitha Suresh , Research scholar, [2]Dr. Puttamadappa C, Professor
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Abstract:

Antenna arrays play a vital role in detection and processing of signals arriving from various directions. Antenna array synthesis aims at obtaining a physical layout of the array whose radiation pattern is very close to the desired pattern. Antenna arrays are used to direct radiated power towards a desired angular sector. The number, geometrical arrangement, relative amplitudes and phases of the array elements depend on the angular pattern that must be achieved. Once an antenna array is designed to focus towards a specific direction, it is possible to steer or scan it towards different directions by changing the relative phases of the array elements—a method known as steering or scanning.

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LITERATURE REVIEW ON CONFORMAL ANTENNAS FOR AVIONICS OR AIRBORNE APPLICATIONS

[1]Pushpa B R, Assistant Professor, [2]Dr. H L Viswanath, Professor
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[2]Department of ECE, DSU, viswanath-ece@dsu.edu.in

Abstract:

Conformal antennas are the solution to increase in need for perfect radiating systems in avionics or airborne applications. A brief overview of microstrip antennas which form a part of conformal arrays is done. A survey on analysis and synthesis methods of conformal antennas for airborne applications employing toroidal microstrip antenna is presented.

INTERDIGITAL BANDPASS FILTER FOR 2.5 GHZ LTE APPLICATION: DESIGN AND PERFORMANCE ANALYSIS

[1]Aparna.A.P, [2]Loshni.T, [1,2] Masters Scholars, [3]Prof.K.Ramprakash, Head of PG Program,
Kumaraguru College of Technology, Coimbatore

Abstract:

Microwave filter is an indispensable component in all types of communication systems. The most desired features for filters thus designed are accuracy and satisfying degree of performance. The objective of this paper is to design an Interdigital bandpass filter operating at a frequency of 2.5 GHz. This filter is therefore, suitable for LTE(Long Term Evolution) systems. The implementation of the filter is done using FR4 substrate and the simulation of the filter is done using Keysight ADS (Advanced Design System) software. Parameters such as insertion loss, returnloss and 3-dB bandwidth are measured for analyzing the performance of the filter.

DISTRIBUTED POWER CONTROL ALGORITHM IN WCDMA

[1]Ashwin.A, [2]Chaitra Anantpur, [1,2] PG Scholars, [3]P.N.Jayanthi, Assistant Professor
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Abstract:

Power control algorithms play a critical role in communication systems and technology. When it comes to wireless communication, power management procedure will be critical while maintaining signal and user data integrity being the primary concern. In most of the WCDMA and LTE network closed loop and open loop power control algorithm are employed. On top of it a mathematical analysis is employed to compute the required amount of power level is calculated using centralized power control algorithm. To achieve the fast convergence of user data and to reduce the overhead on base station distributed power control algorithm is employed.

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INVESTIGATION OF WEARABLE ULTRA WIDE BAND TEXTILE ANTENNA WITH MULTILAYERED STRUCTURES UNDER VARIOUS SUBSTRATE MATERIALS

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Abstract :

A wearable Ultra wide band (UWB) antenna with different textile material were analysed excluding the SMA connector. The Coplanar waveguide feed lines technique is adopted in the design and the effect of parasitic element was analysed to measure the effectiveness of the antenna. The multilayered structure of the antenna obtained a good matching over the UWB band. Further, four fabric materials having relative permittivity of 1.3, 1.44, 1.56 and 1.6 were used as substrate materials and their performance were compared. The Felt fabric having permittivity of 1.3 showed superior performance over other materials in the in radiation efficiency, radiation pattern, Scattering parameter, directivity and Gain.

COGNITIVE RADIO (CR) SPECTRUM SENSING USING ENERGY DETECTION METHOD

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Abstract:

Cognitive radio is an efficient way to handle the inefficient usage of limited spectrum. Cognitive radio have been proposed to lessen the problem of spectrum dearth by allowing unlicensed (Secondary user-SU) users to access a vacant frequency band of a licensed (primary user-PU) users. Spectrum sensing is the very first process of CR which allows SU to autonomously identify the unused radio spectrum of PU, and thus avoid interference to PU. Spectrum sensing using energy detection (ED) method is quite simple and has less complexity. The performance of spectrum sensing with fixed threshold energy detection and variable threshold energy detection is analyzed using ROC. The probability of detection (PDetect) will be high in variable threshold ED compared to that of fixed threshold ED.

978-93-90853-23-6

EBG ARRAY BASED WEARABLE ANTENNA FOR GAIN IMPROVEMENT

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Kumaraguru College of Technology, TamilNadu, India
Corresponding Author: phavithrajaganathan@gmail.com

Abstract:

This paper presents a Electromagnetic Band Gap (EBG) array based wearable antenna operating at 2.47 GHz, which supports the Wireless Local Area Network (WLAN) band and Industrial Scientific, and Medical (ISM) band. The overall dimension of the antenna is 56*56*1.6 mm and substrate material used is denim fabric material with a dielectric constant of 2.3405 for both antenna and EBG structures. The proposed antenna with 2*2 EBG array structure improves the gain up to 6 dB. The result calculated that is Reflection Coefficient, S11 of the antenna with and without EBG structures are -19.17 dB and -25.47dB and the gain of an antenna with and without EBG structures are 2.68 dB and 9.36 dB. The antenna parameters like gain, directivity, reflection coefficient and VSWR will be evaluated to analyze the performance of the proposed antenna. The proposed antenna is designed and simulated using Computer Simulation Technology (CST) Microwave Studio software.

UWB PLANAR MONOPOLE ANTENNA WITH MULTI-BAND NOTCHING FOR HIGH DATA RATE APPLICATIONS

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Kumaraguru College of Technology, Coimbatore
[1]a.chandramoulee@gmail.com, [2]karthikeyan.r.ece@kct.ac.in

Abstract:

A compact planar UWB monopole antenna (30*30*1.6mm3) with Tri-band notching characteristics is proposed in this paper. The proposed antenna resonates for the entire UWB Band (3.1 to 10.6GHz). Slots are introduced in the structure to notch the three different licensed bands WiMAX (3.3-3.7GHz), WLAN (5.2- 5.9GHz) and Satellite NATO H band (6-8GHz) operate within UWB band. This antenna suits for interference free high date rate UWB applications. Gain enhancement is achieved by incorporating a rectangular cut at the ground plane exactly the backside of the feedline - radiator meet point. The proposed antenna is designed and simulated using HFSS tool. The prototype is fabricated and tested. The simulated and tested results are compared.

978-93-90853-23-6

DESIGN OF DUAL BAND WEARABLE RECTANGULAR SLOT ANTENNA AT 2.9 GHZ AND 5.1 GHZ FOR WIMAX AND WLAN APPLICATIONS

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Abstract:

This paper presents the design of dual band wearable rectangular slot antenna resonating at 2.9 GHz and 5.1 GHz bands. The wearable antenna has several requirements must be considered during the designing of antenna such as small size, light weight, flexible, maintenance free, conformal to devices and also operating with minimal degradation in proximity to the human body. For increasing the flexibility and comfort ability to the user, denim is used as a substrate material and conductive metalized nylon fabric (Zell) is used as a conducting material. The overall size of the proposed antenna is 68x60 mm2. The simulated S-Parameter, VSWR, Gain and Directivity of the proposed structure show an excellent performance of the antenna. The proposed antenna is optimized on software package Computer Simulation Technology (CST) Microwave Studio package 2017. The proposed antenna has a gain of 2.725 dB and 7.572 dB with VSWR of 1.3 and 1.16 for the dual bands 2.9 GHz and 5.1 GHz respectively. This antenna is suitable for the application required a dual-band wearable antenna within the WiMAX and WLAN bands.

DESIGN OF FLEXIBLE WIDEBAND ANTENNA FOR CONFORMAL SURFACES

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[4]vrpchs@gmail.com

Abstract:

This project brings out the design, fabrication and performance evaluation of a compact wideband antenna for conformal surfaces. Teslin paper of thickness 0.712 mm and dielectric constant 2.2 has been selected as the substrate material due to its features like ultra-low cost, fast fabrication, uniform thickness, chemical stability and eco-friendly nature. Copper tape of thickness 0.03mm is used for making the radiator and the ground plane of the antenna.The principal focus of the project has been to reduce the size of the antenna without compromising it's efficiency.The antenna radiator is fed by a 50 ohm feedline of width 2.2mm.It is fed with a thin microstrip for low cost and fast fabrication.The antenna is designed to operate between 3.1 to 15 Ghz frequency range and can be used for c,x,Wireless usb,MVDDS based applications.

978-93-90853-23-6

DESIGN OF HEPTABAND PLANAR MONOPOLE ANTENNA

[1]P.V. Rama Dharith, [2]Sachin Kumar, [3]I. Sai Kiran, [4]Y.N. Sandeep varma, [5]Sandeep Kumar P
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Abstract:

In this paper, a miniaturized planar multiband monopole antenna is presented. It is fed by a microstrip feed line. It consists of a series of elliptical arcs placed with an uniform width of 1 mm. The length of each arc is determined using the resonance condition of quarter wavelength. Each arc corresponds to different frequency bands. The ground plane has an L-shaped slot in it. The antenna radiator is fed through a thin micro strip feed line that provides a 50 ohm impedance. The proposed antenna has dimensions of 24 x 29.5 x 0.8 mm3 in which ground plane occupies an area of 15 x 12.5 mm2 .This demonstrates a heptaband antenna which covers applications including WLAN/WIMAX , telemetry, defense, radiolocation, mobile and satellite at frequency bands including 1.5-1.6 GHz, 2.6-2.8 GHz, 3.6-4.0 GHz, 4.3-4.8 GHz, 4.95-5.5 GHz, 5.8-6.4 GHz, 7.0-8.2 GHz. The proposed antenna is to be fabricated on a 0.8mm thick FR4 substrate with dielectric constant 4.4 and loss tangent 0.002. The reflection coefficient and radiation pattern are discussed in detail.

DUAL BAND-NOTCHED PLANAR MONOPOLE ANTENNA WITH TAPERED GROUND PLANE FOR ULTRA-WIDE BAND APPLICATIONS

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Abstract:

This paper proposes a planar printed monopole antenna that operates in the ultra-wide band that has wide impedance bandwidth and nearly omni-directional azimuthal radiation pattern. The antenna consists of a radiator made up of ellipses with a pair of rectangular slots of appropriate lengths, a tapered ground plane with a semi-circular cut in order to provide a wide bandwidth, and a tapered feed along with an elliptical ring at its end. Two rectangular slots of length 24 mm and 17.7 mm are created to get dual notched bands. The tapering of the ground plane and the semi-circular cut is responsible for a higher impedance bandwidth due to the coupling. The results reveal that the antenna radiates in the ultra-wide band which includes the notched bands, C band (3.7-4.2GHz), WLAN (5.15-5.35 and 5.725-5.825GHz). The proposed design has a size of 14X20 mm2 which reflects its compactness. The substrate used is FR4.

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CIRCULARLY POLARIZED PLANAR MONOPOLE ANTENNA

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Abstract:

The paper proposes a circularly polarized planar monopole antenna with antenna radiator consisting of three elliptical elements fed through microstrip line. The circularly polarized operation is achieved by vertically extending one side of the ground plane and a broad impedance bandwidth is obtained by loading several slots in the ground plane. The 3-dB axial ratio bandwidth is about 1 GHz varying from 7.54-8.49 GHz approximately 11.4% with respect to the center frequency 8.0 GHz. The -10-dB impedance bandwidth of the antenna varies from 5.06 GHz to 10.36 GHz.

DESIGN AND ANALYSIS OF PLANAR WEARABLE ANTENNA FOR WIDEBAND APPLICATIONS

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Abstract:

This paper presents a wearable planar antenna for wideband applications. The proposed antenna is fabricated on a 28 x 28 x 1 mm jeans substrate. A simple rectangular monopole antenna design is suitably revamped to cover all the frequencies of various wireless standards such as WiMAX (3.5/5.8GHz), Wifi (5/5.2GHz), and WLAN (5.2/5.8GHz). Simulations such as the reflection coefficient characteristics and radiation pattern characteristics have been shown.

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DESIGN OF COMPACT SUPER WIDEBAND MONOPOLE ANTENNA FOR MIMO APPLICATIONS

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Abstract:

A compact microstrip fed monopole antenna for Super Wideband (SWB) applications is proposed. The radiating patch comprises of circles and ellipse clubbed together to form a structure with a partially covered elliptical ground plane. The ground plane has been modified with a few slots to improve the performance of the antenna. The compact antenna of size 20 X 28 mm2 operates over a bandwidth of 2.9-100 GHz to achieve a ratio impedance bandwidth of 34.48:1 for VSWR<2. The proposed antenna is fed with a 50 ohm tapered feedline and is fabricated on FR4 substrate. The width of the feed is 1.6mm and the relative permittivity of the FR4 substrate is 4.4. The proposed antenna is to be replicated and placed orthogonally to realize a four port MIMO antenna. The antenna can be used in C, X, Ku, K, Ka, WiMAX, UWB, Wireless USB, MVDDS communication systems.

DESIGN OF PLANAR DIVERSITY ANTENNA FOR ULTRA WIDEBAND APPLICATIONS

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Abstract:

The paper deals with reduction of mutual coupling between four port, UWB diversity antenna. The unit cell monopole antenna is designed on 0.8 mm thick FR4 substrate which has aε =4.3.The antenna is made to operate between 3.1 GHz -10.6 GHz by making necessary modifications in the radiator plane and ground plane thereby covering the entire UWB range.The unit cell is replicated three time and are placed orthogonal to each other to achieve polarization diversity and reduce mutual coupling.

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Signal and Image Processing

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ANN BASED EEG CLASSIFICATION FOR PARKINSON'S DISEASE

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Abstract:

Freezing of gait (FOG) is a symptom of Parkinson's disease (PD), in which patients experience sudden difficulties in starting or continuing locomotion. Currently there are no mechanism to detect Freezing of Gait effectively before it occurs. In this paper, we investigated the univariate and multivariate EEG (Electroencephalography) features determined by both Fourier and wavelet analysis in the prediction of FOG. Information coded in the frequency domain is better than information coded in the time domain. For better performance MLP-NN (Multilayer Perceptron Neural Network) and both domains are used. Due to this the sensitivity, specificity and accuracy respectively were obtained.

ACTIVE LEARNING IN CLASSIFICATION OF HYPERSPECTRAL IMAGING-A REVIEW

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Abstract:

Hyperspectral images are used to characterize the objects with unprecedented accuracy of the data. The active learning aims at providing efficient training set by iterating the samples. This paper reviews the concepts involved in active learning algorithm for classification of remote sensing image or hyperspectral image. The diversified vision of hyperspectral sensors was awakened with the latest development of remote sensing and geographical information. Imaging spectroscopy which is commonly known as Hyperspectral remote sensing was recently inspected by researchers and scientists for exploring vegetations, minerals, etc. This hyperspectral imaging requires large data sets and new processing techniques. Several active learning algorithms are implemented in hyperspectral images for better classification and greater accuracy

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PERFORMANCE ANALYSIS OF MULTIANTENNA NOMA-STBC

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Abstract:

This paper bringforths the concept of space time block codes for NonOrthogonal Multiple Access (NOMA). Wireless communication networks are rapidly driven to meet the requirements interms of spectral/power efficiency. NOMA serves as promising technology in meeting these requirements by means of breaking orthogonality and serving all the users in same time/frequency domain by only differing in their power levels. This paper compares the Bit Error Performance (BER) of two user NOMA system in existence of STBC and in devoid of STBC. The results shows that BER performance of NOMA system with STBC acts better than the simple NOMA.

VEHICLE CLASSIFICATION BASED ON ACOUSTIC SIGNALS USING MACHINE LEARNING ALGORITHMS

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Abstract:

This paper deals with a comparative study of three machine learning algorithms for classification of vehicles using acoustic signals. Each type of vehicle varies in the type of sound they produce, hence, can be classified accordingly. The recordings of cars, bikes and truck were collected at 16 kHz. The features were extracted from these signals based on the maximum energy region that was identified and sampled. The obtained samples were converted into frequency domain. Once the features were extracted, three machine learning algorithms: K Means, K Means++ and Artificial Neural Networks (ANN) were used to classify the vehicles into three main categories: Bikes, Cars and Trucks. The results obtained were compared on the basis of accuracy, time and space complexity.

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DETECTION OF BRAIN TUMOR IN MR IMAGES USING OPTIMIZATION ALGORITHMS

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Abstract:

Recent advancements in technology have brought many improvements in the field of medicine. Looking the inner parts of the human body through scanning has become very simple and a common one. The details of the scan reports are very important especially in diagnosing and selection of treatment for brain tumors. Since the shape of tumor is very important in deciding the type of treatment, finding out the exact tumor shape and position has become essential. This project aims at finding the exact shape of the brain tumor. The tumor is effectively segmented by various Clustering and Optimization techniques. The process includes preprocessing, segmentation using Particle Swarm Optimization algorithm, Weighted Particle Swarm Optimization algorithm, Fuzzy C Means clustering algorithm and the combination of Particle Swarm Optimization with Fuzzy C Means clustering and then the comparison of results. The results of various segmented image are compared in terms of efficiency parameters such as Mean, Standard Deviation, Entropy, Accuracy, Sensitivity and, Specificity for the segmented tumor.

LUNG CANCER DETECTION USING RADIAL BASIS FUNCTION AND GLCM FEATURES

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Abstract:

Analysis and cure of malignancy have been one of the greatest difficulties faced by humans over the most recent couple of decades. Early identification of tumor would facilitate in sparing a huge number of lives over the world consistently. This paper presents an approach which utilizes a Radial Basis Function to arrange tumors found in lung growth screening computed tomography examines as normal or abnormal. Radial Basis Function Neural Network have extraordinary properties, for example, spatial invariance, and take into account various element extraction. In this work, we have composed a RBF appropriate for the investigation of CT filters with tumors, utilizing space learning from both pharmaceutical and neural systems. The outcomes demonstrate that the precision of classification for our system performs superior to both the traditional neural systems, and furthermore existing neural networks worked for image classification purposes.

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ROBUST FEATURE TRAINING OF DIFFERENT DATASET USING CONSTRUCTED STACKED AUTOENCODER: ACHIEVING SPEED-ACCURACY TRADE-OFF

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Abstract:

Stacked Auto Encoder (SAE) which uses greedy layer wise approach for pretraining a deep network works by training each layer and it is widely used as it solves classification problems with complex data, such as images. In this paper image datasets such as MNIST and IMAGENET is taken and it is trained. The time consumed and accuracy during the training period is calculated for the MNIST dataset which is binary image and IMAGENET dataset includes colour image applying the Stacked Auto Encoder algorithm which is trained one layer at a time. Here the SAE consist of three layers which is stacked together and its parameters are varied in such a way that the constructed SAE outperforms achieving time and accuracy trade-off. The SAE model improve the validation-set accuracy by a noticeable margin. This paper demonstrates the effectiveness of using the SAE model.

SPEED BREAKER DETECTION USING GLCM FEATURES

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Abstract:

Road accidents are increasing worldwide, that leads to death, injuries and vehicle damages. Most of the accidents happen due to the improper warning sign and unnoticeable speed breakers on the road, especially during the night. Identification and notification of road signs and speed breakers to the driver at the proper time is very important to avoid accidents. In this paper, speed breaker identification using Gray Level Co-occurrence Matrix (GLCM) is proposed. This method has three stages namely preprocessing, feature extraction and classification. Noise removal, resizing the image and grayscale conversion has been done as a part of pre-processing. In the feature extraction step, the spatial relationship between the pixels is obtained by gray level co0occurance matrix. GLCM extract the second order statistical features of the image. These features include correlation, Angular Second Moment, Entropy, Homogeneity, and contrast. In this paper, features are considered as the shape, texture and feature statistics. Then the classifier used to identify the presence of speed breaker. The performance of the classifier is evaluated by calculating the confusion matrix.

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VLSI & EMBEDDED SYSTEMS

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LoRa BASED WASTE MANAGEMENT SYSTEM

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Abstract:

Waste management is the one of the primary problem that the world faces irrespective of developed or developing country. The major issue is that the garbage bin sometimes gets overflowed in advance before the next cleaning process. It causes bad odour and ugliness to the surrounding place which may cause various diseases. To improve the public health and to promote cleanliness, a smart waste management system was introduced. The previous methods of smart waste management have some disadvantages like increased power consumption and can control only small area. To overcome all these problems, the concept LoRa was introduced. LoRa is a low power technology. LoRa technology uses license free frequency bands. The practical coverage range of LoRa is 2 Km. LoRa gateway can control up to 1000 devices. Also, all the data from the devices can be sent to the LoRa gateway so that the status of each device can be monitored. LoRa gateway will send all the data to the web server so that they can be accessible from anywhere in the world. The proposed project uses ultrasonic sensor to get the level of garbage bins places in the cities. The level of garbage will be updated to the web server in the municipality through LoRa gateway, so that the periodic monitoring of garbage bins will be eliminated. The transportation cost will be eliminated

SMART CROP SELECTION TECHNIQUE USING AGRI-APP S

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Abstract:

Agriculture is the backbone of our economic system. It not only provides raw materials for food, but also provides large employment opportunities. The crop failures are due to the weather condition and pests provided to the soil. The objective of this paper is to develop an agricultural application which is used to help the farmers know about the soil parameters. Because of the changes in climatic conditions, the nutrients present in the soil will be varied. Farmers are not aware of the soil parameters present in their field. They are cultivating the crops based on their experience which leads to crop failure. In this paper, the soil parameters such as temperature, pH and moisture content in different types of soil are sensed by using sensors and the sensed analog values are converted into digital by using Arduino. From the Arduino the data is passed to mobile through GSM technology. The AGRIAPP has been developed to know about the suitable crops which can be cultivated by the farmers. In this application, the sensed value from the sensor is compared with the static value and suitable crops which can be cultivated in the soil is displayed

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OPTIMIZATION OF POWER IN TRANSPARENT SCAN PRPG GENERATION BASED ON BIST ARCHITECTURE

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Abstract:

Design for testability methodology is the most important process in IC design fabrication development. Different kinds of testing methodology are performed to implement the low power BIST in real time usage. Logical wise BIST testing can be used as bench mark circuits. BIST method is incorporated into different logical structure through functional testing. Pseudo random pattern generation generator is used to analyze the BIST architecture. The proposed work is implemented in transparent scan sequence based on LFSR generation process for reducing the overall BIST architecture and power consumption level. For simulation purpose this method is deployed in S1423 Bench mark circuit.. In this paper complexity level are optimized and testing method are improved.

AN AREA EFFICIENT SQUARE ROOT CARRY SELECT ADDER USING CASCADED HALF ADDERS

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Abstract:

Binary addition is one of the primitive operations in computer arithmetic. High performance VLSI integer adders are critical elements in general purpose and digital-signal processing processors since they are employed in the design of Arithmetic-Logic Units, in floatingpoint arithmetic data paths and in address generation units. It is highly desirable to lower the delay, power or energy consumptions and area usage of adders, for efficient implementation of different applications. Speed can be achieved by means of Square Root Carry Select Adder (SQRT CSLA). From the structure of SQRT CSLA, there is a scope to reduce area and power by using Zero Finding Logic (ZFL)[1] technique. By using ZFL technique in SQRT CSLA, 16-bit architecture has been developed. The modified architecture has reduced area and power when compared to SQRT CSLA Adder. The adder is implemented on Spartan 3E FPGA and is compared with SQRT CSLA. Result analysis shows that the proposed adder gives reduced memory and power when compared to SQRT CSLA using ZFL

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IMPROVEMENT OF POWER SYSTEM STABILITY IN TRANSMISSION LINE USING STATIC SYNCHRONOUS SERIES COMPENSATOR(SSSC)

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Abstract :

In electric power system, network have continuous demand and heavy load, that may lead to voltage instability. Under heavy loaded condition there may be insufficient reactive power causing the voltage drop. This may lead to drop in voltage at various buses. The result would be the occurrence of voltage stability control problems. Thus, real and reactive power compensation in transmission line is needed and this improves the stability of ac system. Flexible Alternating Current Transmission System (FACTS) technology helps to control the power. The controller minimizes the generating error. In power system, Static Synchronous Series Compensator (SSSC) is used as a series reactive power compensation .Series injected voltage, which leads or lags the line current by 90° is the output of an SSSC, thus emulating a controllable inductive or capacitive reactance. SSSC can be used to minimize the line impedance and improve the active power transfer capability of the line. This project is done using MATLAB in Simulink The current results analyze that SSSC systems provide good performance.

DESIGN OF DADDA MULTIPLIER USING COMPRESSOR TECHNIQUE

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Abstract:

The paper presents the design of the Dadda multiplier using 4:2 compressor techniques. The three design techniques namely conventional design, design using exclusive OR and multiplexer and an optimized design with less number of critical paths are implemented. All the three designs are implemented in Dadda multiplier and compared with the Wallace tree multiplier which is also designed. The performance metrics measured are area, power consumption, delay and transistor count using three design techniques. The designs are done using behaviouralmodelling and the results are taken in the 18nm Cadence tool. The result shows that Dadda multiplier has better performance than the Wallace tree multiplier in terms of delay, area and transistor count for all the three designs.

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DESIGN AND ANALYSIS OF MEMRISTOR MEMORY CELL USING DIFFERENT WINDOWING FUNCTIONS

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Abstract:

In recent years, the rapid growth of battery operated devices has made the low power memory design a desire in the industry. As the number of transistor increases, the leakage current has made the SRAM unit a power hungry block from both the static and dynamic perspectives. Nowadays, the SRAM block is an important part in SOC design. For memory design, the power dissipation and area are the main factors. In this design, scaling of memory density must continue to track the scaling trends of logic. Technology scaling has been aggressively developed during last several years and almost close to the final states. In order to cope with high density new technology, silicon based memory cell also needs to be replaced by alternate devices. Memristor is one of the promising novel elements for memory cell. It can be seen that memristance M depends on charge q, which is defined as the time integral of the memristor current. It is a non linear passive two terminal electrical component which limits or regulates the flow of electrical current in a circuit and remembers the amount of charge that has previously flowed through it. It maintains a connection between the time integrals of current and voltage across the two terminals. Thus it can be regarded as a nonlinear resistor with memory. In this project Memristor and its performance is analysed by using two different window functions in MATLAB. Hysteresis curve is obtained for analysis. Conventional 6T SRAM cell is modified to add memristor elements and CMOS-Memristor based memory cell is designed and simulated in LT spice for its performance in 180nm technology. Peak and average power are obtained for conventional 6T SRAM cell and proposed memristor memory cell. Power results are compared and shows that power reduction in memristor based memory cell is up to 94% compared with conventional 6TSRAM cell.

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IOT BASED SMART SENSOR NETWORK FOR SAFETY MINING ENVIRONMENT

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Abstract:

Currently, we know that mining is a risky process where miners are risking their life to get the desired work done. It is not fault of one individual whenever a accident happens inside a mine. It is actually a natural cause and one thing an individual can do is to predict and prevent. Though high-end technologies are developing for the prevention, a stable design is not yet confirmed. Miners are dying and accidents are going in increased rate day by day. This project is about assisting miners using a smart safety helmet node with miners and mine monitoring node. Helmet and monitoring nodes are with sensors to detect fire, harmful gases and land slip in mines and interact with each other using transceiver in case of emergencies. Both the nodes are designed and implemented using TI cc3200 board and tested for its functionality. It is observed that node sends alert signal to other node after detecting emergency condition using sensors. All these values are uploaded to the IOT cloud based system and can be inferred by any authorized user. The proposed project will be helpful to miners to manage the emergency situation with prior alert so that massive disaster can be predicted and prevented.

PUBLIC BUS STATUS SYSTEM

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Abstract :

This project mainly aims at reducing the excess time spent by the people waiting in the bus stop for local buses to reach their destination. Here RFID sensors are used to update the current bus location in accordance with bus stops. RFID reader is placed in local buses and RFID tag is placed in bus stops, each RFID tag has unique identification code so that it will be easy to identify the bus stops. The user can set an alert to the bus stop prior to their stop, so that if the bus reaches that specified stop an alert will be sent to the user. After that the user can move to their bus stop, so that the excess time spent by the people on bus stop is reduced. In addition to that a buzzer will be placed near driver, in case of bus breakdown or any other problems a driver manually switch on the buzzer,then it will send a notification to the user that the bus had breakdown, so that the user can choose other available bus to their destination or other means of transportation without waiting for that bus.

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DIGITAL BALLOT

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Abstract:

Voting is the root of the democracy. It should be done in the righteous way. But now-a-days, malpractice is done during the elections. The counterfeit votes can be avoided only by adopting the new technology in place of the older ballot method. In this project, Adhaar database is used for upholding the security using the biometric (i.e.,) the finger print of the voters. This electronic voting ballot, allows the voters to cast only their vote, and prohibits them from voting multiple times, with the help of their biometric detail, since it is unique for each person. And also the voters can check whether their vote is recorded properly in this digital machine. This usage is also secured by using the former technique. Here, the vote count can also be done easily, as it is also digitalized. As a whole, this system will definitely improvise the standard, confidentiality of the election, once when it is brought into the practical usage. This will also reduce the complexity and creates the friendly environment for both the Election Commission and the voters.

COMPARISON OF TRADITIONAL FAST MULTIPLIERS WITH STACKING FOR FAST MULTIPLIERS

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Abstract:

Multiplication represents one of the major bottlenecks in most digital processing systems. Depending on the word size, several partial products are added to evaluate the product. The well-known shift-and-add algorithm uses minimal hardware but has unacceptable performance for most applications. Several parallel fast multiplication schemes have been suggested using several levels of blocks containing full adders. The compressors are the basic components in many applications, in particular partial product summation in multipliers. This paper presents a simple architecture and design of high speed, low power 6:3 compressor capable of operating at ultra-low voltages. The proposed architecture uses 3-bit stacking circuits, which group all of the "1" bits together, followed by a simple symmetric method to combine pairs of 3-bit stacks into 6-bit stacks. The bit stacks are then converted to binary counts, producing 6:3 counter circuits with no xor gates on the critical path. This avoidance of xor gates results in faster designs with efficient power and area utilization. The power consumption, delay and area of this proposed counter is compared with existing architectures and is shown to perform better.

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DESIGN AND SIMULATION OF PDMS BASED PIEZO-ELECTRIC TRANSDUCER USING COMSOL MULTIPHYSICS

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Abstract:

Piezoelectric materials have long been used as sensors and actuators; however their use as electrical generators is less established. A piezoelectric power generator has great potential for several sensors and embedded applications. Such materials are capable of converting mechanical energy into electrical energy, but developing piezoelectric generators is challenging because of their poor source characteristics (high voltage, low current, high impedance) and relatively low power output. In the past these challenges have limited the development and application of piezoelectric generators. This work carried out makes use of COMSOL Multiphysics to simulate a piezoelectric transducer for energy harvesting. The study through simulation will give information on selection of material, behavior, and cost reduction even before going to fabrication.

PERFORMANCE COMPARISON OF MODIFIED BAUGH-WOOLEY AND BOOTH MULTIPLIER

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Abstract :

This paper presents an implementation of high-speed multiplier using VHDL (Very High Speed Integrated Circuits Hardware Description Language).In Booth multiplier multiplication process is done by both encoding and decoding. The Baugh-Wooley algorithm is performing signed multiplication and two's complement. In both modified Baugh-Wooley and modified Booth recoded multiplier the critical path delay has been reduced by using HPM tree concept and the speed is enhanced. Here the design of 8-bit Modified Baugh-Wooley multiplier and Booth multiplier has been designed and implemented by conventional method and also using HighPerformance Multiplier Reduction tree (HPM) technique. The speed of Modified HPM BaughWooley operation is increased by appending ripple carry adder. The results are evaluated and synthesized using Xilinx ISE 14.7.

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LOW POWER CLOCK GATED DELAY BUFFERS

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Abstract:

Power efficiency is the most important factor in todays electronics. The other factors that are also considered to determine the standard of electronic products are area and speed. Industries are competing to develop products of lesser power consumption, smaller size and faster speed. Though, clubbing all the three factors has not been possible till date, researchers are trying to infuse any of the two factors in todays electronic products. Thus, the idea of reducing power consumption and area in an SRAM based Delay Buffer came up. Portable devices have the requirement of delay buffer when transmitter and receiver work in different frequencies. Existing Delay Buffers use quad gated clock tree ring counter with three levels of gating of the master clock. A SRAM Delay Buffer has been designed with octa and octaX2 gated clock and a clock synchronizer called ADPLL. Clock gating is a technique which limits the clock for idle Memory units. Findings: The Delay buffers were normally designed with quad gated clock tree distribution. The proposed work shows that the octa and octaX2 gated Delay buffers added with ADPLL adjust the frequency dynamically in run time between transmitter and receiver to achieve low power. The simulation result shows great improvement in power consumption. A 64 x 8 buffer is designed with both octa and octaX2 clock gating, and then the simulation result is compared with quad gated existing delay buffer. The simulation is done using Modelsim 6.6d and power analysis is done both in Altera Quartus and Cadence. Application: Wherever the minimum power is required the follwing buffers are used in any SOC(system-on-chip) application.

DESIGN AND ANALYSIS OF LOW POWER FULL ADDER

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Abstract:

In this paper the different topologies of one bit full adders including the most interesting of one proposed is analysed and compared for Area , power, Delay, PDP. Results have shown that the proposed full adder cell exhibits least power consumption and propagation delay in the voltage range of 0.5 volts to 1 volts. The circuits have been designed and simulated at 65nm Technology using Tanner EDA tool.

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IOT BASED VEHICLE POLLUTION MONITORING SYSTEM

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Abstract :

Every vehicle has its own emission of gases, but the problem occurs when the emission is beyond the standardized values. The primary reason for this breach of emission level being the incomplete combustion of fuel supplied to the engine which is due to the improper maintenance of vehicles. This emission from vehicles cannot be completely avoided, but it definitely can be controlled. This work aims to project is to monitor the pollutants from the vehicle. This pollution monitoring system consists of various sensors like MQ-7 and MQ-135. Whenever the pollution level crosses the specific value, data is uploaded in the cloud. The vehicle details along with the location is sent to the pollution control board and to the owner.

Second part of the work is automatic indicator for the vehicle. Not turning ON the indicator in turns is one of the reasons for accidents. The voice recognition module recognizes the voice from the Google Maps and automatically turns ON the indicator.

WATER THEFT IDENTIFICATION AND CONTROL SYSTEM

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Abstract:

Water, one of the vital needs for any living being without which life is merely impossible. With the growth of human population and the revolutionary industrial needs, no amount of water seems to satisfy the want that arises. Management of water supply in this collective chain is a complex task. Use of current technologies to monitor this system can help optimizing the water supply paths and analyze the loss or theft of water due to improper care or illegal use. Automation of water supply to monitor and control the water distribution system can help reduce loss of water and to some extend help in covering for the irregularities in the pattern of water flow. Further automation of water can help test the water quality at more junctions at a more regular basis which can be a great benefactor for the citizens and help the corporation fight against the water borne diseases that spread due to poor water quality.

This project is to be as the part of the water supply automation system, to ensure that water theft is being monitored and the water flow is controlled when an intrusion occurs in the system. Here we make use of embedded technology to measure the amount of water flowing from main tank, the amount of water flowing through the individual supply, control the valve to stop the supply of water and an integrated platform that intimates the occurrence of illegal pumping of water to the personnel in-charge.

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Networks

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INVESTIGATION ON INTERNET OF THINGS

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Abstract:

Internet of things (IoT) is an interconnection between all things like objects, devices, sensors, actuators and human etc. Main goal of Internet of things is to combine together all the objects with internet and enables devices to collect the information and transfer through a network. This paper focused on overview of the internet of things with the importance of iot, applications challenges and future directions of internet of things.

A SURVEY ON SOFTWARE DEFINED WIRELESS SENSOR NETWORKS

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Abstract:

The expeditious growth of technological world, the habitual network operations and network users will increase at the speed of light. The integration of SDN architecture into wireless sensor network concepts is an indispensable for controlling the entire network, ensures the proper working order and network efficiency of sensor nodes. Software Defined Wireless Sensor Network (SDWSN) provides the propitious solutions to the traditional networks and also brings a new feature into the networking world. This paper highlights the some of the recent work on SDWSN. This paper also presents the open research challenges on security management, energy and topology management for effective SDN based WSN and SDN based Internet of Things (IoT).

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WIRELESS BODY SENSING NETWORK BASED ON CHAOTIC COMPRESSIVE SENSING

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Abstract:

A WSN system incorporates a gateway that provides wireless connectivity back to the wired world and distributed nodes. A wireless sensor network (WSN) is a wireless network consisting of spatially distributed autonomous devices using sensors to monitor physical conditions. In the current BANs, the Sensed information are transferred to the patient, then the patient forward that information to his/her family members and doctor, if patient feels abnormal condition. In existing scenarios, the sensed data are forward to the family members and doctors through patient. This will make challenging task to the patient, if they are in unconscious and too abnormal conditions. So the unconscious information are not properly forward to the family members and doctor. This will produce the negative impact to the patient, sometime it will leads to the death. In the chaotic compressive sensing techniques the BAN admin take the responsible for transferring the sensed data of the patient in abnormal situation. This approach also sends the location information about the patient by using GPS.

A SURVEY ON VARIOUS RECONFIGURABLE ARCHITECTURES FOR WIRELESS COMMUNICATION SYSTEMS

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Abstract :

Reconfigurable architecture plays a vital role in the development of communication system. In a recent study, it is estimated that 20 billion devices will be connected to the internet in the near future due to the development in IoT. The demand for higher data rates, computational complexity are also changing dynamically.one hardware for multiple functions is the only solution to the rapid development in wireless communication system. In this paper various reconfigurable methods are discussed.

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eGRUB ORDERING SYSTEM

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Abstract:

Automation plays a very important role in every field of human life. This paper contains the proposal of a fully automated menu ordering system in which the paper based menu is replaced by a user friendly Touch screen based menu card. The system has Raspberry pi which is interfaced with the input and output modules. The input module is the touch screen sensor which is placed on GLCD (Graphical Liquid Crystal Display) to have a graphic image display, which takes the input from the user and provides the same information to the Raspberry pi. The output module is a Zigbee module which is used for communication between system at the table and system for receiving section. At the receiving end the selected items will be displayed on the LCD and by using the conveyor belt the received order will send to the particular table.

ROUTING PROTOCOL FOR LOAD BALANCING IN A FAULT TOLERANT NETWORK USING REWARD-BASED SYSTEM

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Abstract:

The Congestion in the network plays a vital role in defining the Quality of Service offered by the network. It is always desirable to reduce the overloading conditions as much as possible. This paper thus proposes the Supervised Reinforcement Learning (SRL) algorithm for balancing the overload conditions in the network by using reward based system. In this system, the rewards are allocated to the links by a reward-assigning agent. The agent collects the traffic load information from the network and assigns reward to each link based on distance (between the current packet processing node and destination node) and the load on the links. The agent algorithm runs on a dedicated router, which is a part of the network, and it works on the currently implemented routing protocol which updates the link weights based on the rewards assigned periodically and on overloading. The epsilon greedy algorithm is chosen as the action selection strategy for implementing the agent. The design and simulation of the agent algorithm is done in the Network Simulator v.2 and the results show that the agent implementation improves the performance of the network. The improvements in the network metrics are 94% reduction in packet loss, 71% reduction in delay, 15% increase in throughput and reduction in jitter.

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VIRTUAL TRAFFIC SIGNALS USING AD-HOC WIRELESS NETWORKS

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Abstract:

A traffic signal at an intersection avoids collisions among vehicles whose lines of flow have a point of intersection. Though it provides a safe driving environment, it requires high configuration and maintenance cost and overhead. In order for their avoidance and/or reduction, this paper proposes a novel method for virtual traffic signals realized by cooperation among vehicle-mounted mobile wireless computers. Here, the red signal information is initiated based on mobility information, i.e., velocity, acceleration and location, of vehicles approaching an intersection. These vehiclemounted computers cooperate by Ad Hoc IVC (InterVehicle Communication) for initiation, distribution and update of the red signal information. This paper shows a required wireless transmission range of the vehiclemounted computers and an ad-hoc wireless communication protocol among them for the virtual traffic signals.

TIC TAC TOE GAME APPLICATION DEVELOPMENT USING AMAZON WEB SERVICES

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Abstract:

The project aims to create a game application, commonly known as Tic Tac Toe using AWS X-Ray SDK provided by Amazon Web Services. The SDK is used to manage the incoming HTTP calls from HTTP clients and DynamoDB. The Amazon Elastic Beanstalk is used to create DynamoDB tables. The implementation is done using Java and compiled on an instance which has access to the features mentioned. The X-Ray daemon is run without any additional configuration. Further the health reports can be optionally preferred to be sent via E-mail.

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SMART DUMPSTER- A PROPOSED SMART SOLUTION TO SMART CITIES

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Abstract:

One of the major problem in India is Waste Management. But the solutions to this problem are of course very limited. Smart Dumpster-as its name, is a proposed smart solution to waste management. It incorporates various sensors to identify and monitor trash. Not only smart cities can incorporate this but also rural areas can. The operation of the Smart Dumpster is made easy by incorporating several sensors and motors that are pre-programmed. The Smart Dumpster performs the operation of separating the biodegradable and non-biodegradable waste at the preliminary level using IR and Methane gas sensors. Accordingly the lid corresponding to above mentioned type of wastes is opened using servo motors. Once the trash fills up and reaches a certain level the UV sensor senses it and sends a message via GPM/GSM module to the necessary person along with the location of the dumpster. With this dumpster the waste can not only be properly managed but also can be emptied when necessary conserving fuel for the vehicles used to transport waste.

ZIGBEE PROTOCOL BASED WSN FOR ENVIRONMENTAL MONITORING USING TELOSB MOTES

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Abstract:

Wireless Sensor Networks (WSN) have shown a paradigm shift towards IoT (Internet of Things) research and industrial applications involving. As part of the Internet of Things (IoT), WSN has shown a noteworthy contribution to various applications such as remote control, wireless surveillance and monitoring of environmental conditions. A sensor mote is an autonomous embedded device with very limited power, memory, and bandwidth capable of sensing, processing and transmitting environmental data to the remote observer. In this paper, as a part of Smart city development a Wireless Environmental Monitoring System using cluster tree architecture has been developed to monitor the environmental conditions such as amount of pollution in the air, humidity, temperature in real-time. The useful information available can be processed to have valuable solutions for the environment and also the WSN network link quality between the sensor nodes has been analyzed. Real time environmental data from sensor nodes can be visualized through a website using a standardized Zigbee communication protocol.

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IMPLEMENTATION OF ACO ALGORITHM IN RWA

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Abstract:

The major problem in the optical mesh network is routing and wavelength assignment (RWA) and this trouble arises due to more number of tracks present in the network. When huge networks are used for transmission of information from source to destination, there will be a need for wavelength assignment to the track in that network. Solution for Routing and wavelength assignment problem has been done using various optimization algorithms such as Genetic Algorithm, Simulated Annealing, Particle Swarming Optimization, Memetic Algorithms, etc. It is found that the mean execution time and mean blocking probability are more while using these algorithms in the optical mesh networks. Here the RWA problem is solved using Ant Colony Optimization Algorithm and it noticed that it is better than the other optimization algorithms. The standard mesh network NSFNET network (14node) is considered for the simulation. The performance metrics such as mean execution time and mean blocking probability using first-fit & random wavelength assignment techniques are considered. The results obtained for mean execution time is lesser compared to the other optimization algorithms and mean blocking probability using first-fit and random wavelength assignment techniques are compared to each other.

DUPLICATE DETECTION AND COMPLETENESS APPROACH FOR END USERS' DATA QUALITY IMPROVEMENT IN DATA FEDERATION

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Abstract:

In the field of data integration, methods available to improve the quality of the end users' data are best quality data sources, best query plan and quality metadata of data sources. Predicting the quality of end users' data set before data integration is a complex task. To mitigate the above issue, Duplication Detection and Incompleteness Resolution (DDIR)approach has been proposed to improve the quality of the end users' data. Record Linkage and Weighted Component Similarity Summing (WCSS) approach are used to detect and remove the duplicate records. The incompleteness is detected and resolved using source completeness, tuple completeness and attributes completeness. An experiment is conducted by using data from E-shopping for computer peripherals application to justify the improvement in precision of data integration. Experimental results illustrate that the precision of duplication detection and resolution has been improved by 24% than the Record Linkage approach. In comparison with existing methods, the proposed approach has improved the precision of the data integration.

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