IMPULSE

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Smart Electronics for a More Sustainable World

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II Year, ECE

The global consumption of energy has been increasing rapidly over the past century. The dependence on energy resources, primarily fossil fuels may increase by almost 44% between 2006-2030[1].The growth of population worldwide has led to an unprecedented demand for electricity. Usage of the olden-day and conventional technology for industrial purposes has led to wastage of a significant amount of useful power generated. Apart from the possibility of facing a power scarcity, another looming threat due to the existing quality of technology is the degradation of the environment. This involves the emission of various gaseous pollutants leading to the manmade greenhouse effect, the prominent contributors being the automotive industry, power generation and distribution industries etc. which consume fossil fuels. The role of electronics to tackle this issue is extremely crucial. The main aim of this field of power electronics is to improvise existing technology and assist in increasing the energy efficiency of the existing systems. There are various problems to be addressed in connection with this as it has become almost impossible to reduce the demand.

Taking up the case of industrial greenhouse emissions, two of the probable approaches to try and combat the issue are described. The first idea is to try and avoid conventional energy sources like thermal energy as much as possible. The usage of alternative energy resources like wind energy, solar energy and hybrid power systems accomplishes this. In the generation of electricity using wind power, the main area of focus is on the type of turbine used. Either the fixed speed turbine or the variable speed turbine may be employed. The latter is an innovative idea wherein the speed of the turbine is adjusted for optimal power generation frequency based on the existing wind speed leading to better efficiency [2]. Here, electronic circuitry that includes equipment like 'DC-AC Inverter and power converters partially or completely dissociates the frequency of the turbine from the grid frequency, thereby adjusting the frequency to the optimal point'[1].

Contents

Considering solar power generation, the system is basically an array or a panel of photovoltaic cells that generate energy from the impinging solar energy. The existing type of solar cells are 'crystalline or polycrystalline cells (efficiency ~11%), thin film amorphous silicon cells (~10%) and thin cell cadmium telluride cells(~9%)'. The basic role of power electronic components in this scenario is to interface the system to the load using converters and also to interface two solar panels.[1] The tilting of solar cell panels to make sure that the incoming sun rays are exactly perpendicular to the panel using appropriately designed trackers is yet another strategy[3].

The other way of combating this issue is to improvise the current technology in terms of efficiency and thereby move closer to the ideology of sustainability. This can be implemented in the transmission and distribution of the generated power. The various types of converters like line-modulated converters, pulse-width modulated converters and Static VAR compensators have been continually improved using recent technology like the IGBTs and MOS-controlled thyristors.[4[These components represent a combination of the best characteristics of the pre-existing BJT and the GTO in terms of power consumption, switching frequencies etc.

A closer look at the automobile industry reveals that it is not only a giant contributor of greenhouse gases but also has a lot of scope to upgrade the existing technology towards sustainability. It is a well known fact that the industry uses various types of motors in power train, comfort and safety etc. The initial stages of evolution have led to the replacement of the DC motor usage by the induction motor. Offering numerous advantages like higher efficiency, cost reduction and simplicity in terms of design as well, the induction motor is well suited for open-loop control applications. The development of control theory, various processors like the DSP etc. has also catered to the need of the 'complex control measures in the case of variable-speed operation' [5]. The usage of vector-controlled drives in the speed-control using the field-oriented control generates the reference current based on the reference torque. This controller is operated by controlling the field and armature currents in case of the DC motor and using the Digital Signal Processor in case of AC motors [6].

The need for power saving and improving sustainability is now increasing throughout the country, not only for automobiles but also for household appliances. The introduction of star-ratings for the ACs and refrigerators has improved the level of understanding among consumers about the entire concept of using smarter technology to save power. The cost of using the appliance is now weighed equally compared to the cost of owning the appliance [7].

Of course, from the manufacturing point of view, it is extremely difficult to replace the existing technology with greener alternatives overnight especially considering the fact that many of these proposed alternatives are still in the nascent stages of development. An optimal and practically realizable concept is the implementation of hybrid systems. As this ideology will combine both the existing as well as the future technologies, it may involve lesser risk as well. If we take a look at our own country, according to a report in the Times of India (10 Jul '13)[8], trials were to be conducted on hybrid two-wheelers as well as public buses to ensure alternate energy usage.

From the above, it can be inferred that the development of energy-efficient technology has become the need of the hour and this is impossible to accomplish without using smarter electronic design. Of course, reducing consumption would be a better idea overall and these techniques are only secondary to it. However, that would be an even more difficult aim to accomplish keeping in mind the fast-paced development in today's world. In this scenario, it is our responsibility as engineers to think innovatively and adapt our existing systems to bridge the gap between sustainability and development.

References:

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3. http://www.livingonsolar.com/solar-tracking.htm
4. www.en.wikipedia.com/wiki/Power_electronics.html
5. 'Energy Efficient Control of Three-Phase Induction Motor - A Review' by C. Thanga Raj, S. P. Srivastava, and Pramod Agarwal, International Journal of Computer and Electrical Engineering, Vol. 1, No. 1, April 2009
6. Iitd.vlab.co.in/?sub=67&brch=1865&sim=1046&cnt=1
7. www.bijlibachao.com/general-tips/beestar-rating-program-explained.html
8. timesofindia.indiatimes.com/business/Govt-mulls-hybrid-vehicles-for-public-transport/articleshow/20997077.com

FACULTY NEWS

RESEARCH NEWS

PROPOSALS SUBMITTED:

1. Dr. B. S. Sreeja, Dr. S. Radha and Ms. Angayarkanni,"MEMS based Vibration Energy Harvester using hybrid transduction," Aerospace Network Research Consortium (ANRC), 31st Jan. 2014

2. Mr. S. Ramprabhu, Ms. S. Esther Florence, and Mr. M. Gulam Nabi Alsath,"A 2.4 GHz RF Energy Harvester using Rectenna" Aerospace Network Research Consortium (ANRC), 31st Jan. 2014

3. Ms. V. Keerthika, Mr. S. Sakthivel Murugan, and Dr. V. Rajendran,"Energy Harvesting using Piezoelectric Actuators from ambient vibration noise in aircraft" Aerospace Network Research Consortium (ANRC), 31st Jan. 2014.

4. Ms. Ann Agnetta Chandru, Mr. S. Sakthivel Murugan and Dr. V. Rajendran "Energy storage device from vibration noise of aircraft using a micro piezoelectric laminated cantilever device" Aerospace Network Research Consortium (ANRC), 31st Jan. 2014.

5. Mr. S. Sakthivel Murugan, "Development of wind speed frequency distribution algorithm and its implementation of sophisticated multi-channel graphical representation systems with 3 DGIS maps support," Center for Wind Energy & Technology (CWET), Chennai, 19th Mar. 2014.

6. Dr. S. Radha, and Ms. Angayarkanni (JRF), "Compressed Sensing enabled Video encoders for Patient Monitoring Using Wireless Sensor Networks," DST under WOSA scheme, Jun. 2014.

CONSULTANCY:

1. Dr. S. Radha and Mr. Gulam Nabi Alsath carried out a consultancy work in the area of RF antenna measurements to research scholars of Bannari Amman Institute of Technology, and generated revenue of Rs.12500/- on 15th Apr. 2014.

2. Dr. S. Radha, Mr. M. Gulam Nabi Alsath, and Mr. S. Ramprabhu, generated a revenue of Rs. 10000/- by extending antenna measurement consultancy work to a team of Post Graduate students from Sri Venkateshwara College of Engineering and Sri Krishna College of Engineering.

VISITS AND INTERACTIONS:

1. Dr. S. Radha, Dr. R. Amutha, Dr. R. Jayaparvathy, and Dr. N. Venkateswaran, visited Caterpillar, Chennai to explore the possibilities of students projects and Internships at caterpillar on 06th May 2014.

2. Dr. S. Radha, Dr. A. Jawahar, Dr. R. Kishore, Ms. R. Hemalatha, and Ms. Asha Nandini (JRF) visited Wireless Sensor Networks Lab at IGCAR and had a discussion to validate their research work, explore and strengthen the possibilities of research collaboration on 24th Jan. 2014.

3. Dr. S. Radha, gave a presentation about the department to a team of people from Caterpillar and TCS and interacted with them towards sponsorship for student internship, projects and placement on 27th Jan. 2014.

4. Dr. S. Radha, Dr. A. Jawahar, Dr. N. Venkateswaran, and Dr. R. Kishore, visited the labs at CVRDE, Avadi and had a discussion with scientists to explore the possibilities of research collaboration on 6th Feb 2014.

5. Tata Consultancy Service (TCS) technical team visited our campus and interacted with III year UG students and I year PG students and present a seminar on "Global Engineering Services" by TCS on 18th Mar. 2014.

6. Dr. R. Chandramouli, Thomas E. Hattrick Chair Professor of Information systems, Dept. of ECE, Stevens Institute of Technology, NJ delivered a guest lecture on "Dynamic Spectrum Access Wireless Networking" on 19th Mar. 2014.

7. Dr. Devendra Jalihal, Professor, Electrical Engineering Department, IIT Madras delivered a guest lecture on "Current and emerging technologies for research in Wireless communication" on 20th Mar. 2014.

8. Dr. S. Radha, made a presentation to Harris Corporation on "Research Focus on RF & Wireless Communications" on 24th Mar. 2014.

9. Dr. Radhakrishna Ganti, Associate Professor, Electrical Engineering Department, IIT Madras delivered a guest lecture on "Current and emerging technologies for research in Wireless Networking" on 27th Mar. 2014.

Technical Talks

By Faculty at Other Institutions:

1. Dr. N. Venkateswaran, "Sparse Theory", National workshop on Recent trends and research issues in Image Processing, Saveetha Engineering College, Chennai, 27th Jan. 2014.

2. Dr. N. Venkateswaran, "Introduction to Sparse representation", Department of ECE, Pondicherry Engineering College, Pondicherry, 28th Jan. 2014.

3. Dr. Premanand Chandramani, "Mixed Signal Design? Where can one really fit in?" VIT, Chennai campus, 14th Feb. 2014.

4. Dr. K. T. Selvan, "Antenna considerations: design and realization" and "Perspectives on research and scholarship", RMK College of Engineering and Technology, Chennai 15th Feb. 2014.

5. Mr.S.Sakthivel Murugan, "Digital Communication", Mahendra Engineering College, Salem, 27th Feb. 2014.

6. Dr. Premanand Chandramani, was invited to chair a session in the 2nd International Conference on Power, Control and Embedded systems (ICPCES 2014) at Anna University, Chennai on 27th Feb. 2014.

7. Dr. K. T. Selvan, "Fundamentals of Electromagnetic Units and Constants" in the "Workshop on Electromagnetic Applications", Hindustan University, Chennai, 28th Feb. 2014.

8. Dr. S. Radha, "SSN strengths and achievements", ANRC Day conference, ANRC Consortium, IISC, Bangalore, 5th – 6th Mar. 2014.

9. Ms. M. Anbuselvi, "Embedded systems", Velammal Engineering College, 7th Mar. 2014.

10. Dr. K. T. Selvan, inaugurated a technical conference organized by VIT Chennai's IEEE Student Branch, 16th Mar. 2014.

11. Dr. S. Radha, chaired the session at National Conference on Recent Trends in Power, Control, Networking, Embedded and Communication Engineering, Karpaga Vinayaga College of Engineering and Technology, Madhuranthagam, 27th Mar. 2014.

12. Dr. Premanand V Chandramani, "Smart grid and its challenges", 1st National conference on "Recent trends in Power and Energy Engineering (RTPEE-2014)", Dept. of EEE, SSN College of Engineering, 10th Apr. 2014.

13. Mr. M. Gulam Nabi Alsath, "Microwave Transistor Oscillators", CEG, Anna University, 16th Apr. 2014.

14. Dr. K. T. Selvan, "Potential functions in electromagnetics", India Antenna Week, Chandigarh, 26th May 2014.

By External Experts at Department of ECE:

1. Prof. Tapan K. Sarkar, Syracuse University, and President, IEEE Antennas and Propagation Society, "Why study electromagnetics?," 2nd Jan. 2014.

2. Mr. Sanjay Baishakiya, Scientist and Head, EMIC Division, SAMEER, Chennai, "Introduction to Electromagnetic Compatibility," 7th Apr. 2014

Conferences, Workshops & Short Term Courses Organized

Symposium on Electromagnetics and Engineering Education
3rd Jan. 2014

Organized by: IEEE AP-S Madras Chapter
Coordinators : Dr. K. T. Selvan and Prof. H. Ramachandran (IITM)
Attendance : Attended by 47 participants, comprising faculty from Engineering institutions and engineers from industry
Sponsors : Centre for Continuing Education, IIT Madras, IEEE AP-S Madras Chapter & SSN College of Engineering.

Two days Workshop on Next Generation Wireless Technologies
21st and 22nd Feb. 2014

Coordinators : Dr. R. Jayaparvathy, Dr. R. Amutha, and Ms. S. Karthika
Attendance : 79 Participants including faculty and students from various Engineering colleges
Speakers : Dr. S. Srikanth Scientist, AU – KBC Research Centre MIT Campus, Anna University, Dr. Sesha Sayee, CeWIT, IITM, Chennai, Mr. Sricharan, Wipro technologies, Chennai, Mr. Anandkumar, Nihon Communication Solutions, Bangalore

Workshop on Computational Electromagnetics and Antennas
5th Mar. 2014

Organized by: IEEE AP-S Madras Chapter
Coordinators: Dr. K. T. Selvan and Dr. Abhai Kumar (TCE Madurai)
Attendance : 78 participants from engineering colleges and industry
Sponsor : IEEE AP-S Madras Chapter and TCE, Madurai

Two Days National Workshop on System Design Using TI MSP430 MCU

21st & 22nd Mar. 2014

Coordinators : Dr. R. Rajavel and Mr. S. Joseph Gladwin
Attendance : 40 Participants including faculty and students from various Engineering colleges and SSN College of Engineering.
Sponsor : Texas Instruments, Cranes Software International Ltd.
Speakers : Mr. Narendra Babu, Cranes Software International Ltd.

Two Days Workshop on Embedded Systems & Industrial Applications

4th & 5th Apr. 2014

Coordinators : Dr. Premanand Chandramani and Mr. V. Vaithianathan
Attendance : 96 Participants including faculty and students from varius Engineering colleges and SSN College of Engineering.
Sponsor : SSN College of Engineeringr
Speakers : Mr. Karunaduari, Software Engineer (Design), EATON, Cooper Industries, MTL

Second National Conference on Information & Communication Technologies (NCICT2K14)

18th Apr. 2014

The Second National Conference on Information & Communication Technology (NCICT2K14) was organized by the Department of ECE on 18th Apr 2014. The Call for papers was made during Dec 2013 through brochure and online announcement. Out of 400 papers received in response to the call, 40 papers were accepted subsequent to technical review. Twenty papers were actually presented during the Conference.

Keynote talks during the Conference:

- Dr. Surendra Pal, President, The Institution of Electronics and Telecommunication Engineers, "Perspectives in Communication".
- Mr. Anand Sampathraman, Head, Plant & Enterprise Sustainability Solutions, TCS, Chennai, "Future of ICT enabled solutions".

Professional Roles and Recognitions

Dr. S. Radha
Professor & Head

Dr. S. Radha, was invited by DST, India, to review the research project proposal on "Automatic Detection of Driver Drowsiness and Health Monitoring Using Sensors".

Mr. S. Joseph Gladwin
Assistant Professor

Mr. S. Joseph Gladwin, was elected as Secretary cum Treasurer for IEEE APS Madras Chapter for the year 2014 and also received Certificate of Appreciation

Mr. S. Karthie @ Ayyadurai
Assistant Professor

Mr. S. Karthie received Certificate of Appreciation (2013) for contributions to IEEE - APS Madras Chapter.

Dr. B. S. Sreeja
Associate Professor

Dr. B. S. Sreeja is recognized as a Supervisor by Anna University for Ph.D/MS (By Research) programme.

INTERNATIONAL AND NATIONAL CONFERENCES PRESENTATIONS

FACULTY OVERSEAS PRESENTATIONS:

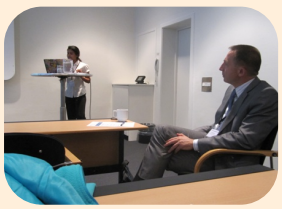
K. Muthumeenakshi, and S. Radha, "A Refined Energy Detection Algorithm for Spectrum Sensing in Cognitive Radios," International conference on Next Generation Computing and Communication Technologies 2014, Dubai, U.A.E, 23rd – 24th Apr. 2014. ***The presenter received the best presentation award.***

S. Radha, R. Hemalatha, and S. Sudharsan, "Energy Analysis for Multi-hop Image Transmission in WMSN Using Compressed Sensing," International Conference on Next Generation Computing and Communication Technologies 2014, Dubai, UAE, 23rd – 24th Apr. 2014.

S. Sakthivel Murugan, "Analysis on Extraction of Modulated signals using Adaptive filtering algorithms against ambient noises in Underwater Communication," 6th International Conference on Communication Software and Networks (ICCSN 2014), 24th – 26th May 2014, Nanyang Technological University (NTU), Singapore. ***The presenter received the best oral presentation award and best paper award.***

Prabagarane Nagaradjane, Bhanusri Sridharan, and Ananya Ravi, "Performance of Downlink MC-CDMA System Aided by Relays and Transmitter Preprocessing," 21st IEEE International Conference on Telecommunications, Lisbon, Portugal, 4th – 7th May 2014.

Prabagarane Nagaradjane, Ananya Ravi, Bhanusri Sridharan, "Performance of Relay-Aided Downlink MC-CDMA System Using Transmitter Preprocessing," IEEE International conference on WIRELESS VITAE, Aalborg, Denmark, 11th – 14th May 2014.



Faculty Domestic Presentations:

Nandita Lavanis and D. Jalihal, "Finite-SNR DMT for a Non-orthogonal Decode and Forward Relay Protocol", IEEE CONECCT, Bangalore, India, 6th – 7th Jan. 2014.

S. Sakthivel Murugan, L. Suvasini, S. Prethivika, and V. Natarajan , "Extraction of Binary Sequences in a frequency shift keying modulated signal by empirical mode decomposition algorithm against ambient noises in underwater acoustic channel," Springer International Conference on Artificial Intelligence and Evolutionary Algorithms in Engineering Systems 2014 (ICAEES 2014) 22nd – 23rd Apr. 2014, Noorum Islam University, Kumarakoil. ***The paper received the best paper award.***

S. Sakthivel Murugan, S. Suvasini and S. Prethivika, "Extraction of frequency shift keying modulated signal by empirical mode decomposition algorithm against ambient noises in underwater acoustic channel," National Conference INCHOE'14, National Institute of Oceanography, Goa, 5th – 7th Feb. 2014.

Journal/Magazine Articles

1. B. S. Sreeja, "Low-Power CMOS LC QVCO Using Zero biased Transistor Coupling of MWCNT Network-based VCO Structure," Microelectronics Journal (accepted).

2. B. S. Sreeja, Sheeba Devaraj, Suhaila Shahul, Soumya Swaminathan, "A Low Cost Carbon Nano Fiber Based Spiral Inductor-Inference and Implementation," Advances in Material Science and Engineering (accepted).

3. N. Edna Elizabeth, S. Radha, and S. Subasree, "Enhanced Security Key Management Scheme for MANET's", WSEAS Transactions on Communications, Vol. 13, pp. 15-25, 2014.

4. K. Muthumeenakshi, and S. Radha, "Improved Sensing Accuracy with Enhanced Energy Detection Algorithm with Secondary User Cooperation in Cognitive Radios," International Journal of Communication Networks and Information Security, Vol.6, No.1, pp.17-28, 2014.

5. Victoria Jancee and S. Radha, "Online detection of change on information streams in Wireless sensor network modeled using Gaussian distribution", International Journal of Modelling and Simulation in Engineering, Volume 2014, Article ID 658302, pp. 1-8.

6. Muthumeenakshi. K. and S. Radha, "A Generalized Markovian Based Framework for Dynamic Spectrum Access in Cognitive Radios", KSII Transactions on Internet and Information Systems, Vol. 8, No. 5, May 2014, pp.1532 – 1553.

7. M. Gulam Nabi Alsath and Malathi Kanagasabai, "Planar Penta-Band Antenna for Vehicular Communication Applications," IEEE Antennas and Wireless propagation Letters, Vol. 13, pp. 110 – 113, 2014.

8. S. Esther Florence, Malathi Kanagasabai, et. al., "Polygon Shaped Slotted Dual Band Antenna for Wearable Applications," IEEE Antennas and Wireless propagation Letters, Vol. 13, pp. 611 – 614, 2014.

9. S. Sakthivel Murugan, V. Natarajan, S. Prethivika, "Hardware Implementation of Kalman Least Mean Square-Based Adaptive Algorithm for Denoising Ambient Noises in Shallow Water Region", Fluctuation and Noise Letters, Vol. 13 (3), 2014.

Faculty Expert Lectures in FDP

Our Faculty members gave expert lecture in the Anna University Sponsored Faculty Development Programme conducted by the Department of EEE, SSN College on Engineering between 18th June and 25th Jun. 2014

1. Mrs. K. Muthumeenakshi, “Continuous and Discrete Energy and Power of Signals”
2. Mr. C. Vinoth Kumar, “Representation on Signals, Sampling and Quantization”
3. Dr. P. Vijayalakshmi, “FIR design and Linear Phase Characteristics Analysis” and “Windowing - Need and Choice of Windows in FIR filters design”
4. Dr. N. Venkateswaran, “IIR Filter Design”
5. Dr. R. Rajavel, “Commercial DSP Processors”, “DSP Interfacing and Real-Time Application”, “Architecture and special features of DSP Processors” and “Special addressing modes of DSP Processors”

Workshop & Short Term Courses - Attended

1. Ms. S. Kirubaveni, "INUP Familiarization Workshop," IISc Bangalore, 21st - 23rd May 2014
2. Dr. P. Vijayalakshmi and Ms. B. Ramani, "Text-to-Speech (TTS) Synthesis," Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar, 16th - 18th Jun. 2014
3. Dr. L. Nandita Lavanis, "JTG Summer School," IIT Madras, 16th - 19th Jun. 2014

STUDENTS' CORNER

Conference Presentations

1. S. Sahana, and R. Amutha, “Data Aggregation in Wireless Sensor Networks,” International Conference on Information Communication & Embedded Systems (ICICES 2014), S. A Engineering College Chennai, 27th - 28th Feb. 2014.

2. S. Alagurani, S. Aasha Nandhini, and S. Radha, “Video Compressed Sensing Framework for Wireless Multimedia Sensor Networks,” National Conference on Advances in Information and Communication Technology (AICT 2014), Sri Venkateswara College of Engineering, Chennai, 27th - 28th Feb. 2014.

3. S. Sangeethapriya, and R. Amutha, “Reliable Data Transmission in Wireless Sensor Networks,” International Conference on Information Communication & Embedded Systems (ICICES 2014), S.A Engineering College Chennai, 27th - 28th Feb. 2014.

4. K. Karthick, and R. Amutha, “Minimum Energy Consuming Route in a Wireless Sensor Networks,” International Conference on Futuristic Trends in Computer Science Engineering & Information Technology - ICFTCS 2014, Thiruvalluvar College of Engineering and Technology, Chennai, 1st – 2nd Mar. 2014.

5. G. Sathya Moorthy, and Suresh R. Norman, “Embedded Forest Fire Detection System using Wireless Sensor Network,” International Conference on Futuristic Trends in Electronics Engineering, Thiruvalluvar College of Engineering and Technology, Chennai, 1st – 2nd Mar. 2014.

6. X. Cibi Savio, S. Hanis, “Earlier Detection of Diabetic Retinopathy using Crest Region Analysis,” International conference on Recent Innovations in Science, Engineering and Technology, pp.7-12, 2014.

7. T. Ramya, S. Lilly Christina, P. Vijayalakshmi and T. Nagarajan, "Analysis on MAP and MLLR based speaker adaptation techniques in speech recognition," International Conference on Circuit, Power and Computing Technologies (ICCPCT'14), Noorul Islam University, Kumarakoil, 20th – 21st Mar. 2014. ***The presenter won the "Best paper Award"***

8. S. Sreenidhi, G. Anushiya Rachel, P. Vijayalakshmi, and T. Nagarajan, "LP and TD-PSOLA based incorporation of happiness in neutral speech using time-domain parameters," International Conference on Circuit, Power and Computing Technologies (ICCPCT'14), Noorul Islam University, Kumarakoil, 20th – 21st Mar. 2014.

9. M. Reshma, Shiwani Hariraman, P. Swathi, S. Aasha Nandhini, and S. Radha, "Video Compressed Sensing using CoSaMP Recovery Algorithm" National Conference on Emerging Technologies in Software Engineering – 2014, SRM University Chennai, 25th – 26th Mar. 2014.

10. S. Alagurani, S. Aasha Nandhini, and S. Radha, "Energy Analysis of Compressed Sensing in Wireless Multimedia Sensor Network," National Conference on Emerging Technologies in Software Engineering – 2014, SRM University Chennai, 25th – 26th Mar. 2014.

11. Achuthan Ekambaram, and Kishore Rajendiran, "A Novel Anti Jamming Technique for Wireless Sensor Networks," IEEE International Conference on Communication and Signal Processing - ICCSP 2014, Adhiparasakthi Engineering College, Melmaruvathur, 3rd – 5th Apr. 2014.

12. V. Vaithianathan, M. Shalini, J. Raja, and R. Srinivasan, "Design and Simulation of Pulse Generator for Ultra Wide Band Impulse Radio," IEEE International Conference on Communication and Signal Processing (ICCSP2014), Adhiparasakthi Engineering College, Melmaruvathur, 3rd – 5th Apr. 2014.

13. K. Srinandhini, V. Vaithianathan, "FPGA implementation of MIMO-OFDM Transceiver," IEEE International Conference on Communication and Signal Processing (ICCSP2014), Adhiparasakthi Engineering College, Melmaruvathur, 3rd – 5th Apr. 2014.

14. C. Vinoth Kumar, V. Natarajan and S. Santhosh Muraledharan, "Difference Expansion based Reversible Data Hiding for Medical Images," International Conference on Communication and Signal Processing, (ICCSP2014), Adhiparasakthi Engineering College, Melmaruvathur, 3rd – 5th Apr. 2014.

15. C. Vinoth Kumar, V. Natarajan, Putta Harshitha, Rashmi Bachala and Yadati Lasya, "Reversible Watermarking based on Difference Expansion Prediction Techniques", National Conference on Computer Communication and Networking, Valliammai Engineering College, Chennai, 4th – 5th Apr. 2014.

16. J. Yokesh, "An Environmental Air Pollution Monitoring System using FPGA and Wireless Sensors," 3rd International Conference on Science and Innovative Engineering, Organization of Science and Innovative Engineering and Technology (OSIET), Chennai, 5th – 6th Apr. 2014.

17. R. Sudharsana, R. Tharini, K. Muthumeenakshi, and S. Radha, "Performance Improvement using Optimum Power Energy Detector under Noise Uncertain Environment in Cognitive Radio," Fourth International Conference on Recent Trends in Information Technology (ICRTIT 2014), Madras Institute of Technology, Anna University Chennai, 10th – 12th Apr. 2014.

18. P. Dhanalakshmi, S. Divya, S. A. Kamila, K. Muthumeenakshi, and S. Radha, "Modeling and Analysis of Cognitive Radio with Multiple Primary/Secondary Users and Imperfect Sensing," Fourth International Conference on Recent Trends in

Information Technology (ICRTIT 2014), Madras Institute of Technology, Anna University Chennai, 10th – 12th Apr. 2014.

19. G. Nandini Iyer, "Analysis of Acoustic Signals from Rotating Machines for Wear Detection" International Conference on Recent Trends in Information Technology ICRTIT 2014, MIT, Chennai, 10th – 12th Apr. 2014.

20. R. Varun Prakash and C. Vinoth Kumar, "Glaucoma Detection using PCA and K-Means Clustering," International Conference on Electrical, Communication and Computing (ICECC' 14), Tagore Engineering College, Chennai, 13th – 14th Apr. 2014.

21. G. Nandini Iyer, "Wear Detection in Rotating Machines by Analysis of Machine Acoustics," National Conference on Information and Communication Technology (NCICT2k14), SSN College of Engineering, Chennai, 18th Apr. 2014.

22. E. Sagul Hameed, and B. Ramani, "Comparison of GCI Estimation Techniques for GMM-based Cross-lingual Voice Conversion," International Conference on Emerging Trends in Science Engineering and Technology (ICETSET'14), Jerusalem College of Engineering, Chennai, 18th – 19th Apr. 2014. ***The presenter received the Best Paper Award***

23. R. Sudharsana, R. Tharini, K. Muthumeenakshi, and S. Radha, "Intelligent Decision Making with Improved Energy Detection for Precise Spectrum Sensing in Cognitive Radios," Springer International Conference of Artificial Intelligence and Evolutionary Algorithms in Engineering Systems 2014 (ICAEES 2014), Noorul Islam University, Kumarakoil, 23rd – 24th Apr. 2014.

24. S. Aasha Nandhini, M. Reshma, Shiwani Hariraman, P. Swathi and S. Radha, "Video Compressed Sensing Framework for WMSN using a Combination of Multiple Matrices," International conference on Next Generation Computing and Communication Technologies 2014, Park Regis Kris Kin Hotel, Dubai, U.A.E. 23rd – 24th Apr. 2014.

Congratulations!!!

R. Tamilppavai, M. Rajyalakshmi and J. Prathyusha won the First prize in the Student Conference JET- GAUGE conducted by St. Joseph's College of Engineering on 01st Mar. 2014.

JOURNAL PUBLICATIONS

1. G. Vinodhini, V. Vaithianathan, J. Raja and R. Srinivasan, "Reconfigurable LNA for MB-OFDM Receiver using Active Inductor," International Journal of Computer Applications (IJCA), Vol. 89, no. 18, pp. 22-28, 2014.

2. P. Keerthana, V. Vaithianathan, J. Raja and R. Srinivasan, "Analysis of Active Feedback and its Influence on UWB Low Noise Amplifier," International Journal of Computer Applications (IJCA), Vol. 89, No. 18, pp. 29-35, 2014.

3. S. Sahana, and R. Amutha, "Energy Efficiency in Wireless Sensor Networks using Data Aggregation," International Journal of Engineering Development and Research, IJEDRCP1403028, page 137-141, 2014.

4. S. Sangeethapriya, and R. Amutha, "Minimization of Energy Consumption using various mechanisms in WSN," International Journal of Engineering Development and Research, IJEDRCP1403010, pp. 47-52.

5. S. Sudharsan, R. Hemalatha, and S. Radha, "Energy Analysis for Image Transmission in WMSN using Compressed Sensing," Journal of emerging Technologies, Image Processing & Networking, Vol.8, Feb. 2014.

6. S. Sahana, and R. Amutha, "Centralized and Distributed Data Aggregation Schemes in Wireless Sensor Networks," Coimbatore Institute of Information Technology (CiiT) Journal- Acceptance Received

7. S. Sangeethapriya, and R. Amutha, "Energy-Efficient Data Transmission using Cooperative MIMO in Wireless Sensor Network," Coimbatore Institute of Information Technology (CiiT) Journal Acceptance Received

INTERNSHIPS & ACHIEVEMENTS

1. Vignesh Sridharan, III year ECE , M. Deepak, III year ECE , and T. N. Varshini, II year ECE are undertaking their IASc-INSA-NASI summer internship at IISc Bangalore, since Jun. 3, 2014.

2. S. Hariharan III year ECE, S. Induvadhani III year ECE, and S. Yogeshwaran III year ECE, got 6 weeks summer internship at TCS S2S lab, Siruseri.

3. Shruthi Penumatsa of III year ECE acquired an opportunity from IIT, Madras to work on a Satellite project and she is expected to submit her module to the Research group by Jul. 2014.

4. Priyanka Ganesh, III year ECE, Signal and Telecommunication Unit, Southern Railways.

5. Mila Kankanala, III year ECE, Intergraph, Hyderabad

6. Pallavi R, IV year ECE, LUCAS-TVS, Padi, Chennai, 11th - 27th Jun. 2014

7. Shashank Murthy, III year ECE, IITM Summer Internship at Electrical Engineering Department, May - Aug. 2014

Congratulations!!!

A. Selvaganapathi, III year ECEB represented our College in IIT Bombay-Techfest Reformation event held during 03rd – 05th Jan. 2014 and won cash prize of Rs, 9000/-.

Ms. R. Tamilppavai and Ms. M. Rajyalakshmi of final year ECE won the First place in the event Green ideas, as part of ENERGEIA'14 organized by CEESAT Centre for Energy and Environmental Science and Technology held at NIT, Tiruchirappalli, during 25th -26th Mar. 2014.

R. Tamil Pavai, J. Pratyusha and M. Rajyalakshmi of ECE final year students, under the guidance of Suresh R. Norman, presented their B. E project titled, "Automated Window and Window Blinder control using Microcontroller", Techknow-2014 at Alumni Hall, CEG, Anna University. Their project got selected for project presentation out of 4000 project entries and they received the SECOND PRIZE. The Award carries prize money of Rs. 7,000/-and a shield

I - Cell Activity

1. Alagu Sanjana, Bhanusri and Ananya Ravi, III year ECE-A gave a talk on "Detection of water pollution through image analysis of algal species," 09th Jan. 2014. Twenty students attended the talk.

2. Nandha Kishore, IV year ECE gave a talk on "Quantum Computing & Optics," 16th Jan. 2014. Ten students attended the talk.

3. R. Shanmugam and S. Ragavendran of IV year ECE gave a talk on "GRE Guidance," 21st Jan. 2014. Fifty students attended the talk.

4. G. Lakshmi Soujanya, IV ECE gave a talk on "Image Enhancement," 06th Feb. 2014. Forty students attended the talk.

5. G. Lakshmi Soujanya, IV ECE gave a talk on "Edge Detection" as part of I-cell activity on 14th Feb. 2014. Thirty students attended the talk.

Project Exhibition

Ms. R. Tamilppavai, Ms. M. Rajyalakshmi and Ms. J. Prathyusha of final year ECE participated in the Symposium and Project Display conducted by IT department, MIT Chennai during 15th – 16th Mar. 2014.

A project exhibition of all final year ECE projects was organized in the Department of ECE on 04th Apr 2014. The projects were exhibited through posters and demonstrations. Mr. Siddartha Saikia and Mr. Rajesh, Senior Engineers, Caterpillar India Pvt. Ltd, Chennai acted as the judges for the event. The following are the prize winners.

First Prize (Rs. 3000/-):
Title: Autonomous Navigation of a Penta-copter
Students: Mr. L. V. Renganathan, Mr. V. Vamsavardhana, Mr. S. Vinod, Mr. G. Nithin Krishna
Guided by: Dr. Prita Nair, Asso. Prof/Physics, Dr. Babu, AP/Mechanical and Mr. S. Karthie, AP/ECE

Second Prize (Rs. 2000/-):
Title: Detection of Retinal Exudates in Fundus Images
Students: Ms. A. V. Anusha, Ms. G. Lakshmi Soujanya and Ms. G. Sanjuna
Guided by: Dr. N. Padmapriya, AP/Maths.

Third Prize (Rs. 1000/-):
Title: Image Security on a Wireless Sensor Node
Students: Mr. S. Arvindhan, Mr. M. G. Karthik, Mr. Niranjan Swaminathan
Guided by: Dr. R. Amutha, Prof/ECE

Sports Achievement

1. Ramya Tulasi (I yr Civil), **Gohula Lakshmi (II Yr ECE)**, M. Saitanuj (II Yr Mech.), Harish (I Yr IT) and Mithlesh (II yr Chemical) have been represented the National senior Badminton ranking tournament held at Bangalore during 3rd – 6th Feb. 2014.

2. Jaswanth (II Year Civil), **Bharathi (III Year ECE)** and Nitin (IV Year CSE) have participated in the National chess championship held at Kanpur during 12nd – 22nd Feb. 2014.

3. I.Gokulalakshmi (III year ECE) is participating in the International Badminton coaching camp held at Malaysia organized by New Vision Badminton Academy, Kulalampur, during 12th Jun. to 09th Jul. 2014

Students' Service to Community

Ms. P. Kaythry, AP/ECE and **Mr. W. Jino Hans**, AP/ECE, organized the seven days Annual special camp at Echengadu B Village during 26th Jan. – 1st Feb. 2014.

Mr. S. Joseph Gladwin, AP/ECE, organized YRC village camp at Mullipakkam Government Middle School during 28th – 30th Jan. 2014. Around 70 volunteers participated the camp. The students involved in the infrastructure development of the school by providing white-wash, distribution

Student Placement Record

ECE Department placement activities are very appreciating. The details of the placement of UG for the batch 2010-2014 are provided below.

Total No. of Companies visited	: 76 (for all departments)
Total No. of Eligible Candidates	: 129
Total No. of Offers received with dual placement	: 167
Total No. of Offers accepted	: 109
Placement percentage	: 84.49 %
Salary package range (lakhs/annum)	: 8.2 (Indian Navy) to 3.00 (L&T ECC)

The major recruiters include CTS, WIPRO, INFOSYS, MuSigma, Zoho Corporation, Latent View, Lister Technologies, Dell, Ford, Microchip etc. Post graduate students from Applied Electronics, Communication systems and VLSI are also placed in the above mentioned companies. Most of our PG students are interested in doing research and serve the young minds by joining teaching community in reputed universities and colleges. Many of our students have got offer from following Engineering Colleges.

1. Sri Venkateswara Engineeringg College
2. St. Josephs College of Engineering
3. Rajalakshmi Engineering College
4. Sri Krishna College of Engineering
5. Manakula Vinayakar Engineering College
6. Kongu Engineering College and the list continue.

Congratulations All!!!

ALUMINI CORNER

Alumini Funding

The Department of ECE has received funding of worth Rs. 1, 60, 387/- from the following Alumuns to setup Wireless Communication Laboratory under the direct Supervision of Dr. S. Radha and Mr. N. Prabagarane.

1. Arunlal (2008)	- Rs. 10, 000/-
2. Prasaanth Muralitharan (2010)	- USD 500
3. Sudharssun Subramanian (2011)	- USD 1000
4. Sakthi Vignesh Radhakrishnan (2011)	- USD 500
5. Shriram Swaminathan (2011)	- USD 500

Alumini Higher Studies

The following Alumuns of the Department of ECE have received their admissions in the following reputed Institutions in India and Abroad. The Department wishes them success in their career.

1. Aswin, C. P. (2014) - MS at Lowa State University, USA
2. Ishwarya Varshini, S. (2014) - MS at Arizona State University, USA
3. Kris Shrishank, S. (2014) - MS at TU Delft University, Netherland
4. Madhuryamayi, M. (2014) - MS at North Carolina State University, USA
5. Maribel Monica (2014) - MS at University of Illinois, Chicago
6. Rashmi Mathan Kumar (2014) - MS at Arizona State University, USA
7. Sabareesh, S. (2014) - MS at University of Southern Carolina, USA
8. Santhosh, C. (2014) - MS at University of California, Davis, USA
9. Sathish, R. (2014) - MS at Nanyang Technological University, Singapore
10. Shanmugam, R. (2014) - MS at Georgia Insitute of Technology, USA
11. Shiwani Hariraman (2014) - MS at University of Texas, Dallas, USA
12. Shrinaath, A. (2014) - MS at Stony Brook, Newyork, USA
13. Shruthi, K. (2014) - MS at Georgia Insitute of Technology, USA
14. Swarupa Ramakrishnan (2014) - MS at North Carolina State University, USA
15. Vignesh Sabarinath, K. M. (2014) - MS at University of Texas, Dallas, USA
16. Vishnu Muralidharan (2014) - MS at University of Alabama, Huntsvelle
17. Yalamanchili Sailini Chitra (2014) - MS at Duke University, USA
18. Keerthana, S. (2014) - MS at IIT Madras, India
19. Nama Premsai (2013) - Ph.D at IIT Mumbai, India

Forthcoming Events

1. Hands-on workshop on "MEMS - Design Tools," during 11 - 13, Aug. 2014

2. Two day national workshop on "Cryptography and Network Security" will be held tentatively during 21-22, Aug. 2014.

3. IEEE AP-S proposes "Workshop on Advanced Antenna Technology" in Nov. 2014

This newsletter is produced by the Department of Electronics and Communication Engineering.
Comments and Suggestions are Welcome!

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