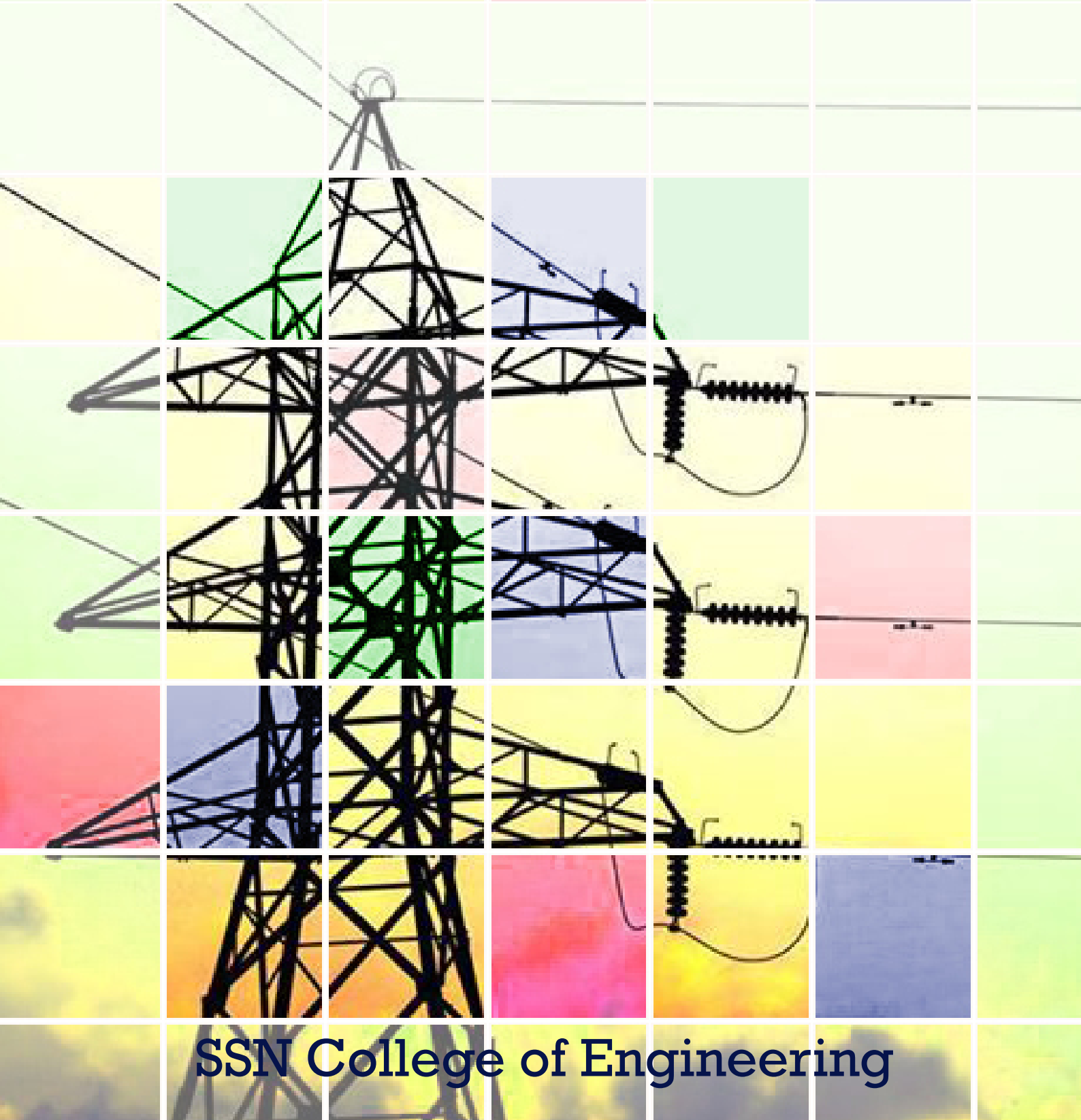
April 2015 Issue #13

# REDEEM

## Department of Electrical and Electronics Engineering



SSN College of Engineering

## From HOD'S Desk

The Department of Electrical and Electronics Engineering is constantly striving to achieve excellence in teaching, research and professional activities. We are happy to note that NBA (National Board of Accreditation, New Delhi) has awarded a full five year accreditation. This is an accomplishment of the Department. I thank each and every one in the department for their support and involvement. Our students have shown interest in participating in technical competitions conducted by national level institutes. A number of students have secured internships from global organizations. The Department organised a National level conference entitled "Power Electronics and Renewable Energy Systems" (PEARES-2015). Our Department in association with IEEE student branch organized a One day National Workshop on "Electrical Drives for Defence Applications". Also, the Department organized a two day Workshop on "Solar PV System Design" in association with SSN-IEEE Student Branch. We have secured Best Research Department Award for the year 2015, fifth time from our college. This issue of EEE Newsletter contains the details of our major achievements in several academic and sports activities in the last quarter. We welcome your suggestions and feedback.

## CONTENTS



## Preface

Unhappy? Stressed out? Do you feel you not only want more fun in your life, but you need more fun in your life? You seem to be doing all the right things, but yet you still feel unfulfilled. So, what's wrong? You want that feeling of happiness again, like that sense of pleasure you had as a child when you saw your first rainbow. But now you feel like you aren't getting what you want out of life, and it's leaving you feeling disheartened. The answer could be that your thoughts are sabotaging your happiness.

Is it possible that our thoughts have that much power over us? Yes! Our thoughts are the most powerful manifesting agent we have. Our thoughts work together with our subconscious mind to manufacture our reality. Our thoughts dictate to our subconscious mind to create what it is saying. Our subconscious mind is non-judgmental; it is like a computer assembling data. Whatever data you give it, it will accept. If the data is false or inaccurate, the computer doesn't care, it will accept whatever you punch in. Our mind works in the same way. Our internal dialogue is the data that we input to our subconscious mind. Our daily thoughts are the information that our subconscious uses to create. Our subconscious mind's job is to make our thoughts materialize. If your internal chatter says, I'm not as intelligent as my co-worker, your subconscious minds says, "Okay you're not as intelligent as your co-worker, I'll produce that for you. I will manifest your co-worker getting that promotion instead of you, to show you that it's true." If your internal chatter is always complaining about the injustices that happen to you, and that you are a victim, your subconscious mind says, "Yeah, you are such a victim, you are always getting treated unfairly; I will create a circumstance where you are treated unjustly, so you can be victimized." Have you ever wondered why successful people keep getting successful? It's because of their thinking. They have found the formula to success, their thoughts. Your subconscious is hard at work creating what you tell it. It wants to please you, so it will do what you think. Changing your outer world starts by changing your inner world first. When your inner world isn't congruent with your outer world, it creates turmoil inside your body, leaving you with the feeling of being stressed, tired, and an overall sense of unhappiness.

How do you stop the sabotage? Pay attention to your thoughts and internal dialogue. When you hear your little voice say anything limiting or negative, stop and replace that thought with what you really want, and believe you deserve it. It doesn't stop there, and then you have to take action into making that a reality. Act as if it were already true. When you do this, your subconscious knows you are serious about making a change, and it will assist you into getting what you really want. It will take a little time to start manifesting, but you will see a difference. Changing your thoughts results in changing your life. Often it is easily said than done."Long before we love people and use things but now we love things and use people'.

# Events Organized

## Electrical Drives in Defence Systems


Department of EEE Organized One day National Workshop on "Electrical Drives for Defence Applications" on Jan 23, 2015 under the banner of IEEE student branch.

Conveners: Dr. V. Kamaraj, Dr. R. Ramaprabha and Dr. M. Balaji

Number of Participants: 35

Speakers: Prof. S. Madivaanan, Scientist 'G', Additional Director (Ret), CVRDE/DRDO, Avadi, Chennai – 54 & Dr. M. Balaji, Asso.Prof./EEE, SSNCE

The sessions were

- Session I: Trends in Defence Projects
- Session II: Drives for Defence Applications
- Session III: Finite Element Analysis for Machine Design using MagNet Software

## TI Analog System Design

Two day workshop on "TI Analog System Design by using ASLK Pro" was jointly organized by Department of ECE and EEE in association with TI India University Program and Starcom Information Technology Limited, Bangalore during Feb 12-13, 2015. The details are,

- Coordinators: Dr. R. Rajavel (Asso.Prof./ECE), Dr. R. Ramaprabha (Asso.Prof./EEE) and Mr. S. Joseph Gladwin (AP/ECE)
- Sponsors: Starcom Information Technology limited and TI India University Program, Bangalore.
- Resource person: Mr. Narendra Babu, Sr. Application Engineer, Starcom Information Technology limited, Bangalore.

Audience: 46 students, Faculty and Technical staff members

# PEARES-2015


Department of EEE Organized Third National Conference on Third National Conference on "Power Electronics and Renewable Energy Systems (PEARES-2015)" during Feb 26-27, 2015. The details are,

- Conference Chairs: Dr. V. Kamaraj & Dr. Ranganath Muthu
- Conveners: Dr. R. Seyezhai & Dr. R. Ramaprabha
- Co-convener: Mr. M. Pandikumar
- Chief Guest: Mrs. Vidhya Sundarajan, Director, Quality & Assurance, Prodapt Solutions Pvt. Ltd., Chennai
- Number of Registered authors: 22
- Chair persons for the sessions: Dr. V. Kamaraj, Dr. Ranganth Muthu, Dr. N. Pandiarajan, Dr. R. Seyezhai, Dr. R. Ramaprabha, Dr. Mrunal Deshpande.
- Lecture/ Tutorial Sessions Handled by:

- 2 Technical paper sessions
- Demonstration on FPGA, DSP & ARM Processors for Renewable Energy Systems
- Keynote address – 1 by Dr. Ranganath Muthu, Professor. /EEE, SSNCE.
- Keynote address – 2 by Dr. V. Kamaraj, Professor & Head./EEE, SSNCE
- Tutorial –I by Dr. R. Ramaprabha, Associate Prof./EEE, SSNCE
- Tutorial –II by Dr. R. Seyezhai, Associate Prof./EEE, SSNCE

# Solar PV System Design

Department of EEE Organized Two day Workshop on "Solar PV System Design" during March 03 & 04, 2015 in association with SSN-IEEE Student Branch. The details are,

- Coordinators: Dr. Ashwin Kumar Sahoo (Prof.) and Dr. R. Ramaprabha (Asso. Prof.)
- Resource Person: V. Nivas Associate Director, Steinbeis Solar Research Centre, Chennai
- No. of Participants: 52
- Technical sessions cover the following major topics:

- Introduction to fundamentals of PV
- Solar Panel Fundamentals
- Hands on: Study of PV characteristics and shading analysis
- A mini off grid plant is setup at the training place
- Introduction to solar On & Off-grid systems and components
- Installations of On &Off-Grid in India
- Off & On Grid Design procedure, Bill of Materials preparation & Real time installations study of off grid plants
- Hands on: Solving On & Off-grid design statements and review on Off Grid Design tool
- Introduction to On Grid Software tools

# MATLAB Workshop

Dr. R. Ramaprabha (Assoc. Prof.) has arranged a Workshop on MatLab under SSN-IEEE student branch for the benefit of II, III & IV year UG students of EEE on March 10, 2015 during 10.00 am to 12.20 pm.

- Coordinators: R. R. Subhesh (IV year EEE), Sakina M Mota (III year EEE) and Gadepalli Sai Krishna Dileep (III year EEE)
- Speaker: Mr. J. Srihari (IV year EEE)

No. of participants: 82

# Laurels and accolades

## Journal Publications


Dr.V.Rajini and W.Abitha Memala published a paper titled "Single phasing fault identification using wavelet analysis" in International Journal of Engineering and Technology (IJET), Vol. 6 No. 6 Dec 2014-Jan 2015, pp2712-2721, ISSN : 0975-4024, SJR impact factor 0.14

N.Umadevi, M. Balaji, V.Kamaraj and L.Ananda Padmanaban published a paper titled "Data Interpolation and Design Optimisation of Brushless DC Motor Using Generalized Regression Neural Network" in Journal of Electrical Engineering and Technology, 2015, 10(1) pages 188-194, Impact factor 0.517,S.No in Annexure I list 4593.

A.K.Parvathy, R.Devanathan and V.Kamaraj published a paper titled "Analysis and application of quadratic linearization to the control of permanent magnet synchronous motors" in International Journal on Electrical Engineering and Informatics, Vol.6, No.4, Dec 2014

J.Anitha Roseline and Dr.V.Rajini's paper titled "A Novel Quadrant Search Based Mitigation Technique for DC voltage Fluctuation in Multilevel Inverters" is accepted for publication in Journal of Power Electronics (JPE) - Annexure 1, SJR impact factor - 0.746

M.Sudhakaran (Research scholar) and Dr.R.Seyezhai published a paper titled "Performance Evaluation of Variable frequency PDPWM Technique for an Trinary Hybrid Multilevel Inverter" in International Journal of Applied Engineering Research Research India Publications, Volume 9, Number 24 (2014) pp. 23717-23732, ISSN 0973-4562,(Anna University Annexure-II).

Ganesan.P and Dr.V.Rajini (Prof/EEE) published a paper titled "Segmentation and denoisisng of noisy satellite images based on modified fuzzy C means clustering and discrete wavelet transform for information retieval" in International Journal of Engineering Technlogy, Vol 5, No 5, Dec 2014. pp 3858-3869 (H index 03, citations 03, scopus 03)

Dr.R.Ramaprabha (Asso. Prof.) and A.Arrul Dhana Mathy (PG Student) published a paper titled "Design and Implementation of Leakage Current Minimization Technique for Single phase Grid Connected Transformer-less PV Inverter" in International Journal of Darshan Institute on Engineering Research & Emerging Technologies (IJDIERET) (ISSN: 2320-7590), Vol. 3 , No. 2, pp. 20-24, Dec 2014.

Dr.R.Ramaprabha (Assoc. Prof.) and S.Rithika (PG Student) published a paper titled "Modelling and Simulation of Control Circuit for Oscillator Based Inverter for Microgrids" in Asian Journal of Electrical Sciences (AJES) (ISSN: 2249-6297), Vol. 3, No. 2, pp. 22-26, July – Dec 2014.

K.N.Dineshbabu (PhD Student), Dr.R.Ramaprabha (Asso. Prof.), Dr.V.Rajini (Prof.), Kamal Bansal & Bala Vinayagam published a paper titled "Comprehensive Analysis of Auto Synchronization Techniques in Solar Photovoltaic Grid Connected Systems" in Journal of Modern Applied Science (ISSN 1913-1844; E-ISSN 1913-1852), Vol. 9, No. 2, pp. 278-285, Feb 2015. SJR Impact factor 0.22.

Ganesan.P and Dr.V.Rajini (Prof/EEE) published a paper titled, "Satellite image segmentation based on YCbCr color space" in Indian journal of science and technology, Vol. 8, No.1, Jan 2015

Ganesan.P, Dr.V.Rajini (Prof/EEE) published a paper titled, "The region of forest fire detection and segmentation using high resolution satellite images based on clustering" in International journal of advanced life sciences vol. 7, no.3, pp 3851-3856 (Thomson reuters )

Dr.R.Seyezhai, ASSP/EEE and R.Niraimathi (Research scholar) published a paper titled, "Analysis of PWM Switching Techniques for Grid Connected Multilevel DC Link Inverter" in International Journal of Applied Engineering

Research, ISSN 0973-4562 Vol. 9 No.24 (2014) pp. 8013-8019 (Anna University- Annx.-II).

Dr.R.Seyezhai, ASSP/EEE and V.Chamundeeswari(Research scholar), published a paper entitled, "Digital control for Negative Output Superlift Luo Converter using ARM Processor" in International Journal of Applied Engineering Research, ISSN 0973-4562 Vol. 9 No.24 (2014) pp. 8032-8035. (Anna University- Annx.-II).

Dr.R.Seyezhai,ASSP/EEE and M.Shanthi Murugan(Research scholar) published a paper titled "Simulation and Analysis of Burst Mode Control Technique for Full-Bridge LLC Resonant Converter for Photovoltaic Applications" in International Journal of Applied Engineering Research, ISSN 0973-4562 Vol. 9 No.24 (2014) pp. 8041-8045. (Anna University- Annx.-II).

Anoop.K.J and Dr.V.Rajini (Prof/EEE) published a paper titled "Investigations on voltage multiplier cells for high step up conversion" in ARPN Journal of Engineering and Applied Sciences, Vol. 10, No. 1, January 2015 ISSN 1819-6608

Dr.R.Seyezhai,ASSP/EEE published a paper titled "Simulation of Fuzzy Logic Controller For PEM Fuel Cell Based Hybrid Cascaded Multilevel Inverter" in Electrical and Electronics Engineering Journal, Vol 4, No 1, February 2015.

Pramod Kumar Gouda, Dr.Ashwin Kumar Sahoo Prof /EEE and Dr.P.K.Hota published a paper titled "Optimal Power Flow Including Unified Power Flow Controller in a Deregulated Environment" in International Journal of Applied Engineering Research, ISSN 0973-4562 Volume 10, Number 1 (2015) pp. 505-521 (Anna University Annexure – II)

Dr. Ashwin Kumar Sahoo (Prof/EEE) and Aswin Gautham.D published a paper titled "An Adaptive Fuzzy Logic Controller for Load Frequency Control of a Distributed Grid Systems" in International Journal of Applied Engineering Research, ISSN 0973-4562 Volume 10, Number 1 (2015) pp. 1591-1604 (Anna University Annexure – II)

S.Iyappan (PG Student) and Dr.R.Ramaprabha (Assoc. Prof.) published a paper titled "Performance Evaluation of Canonical Switching Cell Converter fed BLDC Motor Drive for Power Quality Improvement" in International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE), (ISSN: 2320 – 3765) ISSN (Online): 2278 – 8875, Vol. 4, No. 2, pp. 559-567, Feb 2015 (doi: 10.15662/ijareeie.2015.0402008).

Ms.R.Hemalatha (AP/ECE), Dr.R.Ramaprabha (Asso. Prof./EEE) and Dr.S.Radha (Prof. & Head/ECE) published a paper titled "A Comprehensive Analysis On Sizing Of Solar Energy Harvester Elements For Wireless Sensor Motes" in International Journal of smart sensing and intelligent systems, (ISSN 1178-5608), Vol. 8, No. 1, pp. 291-315, March 2015. SJR Impact factor 0.34.

Dr.Mrunal Deshpande (ASSP/EEE) published a paper titled "Novel Displacement transducers for magnetic levitation system" in Australian Journal of Basic and Applied Sciences, March 2015, Pages: 460-468, ISSN:1991-8178. Anna Univ Anexure II.

D.Umarani and Dr.R.Seyezhai has published the paper titled "FPGA Implementation of PV based Quasi Z-Source cascaded Multilevel Inverter"on International Journal of Electrical Engineering,ISSN 0974-2158 Volume 7, Number 3(2014), pp. 399-411.

M.Shanthi (Research Scholar) and Dr.R.Seyezhai ASSP/EEE published a paper titled "A Simple Design and Simulation of Full Bridge LLC Resonant DC-DC Converter for PV Applications", Middle-East Journal of Scientific Research 23 (2): 285-292, 2015, ISSN 1990-9233,(AU , Annx.-II), Impact Factor : 0.16).

# Conferences

S.Krishanveni and Dr.V.Rajini presented a paper titled "High voltage DC pulsed power supply based on high gain Cockroft Walton voltage multiplier converter" in International Conference on Electrical Instrumentation and Communication Engineering conducted by Sri Krishna College of Engg. on 2nd,3rd of January 2015 and received the Best Paper Award

Dr.R.Seyezhai, V.Chamundeeswari (Research scholar) and V.Divya (M.E.PED) presented a paper titled "Design and Implementation of P&O MPPT Technique for Negative output Superlift Luo Converter" in International Conference on Sustainable Energy Resources, Materials and Technologies (ISERMAT 2015), Jan. 8-9, 2015 organized by Mechanical Engineering Department, SSNCE.

Dr.U.Shajith Ali presented a paper titled "Bi-directional Z-source Inverter for Superconducting Magnetic Energy Storage Systems" in International Conference on Sustainable Energy Resources, Materials And Technologies (ISERMAT-2015) held at SSN College of Engineering.

Dr.U.Shajith Ali presented a paper titled "A Modified Maximum Power Point Tracking Control for Bi-directional Z-source DC-DC Converter Based Solar Electric Vehicle" in International Conference on Sustainable Energy Resources, Materials And Technologies (ISERMAT-2015) held at SSN College of Engineering.

S.Malathy (AP) and Dr.R.Ramaprabha (Assoc. Prof.) presented a paper titled "Improvement in Energy Harvest of Solar Photovoltaic Systems under Partial Shaded Conditions" in International Conference on Sustainable Energy Resources, Materials And Technologies (ISERMAT 2015), presented at SSN College of Engineering, Kalavakkam on Jan 8 & 9, 2015.

M.Pandikumar (AP), Dr.R.Ramaprabha (Assoc. Prof.) and Dr.Ranganath Muthu (Prof.) presented a paper titled "Analysis of Controllers for Photovoltaic fed Brushless DC Motor based Water Pumping System" in International Conference on Sustainable Energy Resources, Materials and Technologies (ISERMAT 2015) at SSN College of Engineering, Kalavakkam on Jan 8 & 9, 2015, Awarded as Best paper award.

A.Tamilselvan (Research scholar) and Dr.V.Rajini presented a paper titled "A novel control scheme for power factor improvement in modified bridgeless boost converter" in International Conference on Sustainable Energy Resources, Materials And Technologies (ISERMAT-2015) held at SSNCE.

Dr.R.Seyezhai, ASSP/EEE and D.Umarani, AP/EEE presented a paper titled, "A Comparative study of conventional and Quasi Z-Source multilevel inverter for photovoltaic applications", International conference ICRIET 2015 (International Conference on Recent Innovations in Engineering and Technology 2015) at Mahabarathi Engineering College,Chinnasalem.

M.Suudharshana, S.Srivignesh (III Yr.EEE-B) and Dr.R.Seyezhai, ASSP/EEE, presented a paper titled "Design And Simulation Of Phase-Shift Full-Bridge DC-DC Converter For Power Supply in a Data Center" at Third National Conference on Power Electronics and Renewable Energy, PEARES-2015 at SSNCE.

Nithya Subramanian, Pridhivi Prasanth, R.Srinivasan, R.R.Subhesh (Final Year EEE B) and Dr.R.Seyezhai, ASSP/EEE presented a paper titled "Investigation of Voltage mode Control for Interleaved Boost Converter with Ripple Cancellation Network for Photovoltaic applications" at Third National Conference on Power Electronics and Renewable Energy, PEARES-2015 at SSNCE.

M.S.Anandhi (PG Student) and Dr.R.Ramaprabha (Asso. Prof.) presented a paper titled "Modelling and Simulation of switched Inductor Quasi Z-source Inverter for Photovoltaic Interface" in Third National Conference on Power Electronics and Renewable Energy Systems (PEARES-2015) during Feb 26-27, 2015.

C.Bala Murali Krishna and Dr.N.Pandiarajan (Prof EEE) presented a paper titled "Analysis and Performance Enhancement of Photovoltaic systems at Higher Temperatures" in the third National Conference on "Power Electronics and Renewable Energy Systems (PEARES-2015), SSN College Of Engineering, Chennai, India, Feburary,2015.

Anitha.R.Carol and Dr.N.Pandiarajan (Prof/EEE) presented a paper titled "Design and Development of an Inverter for PV System with a Half Bridge DC-DC Converter" in the third National Conference on "Power Electronics and Renewable Energy Systems (PEARES-2015), SSN College Of Engineering, Chennai, India, Feburary,2015.

V.Durai Raj and Dr.N.Pandiarajan (Prof/EEE) presented a paper titled "Design and Analysis of SEPIC Converter in PV Based Battery Charging Application" in the Third National Conference on "Power Electronics and Renewable Energy Systems (PEARES-2015), SSN College Of Engineering, Chennai, India, Feburary,2015.

K.V.Iswarya(II M.E.PED), Dr.M.Balaji(ASSP/EEE), Mr.Azhagar Raj and Mr.Imthiaz Ahmed (Hibrise Technologies) presented a paper titled "Investigation of Modified Pole Shapes on the Performance of the Linear Switched Reluctance Motor" in International Conference on Innovative strategies in Renewable Energies and its Applications (ISREA-2015)held at Sona College of Technology, Salem.

A.K.Pandian, R.Srinath, R.Venkatesh and Dr.M.Balaji(ASSP/EEE) presented a paper titled, "Harmonic Mitigation in MultiLevel Inverter with Reduced Number of Switches" in International Conference on Innovative strategies in Renewable Energies and its Applications (ISREA-2015)held at Sona College of Technology, Salem.

R.Anbarasan, K.Balaji Nagaraj, Mandala Deekshith, G.R.Venkatakrishnan and Dr.R.Rengaraj (ASSP/EEE) presented a paper titled "Fault Protection in Two Level Single Switch DC - DC Boost Converter for Distributed Generation Systems" in International Conference on innovative Strategies in Renewable Energy and its applications (ISREA) 2015, Sona College of Technology, Salem, March 5 - 6, 2015

Saravanan.P (Assistant Professor), Anbuselvi.M (Assistant Professor), Prashaanth.R and Sindhu.S.L (II year UG students) presented a paper titled "Design and development of computation intelligence for acc based on rtos using PIC controller" in International Conference on Engineering Technology and Science (ICETS'15), pp. 419-423 during March 05-06, 2015 at Muthayammal College of Engineering, Rasipuram

Saravanan.P (AP/EEE), Dr.M.Senthil Kumaran (ASSP/EEE), Veena.S and Srilakshmi.P.S (II year UG students) presented a paper titled "Estimation of Position and Speed of SRM Using MATLAB-System Generator and Xilinx Nexys-2 Board" in International Conference on Engineering Technology and Science (ICETS'15), pp. 865-870, March 05-06, 2015 at Muthayammal College of Engineering, Rasipuram

Dr.R.Ramaprabha (ASSP/EEE) and A.Arrul Dhana Mathy (PG Student) presented a paper titled "Detailed Analysis of Modulation Techniques to Reduce Leakage Current in Transformerless Five-level inverters for Photovoltaic Systems", International Conference on Innovative Strategies in Renewable Energies and its applications (ISREA-15), pp. 182-187 (ISBN: 978-93-83910-05-02) March 05-06, 2015 at Sona College of technology, Salem.

Dr.R.Ramaprabha (Asso. Prof.) and S.Rithika (PG Student) presented a paper titled "Design and Simulation of Photovoltaic based Microgrid under changing Environment conditions" in International Conference on Innovative Strategies in Renewable Energies and its applications (ISREA-15), pp. 431-437 (ISBN: 978-93-83910-05-02), March 05-06, 2015 at Sona College of technology, Salem.

Dr.R.Ramaprabha (Assoc. Prof.), R.Priya, P.Sadhana and J.Shiny Auxilia (Final Year UG Students) presented a paper titled "PSpice Simulation Design and Implementation of Single Phase Step-down Cycloconverter" in International Conference on Innovative Strategies in Renewable Energies and its applications (ISREA-15), pp. 420-424 (ISBN: 978-93-83910-05-02), March 05-06, 2015 at Sona College of technology, Salem.

Dr.R.Ramaprabha (Assoc. Prof.), S.Harini, A.Chandra Ganeshan and K.Nanditha (III year UG Students) presented a paper titled "Design and Modelling of Pulse Generation for DC-Link Inverter Drive for Brushless DC Motor" in International Conference on Engineering Technology and Science (ICETS'15), pp. 199-204, March 05-06, 2015 at Muthayammal College of Engineering, Rasipuram.

Dr.R.Seyezhai(ASSP/EEE) and N.Hemalatha (Research Scholar) presented a paper titled "Design, Simulation and Experimentation of Modified Capacitor Assisted Extended Boost Quasi Z-source Inverter for PV Applications" in the International Conference on Electrical, Electronics and Computer Engineering, ICEECE-2015 at Vivekanandha College of Engineering for Women, Tiruchencode.

Dr.R.Seyezhai(ASSP/EEE) and Mr.Rasan (Research Scholar) presented a paper titled "Capacitor voltage balancing control for Modular Multilevel Inverter based on Carrier Phase Shifted Sinusoidal Pulsewidth Modulation Technique" in the International Conference on Electrical, Electronics and Computer Engineering, ICEECE-2015 at Vivekanandha College of Engineering for Women, Tiruchencode.

Dr.R.Seyezhai(ASSP/EEE) and S.Dharani (II Yr. M.E.PED) presented a paper titled "Simulation and Analysis of Multilevel Inverter with Reduced Number of Switches for Fuel Cells" in the International Conference on Electrical, Electronics and Computer Engineering, ICEECE-2015 at Vivekanandha College of Engineering for Women, Tiruchencode.

Dr.R.Seyezhai(ASSP/EEE) and P.Vaishnavi (II Yr. M.E.PED) presented a paper titled "Simulation and Performance Analysis of a Novel Seven-level for Photovoltaic System"in the International Conference on Electrical, Electronics and Computer Engineering, ICEECE-2015 at Vivekanandha College of Engineering for Women, Tiruchencode.

Dr.R.Seyezhai(ASSP/EEE) and V.Aarthi (II Yr. M.E.PED) presented a paper titled "Investigation of Interleaved Boost Converter with Voltage Multiplier for PV with Fuzzy MPPT" in the International Conference on Electrical, Electronics and Computer Engineering, ICEECE-2015 at Vivekanandha College of Engineering for Women, Tiruchencode.

Dr.R.Seyezhai(ASSP/EEE) and M.Tamilarasi (Research Scholar) presented a paper titled "Particle Swarm Optimization for the Modeling of PEM fuel cell" in the International Conference on Electrical, Electronics and Computer Engineering, ICEECE-2015 at Vivekanandha College of Engineering for Women, Tiruchencode.

Dr.R.Seyezhai(ASSP/EEE) and A.Inba Rexy (Research Scholar) presented a paper titled "Investigation of Performance Parameters for Interleaved PFC Boost Converter" in the International Conference on Electrical, Electronics and Computer Engineering, ICEECE-2015 at Vivekanandha College of Engineering for Women, Tiruchencode.

Dr.R.Seyezhai(ASSP/EEE) and A.Bharathi Sankar (Research Scholar) presented a paper titled "Performance Analysis of Three-phase Active Neutral Point Clamped Multilevel Inverter for BLDC Drive", in the International Conference on Electrical, Electronics and Computer Engineering, ICEECE-2015 at Vivekanandha College of Engineering for Women, Tiruchencode.

Dr.R.Seyezhai (ASSP/EEE), S .Sathitya, T.Nivedhitya & G.Vaishnavi (III Yr. EEE, B Students) presented a paper titled "Simulation of High Step-up DC-DC Converter for PV Applications" in the fourth International conference on contemporary engineering and technology, 2015 at Sri Ramanujar Engineering college, Chennai.

Dr.U.Shajith Ali presented a paper titled "Z-Source DC-DC Converter With Improved Perturbation and Observation Algorithm For Photovoltaic Systems" in International Conference on Emerging Trends in Engineering and Technology held at K.N.S.K.College of Engineering, Nagercoil.

Dr.U.Shajith Ali and T.P.Rajalakshmi presented a paper titled "Isolated Quasi Z-Source DC-DC Converter for Superconducting Magnetic Energy Storage System" in International Conference on Emerging Trends in Engineering and Technology held at K.N.S.K.College of Engineering, Nagercoil.

Dr.U.Shajith Ali and B.Ramasudha presented a paper titled "Bidirectional Quasi Z-Source Converter Based Flywheel Energy Storage System" in International Conference on Emerging Trends in Engineering and Technology held at K.N.S.K.College of Engineering, Nagercoil.

Dr.R.Seyezhai(ASSP/EEE), Sree Mallika (Passed out PG Student) and Dr.Mrunal Deshpande presented a paper titled " A Novel SEPIC Power Factor Correction Converter For HB-LED Applications" in the National Conference on Engineering Applications for Developing Smart Cities at Dhirajlal Gandhi College of Engineering, Salem.

A.Kaviya, V.Janani, D.Harini (III Year EEE Students) and R.Leo presented a paper titled "Multi Agent Reinforcement based distributed optimization of solar micro-grid" in International Conference on Emerging trends in Information Technology[ICETIT'15] at Bharathidasan Institute of Technology, Triuchirappalli

# Grants and funding

Dr.M.Balaji's project titled "Design and Development of Hybrid Switched Reluctance Motor Drive" has been recommended for financial assistance by expert committee under DST Fast Track Scheme for Young Scientist. Relevant documents have been submitted for the release of funds.

Department of EEE received 6 numbers of ASLK Pro Kits worth of 0.65 lakhs (to enhance LIC lab) and 10 numbers C2000 Launch Pads along with 2 numbers of Peripheral Explorer Kit (TMDSPREX28335) worth of Rs. 0.7 lakhs (MCU lab) from Texas Instruments (TI) against MOU/LOA Signed with TI.

Dr.R.Seyezhai(ASSP/EEE) and Dr.Mrunal Deshpande submitted a project proposal to MNRE for Rs.41 Lakhs.

# Guest Lectures

Dr.V.Rajini (Prof/EEE) gave a guest lecture on "Research trends in High voltage Engg." at Parisutham Institute of Technology and science - Tanjore on 6-2-2015(FN).

Dr.R.Ramaprabha (Assoc. Prof.) arranged a guest lecture under SSN-IEEE student branch for the benefit of III & IV year UG and I & II year PG students of EEE. The resource person is Dr. K. N. Dineshbabu, Lead Application Engineer (Power System), General Electric, Chennai on 24.02.2015. The lecture was scheduled between 08.45 a.m. to 11.00 a.m.

Dr.R.Seyezhai,ASSP/EEE delivered a lecture on "Simple design of Interleaved Boost Converter for Renewable Energy sources" in the Third National Conference on Power Electronics and Renewable Energy, PEARES-2015 at SSNCE.

Dr.M.Balaji(ASSP/EEE) delivered a Guest Lecture on "Microprocessor and Microcontroller" at RMD Engineering College

Dr.R.Seyezhai(ASSP/EEE) inaugurated the National Workshop on Control System Design for Power Converters at Ganadipathy Tulsis's Jain Engineering College, Vellore. She also delivered a lecture on "Design of PI & Fuzzy Controllers For DC-DC Converters".

Dr Mrunal Deshpande (ASSP/EEE) delivered a lecture on "Linear and non linear controllers" at the National Workshop on Control System Design for Power Converters at Ganadipathy Tulsis's Jain Engineering College, Vellore.

# Review

Dr. R. Ramaprabha (Assoc. Prof.) reviewed a paper for an International journal on Renewable Energy (Elsevier Publications), Feb 2015.

Dr.R.Ramaprabha (Assoc. Prof.) reviewed 4 papers for International Journal of Applied Mechanics and Materials, Feb 2015.

Dr.R.Ramaprabha (Assoc. Prof.) reviewed a paper for an International Journal on Advances in Electrical and Electronic Engineering, March 2015.

Dr.R.Ramaprabha (Assoc. Prof.) reviewed a paper for an International Journal of Simulation and Process Modelling (IJSPM), Inderscience Publishers, March 2015.

Dr.R.Ramaprabha (Assoc. Prof.) reviewed a paper for an International journal on IET Renewable Power Generation, Dec 2014.W

Dr.R.Seyezhai(ASSP/EEE) reviewed the technical papers for the IET Journal on Renewable Energy .

# Meetings

Dr.R.Ramaprabha (Assoc. Prof.) attended DC meeting at Sri Venkateswara College of Engineering (SVCE), Sriperumputhur on 13.01.2015.

Dr.R.Ramaprabha (Assoc. Prof.) attended DC meetings for two candidates at R. M. D. College of Engineering, Kavarepetai, Chennai on 24.01.2015.

Dr.R.Seyezhai, ASSP/EEE attended the doctoral committee meeting at SRM University, Chennai.

Dr.R.Seyezhai, ASSP/EEE attended the Business Incubator meeting held at EDI, Chennai regarding the submission of application form.

Dr.V.Rajini (Prof/EEE) attended two doctoral meetings at Sastra University, Tanjore on 6-2-2015(AN)

Dr.R.Ramaprabha, Asso. Prof. (SSN-IEEE student branch counselor) attended the annual general body meeting of the IEEE Madras section on Feb 14, 2015 and received student branch rebate for the year 2014 on behalf of SSN-IEEE student branch.

Dr.R.Seyezhai, ASSP/EEE attended the IEEE AGM meeting and as the Secretary of IEEE-PELS, Madras section received the appreciation certificate for the PELS society alongwith the chair of the Society for conducting three events in the year 2014.

Dr.V.Rajini (Prof/EEE) attended Material research meet

Dr Mrunal Deshpande ASSP/EEE attended conference on Management education conclave conducted by CII.

Dr.R.Ramaprabha (Assoc. Prof.) attended DC meeting at Dr. M. G. R. Educational and Research Institute University, Chennai on 26.03.2015.

# Research Progress

Dr.R.Ramaprabha (Assoc. Prof.) has presented her research activities and roadmap on 03.01.2015 at SSN Research Center in the presence of Dr.Barua and progresses are submitted to The Dean (Research) for RAC.

Dr.R.Seyezhai, ASSP/EEE presented her research work at the Energy Researchers meet headed by Dr.Baruo at SSNRC.

Dr.R.Seyezhai,ASSP/EEE presented her research work at the Energy Researchers meet headed by Dr.Baruo at SSNRC.

The SSN Doctrate Scholars day was conducted on Feb. 25th, 2015 and Mr.A.Bharathi Sankar (Full-time Research Scholar) under the guidance of Dr.R.Seyezhai received the prize for the best oral presentation.

SSN research day was held on 30th March 15. EEE Department received the Best Research Department award. Number of students and faculty members also received awards under various catagories.

# Accolades

Dr.R.Seyezhai, ASSP/EEE has been appointed as the advisory and Program committee member for the third International Conference on Energy Research and Power Engineering, ERPE -2015 to be held on 16-17, May 2015 at Dalian.

Dr.R.Ramaprabha (Assoc. Prof.) chaired a session on 'Electrical Systems' in International Conference on Sustainable Energy Resources, Materials and Technologies (ISERMAT 2015), Department of Mechanical Engineering, SSN College of Engineering, Kalavakkam held on Jan 8 & 9, 2015.

Dr.R.Ramaprabha (Assoc. Prof.) reviewed papers for 11th IEEE International Conference on Power Electronics and Drive Systems (PEDS 2015) which will be held in Sydney, Australia during June 09-12, 2015.

Dr.Mrunal Deshpande, ASSP/EEE has been invited as judge for technical paper presentation in the EEE symposium at KCG College of Technology, Chennai.

Dr.R.Seyezhai, ASSP/EEE has been invited as Judge for the technical paper presentation for the EEE symposium at KCG College of Technology, Chennai.

Dr.V.Kamaraj (Prof. & head), Dr.R.Ramaprabha and Dr.M.Balaji (Faculty coordinators) applied a proposal for AICTE-INAE Distinguished Professorship Scheme on 16.02.2015.

Dr Ranganath Muthu Prof/EEE was Guest of Honour at the inaugural function of ISA Student Section at Anand Institute of Higher Technology

Dr. Ranganath Muthu chaired a session at the National Conference 'Recent Trends In Instrumentation and Control (RTIC-15)' at MIT, Anna University

Dr.R.Seyezhai(ASSP/EEE) has been nominated as technical committee member for the international conference ESTSE-2016 to be organized by Amrita School of Engineering, Bengaluru in the field of Power and Energy.

Dr.R.Rengaraj (ASSP/EEE) co-authored a book titled "Control Systems Engineering" with Dr. S. Salivahanan, published by Pearson Education, 2015

Dr.R.Seyezhai(ASSP/EEE) chaired the technical session on Power Electronics in the International Conference ICON-STEM-2015 held at Jeppiaar Engineering College, Chennai.

Dr.Mrunal Deshpande (ASP/EEE) was one of the judges for Project Exhibition 2015 conducted by Sai Ram Engineering College Tambaram.

Dr.R.Seyezhai(ASSP/EEE) has been nominated as reviewer board member for the International Research Journal of Electronics and Communication Engineering.

Dr.V.Rajini coordinated the NBA Visit and prepared the revised SAR

Dr.V.Rajini (Prof/EEE) visited small wind turbine manufacturing unit at Bangalore and two of their installations and measured the actual performance of the wind system for the recently sanctioned MNRE funded project

## Workshop

Mr.G.Jeyakumar (Lab assistant/LIC lab/EEE) and Mr.R.Alagarraju (Lab assistant/Control systems Lab/EEE) attended Two day workshop on "TI Analog System Design by using ASLK Pro" was jointly organized by Department of ECE and EEE, SSNCE in association with TI India University Program and Starcom Information Technology limited, Bangalore during Feb 12-13, 2015.

Ms.D.Umarani has attended a two day national workshop on "Design and Implemenation of Advanced Controllers for Renewable Energy Systems using MATLAB and DSPACE" at Kongu Engineering College, Erode.

## Other Achievements

Aadithya.S (III year EEE-A student), Sanjay.S and Sibi.S (IV year EEE-B students) participated and won I prize in Rush Hour - Pragyan, NIT Trichy, III prize in Apollo18 - Pragyan, NIT Trichy and II prize in k!ronicles of Mars - Kurukshetra, CEG

Astalakshmi.K, B.Monica Shree, Krithika.K, Celin Breezla.S, Harini.D, Anjana Nair, P.Monissha (III year EEE-A students) won the I place in inter year tug-of-war conducted for SSN Sports Day.

B.Monica Shree (III year EEE-A) won the III place in shortput, II place in long jump and I place in 4x100m conducted for SSN Sports Day

B.Monica Shree, S.Celin Breezla, J.Kiruthiga, P.Monissha (III year EEE-A) emerged as runners in Cricket conducted for SSN Sports Day.

Manisha.V and Sujaveena (II year) came second in 400m relay conducted for SSN Sports Day

P.Monissha (III year) won in Chess conducted for SSN Sports Day

Manisha V Bachpai(II year) and Subadhra(IV year) were the winners and got gold medal in All India Squash competition conducted by Parisutam institute of technology & Science, Thanjavur

## GRE Scores

| Name | GRE Score |
|---|---|
| M.Sriram | 329 |
| R.Rahul | 327 |
| B.K.Poojha | 323 |
| M.Vignesh | 321 |
| S.Vishal | 321 |
| Aashna Hemkumar | 318 |
| Sai Bhavani | 318 |
| B.Srividhya | 318 |
| M.Suudharshana | 317 |
| V.Viggnesh | 315 |
| S.Srivignesh | 313 |
| Srinath Kannan | 311 |
| S.R.Santhosh | 311 |

Manisha V (II Year) and Prithika Rani (I year) got runners in Tennis in TIES, Sairam and in Sastra University.

Subadhra(IV year) was the runner in TIES, Sairam and the winner in Sastra University in Table Tennis.

Prithika Rani(I year) was the runner in Tennis in Manipal University.

Prahaladh (II year EEE) is part of SSN Cricket team who were the winners in Loyala,Manipal and sathyabama university.

# Memristor - Not a missing element

-Prashant (II year, EEE-B)

In 1971, a physicist conceptualized the existence of a fourth fundamental element in the electronic circuit, besides the three that were already in use at the time. His name was Leon Chua and he believed -- for reasons of symmetry -- that an extra component could one day be constructed to join the resistor, the capacitor and the inductor. He called it “memristor”, a portmanteau of the words memory and resistor. It took 37 years for our engineering abilities to catch up with that idea: the first memristor was built by Hewlett Packard in 2008. In a transistor, once the flow of electrons is interrupted by, say, cutting the power, all information is lost. But a memristor can remember the amount of charge that was flowing through it, and much like a memory stick it will retain the data even when the power is turned off. This can pave the way for computers that will instantly turn on and off like a light bulb and never lose data: the RAM, or memory, will no longer be erased when the machine is turned off, without the need to save anything to hard drives as with current technology. But memristors have another fundamental difference compared with transistors: they can escape the boundaries of binary code. Memristors can function in a way that is similar to a human brain. Unlike a transistor, which is based on binary codes, a memristor can have multi-levels. It can have several states. It may be zero, one half, one quarter, one third, and so on, and that gives us a new, powerful perspective on how our computers may develop in the future. Such a shift in computing methodology would allow us to create “smart” computers that operate in a way reminiscent of the synapses in our brains. After manufacturing the first ever memristor, Hewlett Packard has been working for years on a new type of computer based on the technology. According to plans, it will launch it by 2020. Simply called “The Machine”, it uses “electrons for processing, photons for communication, and ions for storage”. At the moment, manufacturing costs are still high, but the benefits are worth it. Memristors operate at a lower power consumption, with a faster speed and with a higher volume density of information than anything we have based on silicon microchip transistors.

# Evolution of theories on electricity and magnetism (Part2)

-Devika B S (II year EEE-A)

There was very little development regarding observations on electricity and magnetism between 100 BCE and 600BCE. Though there are some records related to 'Baghdad Battery' dated 300 BCE which resembles the present day Galvanic cell, there is no clarity regarding it. In 1st century BCE, a shepherd named Magnus had discovered the magnetic the properties of iron as his shoe nails got attracted to natural iron.


Don't cut nails on Tuesdays/Fridays. A black cat just passed your path, so… We all are really familiar with such superstitions, aren't we? Now there were certain superstitions related to magnetic properties. Some people seriously believed that garlic could weaken magnetic field. This made sailors avoid usage of garlic (and onions too) while using compass even in the 1600s CE!

The first person to distinguish between electric and magnetic forces was Girolamo Cardano from Italy in 1550 CE.

William Gilbert (an English physicist, physician and a natural philosopher) did extensive experimental study on this topic and his experiments explained the phenomenon of 'dipping of needle' in the compass. His main objective was to explain problems that occurred during navigation due to interference by magnetic fields. Some people consider him as the father of electric- ity and magnetism / electrical engineering. He published a very famous book regarding elec- tricity and magnetism titled 'De Magnete' in 1600 CE.

He was the first person to coin the word 'electricus' meaning 'from amber' or 'like amber'. The Greek word for amber is 'elektron'. This 'electricus' later led to the formation of 'electric' or 'electricity' in English. Now, how many of us thought that the word electricity originated from the electrons in an atom? Actually, it originates from the word amber!

# Touchscreen Technology

-Shruti Sriram (II year EEE-B)

These days most of us use smartphones and tablet that works just with the command of our fingertips and carries out some very important tasks. This is something that has always amazed me, and I would truly attribute the 'touch-screen technology' with the title of 'one of the most innovative ideas that drives the modern world'.

According to Wikipedia, a touchscreen is an electronic visual display that the user can control through simple or multi-touch gestures by touching the screen with one or more fingers. In general, there are 3 types of touch screens. They are capacitive touchscreens, resistive touchscreens and surface acoustic wave touchscreens. The way they work is very interesting, especially if you are an electrical engineering student.

The resistive system consists of a normal glass panel that is covered with a conductive and a resistive metallic layer. These two layers are held apart by spacers, and a scratch-resistant layer is placed on top of the whole setup. An electrical current runs through the two layers while the monitor is operational. When a user touches the screen, the two layers make contact in that exact spot. The change in the electrical field is noted and the coordinates of the point of contact are calculated by the computer. Once the coordinates are known, a special driver translates the touch into something that the operating system can understand, much as a computer mouse driver translates a mouse's movements into a click or a drag.

On the other hand, in the capacitive system, a layer that stores electrical charge is placed on the glass panel of the monitor. When a user touches the monitor with his or her finger, some of the charge is transferred to the user, so the charge on the capacitive layer decreases. This decrease is measured in circuits located at each corner of the monitor. The computer calculates, from the relative differences in charge at each corner, exactly where the touch event took place and then relays that information to the touch-screen driver software. Hence, if you touch

your touchscreen with any conducting material, for example, your fingertips or even vegetables, the commands are read properly. One advantage that the capacitive system has over the resistive system is that it transmits almost 90 percent of the light from the monitor, whereas the resistive system only transmits about 75 percent. This gives the capacitive system a much clearer picture than the resistive system.

The surface acoustic wave system is a newly emerging technology. On the monitor of a surface acoustic wave system, two transducers (one receiving and one sending) are placed along the x and y axes of the monitor's glass plate. Also placed on the glass are reflectors -- they reflect an electrical signal sent from one transducer to the other. The receiving transducer is able to tell if the wave has been disturbed by a touch event at any instant, and can locate it accordingly. The wave setup has no metallic layers on the screen, allowing for 100-percent light throughput and perfect image clarity. This makes the surface acoustic wave system best for displaying detailed graphics (both other systems have significant degradation in clarity).

Touchscreen technology, as a whole, has a lot of uses. We use it in our day to day lives in our phones, tablets and PC's. It is common knowledge that time is money in the business, and that is especially so in the fast paced retail environment. As touchscreen systems are easy to use and efficient, employees can complete tasks faster, and the amount of time needed for training time can be significantly reduced. It is a fact that nobody likes waiting in line or queuing for things, and it is a problem that can be overcome by using touch screens. Self-service touch screen terminals are being used to improve customer service at stores, restaurants and transportation hubs.

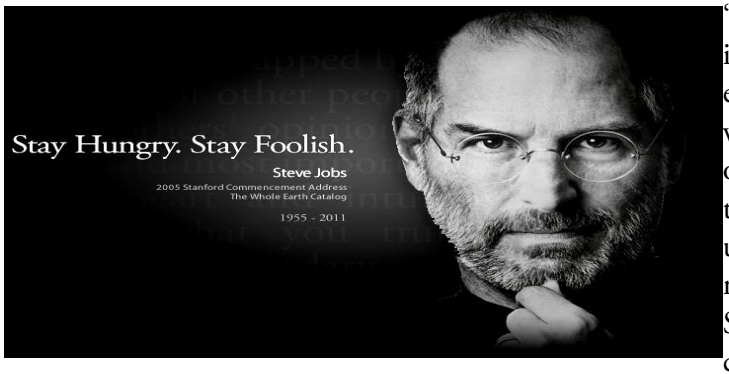
Using touch screen technology for education systems can result in increased speed of training, decreased costs, improved effectiveness and interaction and more fun for the trainee. Due to its ease of use, touch screen systems are not difficult for computer novices to become familiar with, therefore aiding the efficiency of training. Touch screen interfaces are beneficial to people who have difficulty using other input devices because of some kind of disability. Used in conjunction on-screen keyboards they can help make computing resources more available to people who would otherwise have difficulty using computers.

## "ENGINEERING"-DEFINITIVE...WITHOUT A DEFINITION!!

M.Suudharshana (III year,EEE-B)

Words are powerful tools that shape the thoughts of all those who read them. Recently though, I have come to question this generally accepted statement. All thanks to keying in the word "engineering" into the search bar in Google. Within seconds, search results spewed out of the mega search engine, the sources ranging from formal and forthright ones like Wikipedia and Webster to colourful, creative (and meaningless!) blog forum answers. I felt like a glutton for punishment. I ask one little question, try to foster a teeny-weeny bit of curiosity (claimed to be an engineer's birthright) and I end up receiving a bunch of diverging answers. Apart from the shock that the world had no united front in deciding what exactly my role as a professional would be, I was disillusioned by the fact that words and definitions-the very tools that dictated my thought processes from my school days- had failed me this time. They just left me in a soup, wondering what exactly the world around would think of me when I introduced myself as an aspiring engineer. It was one of those rare moments of epiphany, where I could finally grasp what every eminent and leading engineer, whose speeches I had heard, were going on about. The fact that an engineer should first know why he/she is aspiring to be one. As UG students, most of my peers and I have chalked out a future plan-good internals and a good CGPA followed by a successful placement in a reputed establishment or an acceptance into a noted academic institution for a PG degree. Few others take the less trodden path and venture into new options. All these ultimately lead to one thing- a bright future. A future with good money and a good reputation as a professional. But during that process of growth, are we missing out on fostering the qualities that makes engineering an enjoyable profession? Sure, we do accumulate skills as we study. We do become better thinkers and analysts. However, throughout the 4 years of UG, we strive continuously towards achievements and trophies. There is a lot of effort that goes into marks and grades. But each subject we study is a research discipline in its own right. Put your head into it and a million questions will pop out. And then begins the quest for answers. In other words, our pursuit for grades ends up killing the curiosity that made us learn so much more effectively as kids. Going back to those definitions of engineering, there was one other word that I found often-"innovation". Thinking out of

the box, basically. A major facet of our degree involves engaging in projects and research paper publications. Areas where you could show the world alternative solutions to existing problems. Or, if you are a true genius, you would end up finding a problem in something that was apparently working fine! And then work on solutions (it would be foolproof- as far as plagiarism is concerned!). But a pursuit for Best Paper Awards and international publications makes the "innovation" take a back seat, as we tend to play safe and stick to established concepts in order to be understood and appreciated. Pursuit for "optimum solutions", has been the cause of ethical disputes too, because "optimal" solutions are not always fair to all those who are influenced by them. There is no word play needed here. As engineers, we are just thinkers who work to make things work better. Lectures by giants in the engineering field are often way out of scope for a UG student like me, who is taking baby steps into the field. But one thing they say is understandable now. I would just have to keep the kid in me alive, keep the curiosity and originality kicking. Like Steve Jobs said...just stay hungry and stay foolish. Then I could define engineering by myself!




# DESIGN

## -Aashish Nikhil Ghosh (III year, EEE-A)

With the way the world is changing, and the speed that it is taking, it has become impossible for society to produce a workforce with a discrete skill-set. The evolution of technology and the speed of change is so enormous that like old technology, discrete skill sets have now become obsolete in the forefront of innovation. And soon like technology from a decade back, it will become obsolete everywhere. What has become most important now, is to train people to view problems from many different perspectives, to have a diverse skill-set and an ability to learn new skills quickly and efficiently. Efficiently, in the sense that the individual must only take what they need and discard all other knowledge and information. They must have a flowing view of a problem from one perspective to the other. This is what design engineers do, they have no specialisation, and are instead trained to create products. They think of the product as a whole, with many different aspects that meld together.

Search for design engineering and one term you may come across is: Cradle to Grave engineering. It beautifully explains what design engineering is all about. Not burdened by the availability of only a single school of thought, they design a product and keep tuning it to meet new demands until the market for the product disappears.

A design engineer is even concerned with the appearance of a device as this is the first thing a possible customer will notice. An attractive product would garner more attention than a plain looking one.

This is why design engineers are so important. Imagine, hiring one very competent person, who is a design engineer or has design background, this means that one employee is able to handle the complete development of a given product. In the absence of the super brilliant people , hiring two people with a complimentary skill-set would be sufficient. Design engineering grants a holistic view of a product or project. In a world where multiple products keep surfacing all the time, the design background would allow very high productivity.

# Instincts

## -Prajay Raghu (III year, EEE-B)

There are a lot of wonderful things the human mind finds itself attached to. Work, love, people, success. Something that alludes to each one of the above factors is this phenomenon called Instincts. Instincts is where everybody puts in more energy than that is required to do it. It is more than just enthusiasm or excitement, it is passion, it is ambition that is materialized into action to put as much heart, mind, body and soul into making it the phenomenon it is.

Instincts is an event where memories are created. With an online following of over 60,000 with a footfall of 15,000 every year, these statistics speak for themselves when it comes to the magnitude of this cultural fest. Over 70 events were organized over three days that's replete with grandeur and celebrities. There are quite a few attractions that has become a part and parcel of Instincts. There's Élan which is an ethnic display of style and elegance. There's the

choreo night which was graced this year by the one and only Indian icon of dance, Prabhu Deva. There's also our popular pro-show which involves a combined concert of various artists and musicians prominent in the film industry. All this follows the grand inaugural which is usually graced by a popular celebrity. All this is in addition to the bike stunts, sky lanterns, short film contests, light music and dance events, etc. There is an adequate representation of every active club in college ranging from the Entrepreneurship Development Cell and the English Literary Club to the theatre club and quiz club of SSN through activities and events during Instincts.

One landmark that Instincts achieved, this year being the tenth version is that the safest cars in the world, Artemis Volvo stepped in as title sponsors for this edition. The cars were displayed and contests were conducted to engage the floating crowd.

The amazing stage, wonderful food stalls, the entertainment and the excited crowd have become the characteristics of Instincts. It is solely a student driven and a student run program, which is remarkable since it requires the concerted efforts of individuals, committees and teams which would ultimately result in the exorbitant grandeur that surrounds Instincts. Every batch gets exposed to various life skills through organizing and managing a three day extravaganza like Instincts.

The success of Instincts lies in the dedication of every student who wishes to etch his effort as an invincible shard of contribution that ultimately recreates Instincts in all its glory every year.

Nobody ever starts working where they want to be or with what they want to do at the beginning, but the vision and foresight coupled with the commitment and passion leads almost always to an incredible finish after three memorable days.

The immense passion with which everybody engages in the tumultuous workloads helps them get through obstacles, constraints and difficulties. Time recedes into the background because of the hard work as everybody goes about their work with the simple notion of giving back to the college in some way. Instincts is the perfect example of amazing work which may remain credited or uncredited, something that doesn't matter to those who worked behind it.

At the end of the three days, everyone is left with amazing memories and a close-knit group of friends who are almost like family after having survived the worst times and experienced the best of times simultaneously. For me personally, Instincts is something that is very close to my heart and is something that will always remain so.

## SYCon - Creating leaders, inspiring change

-Kiran Sudhir

The third edition of the annual SSN Youth Conference (SYCon) was conducted on 31 March 2015 at the Justice Pratap Singh Auditorium of SSN College of Engineering. SYCon is a one day event organized by SSN Lakshya, the Entrepreneurship Development Cell of SSN, where prominent personalities from various fields are invited to deliver 20 minute talks on diverse topics. Upon entering the auditorium, the members of the audience were left awe-struck by the breathtaking stage setup. Quite literally, the stage was beautifully set for the spectacular show ahead. The first speaker for the day was Commodore Shekar, a retired submariner in the Indian Navy. In his speech, he highlighted the shortcomings in the army and the need for combining technology with leadership to produce indigenous designs in the defense industry. The next speaker was Lakshmi Potluri, co-founder of Jabong, who spoke about the need for

passion for success and how there is no fixed formula to succeed. The famous fashion designer, Vivek Karunakaran spoke next and he highlighted the importance of carrying oneself well while also urging everyone not to hesitate from picking up the crayons they once put down as children. This was followed by an interactive panel discussion session where the three speakers answered questions from the audience moderated by the compere, Gibran Osman. After a short break that followed, the event advanced with Pradeep Kumar, renowned playback singer and founder of Poorvaa Productions who took us through some meaningful poems written years ago by Saint Arunagirinathar and narrated his journey from Trichi to Boston to Chennai. Following him was Arun Krishnamurthy, who quit his job at Google to help the environment through the organization he started, Environmentalist Foundation of India. In his speech which served as an eye-opener for several members of the audience, he spoke about the ignorance of the residents of Chennai and their arrogant disregard for the environment. He even went on to refuse applause stating that he would prefer hands that rise up to volunteer instead. As a contrast, the next speaker, Dr. Arjun Rajagopal, director and trustee of Sundaram Medical Foundation, provided a surprisingly jocose talk on the disintermediation and the revolution in the medical industry due to technology. Despite of describing himself to be a 'fossil', he provided constant entertainment to the young audience through his wit. There was then another panel discussion followed by the lunch break. The show resumed with Staccato, a Chennai based fusion band that had performed at the London Olympics 2012. They showcased their interpretation of South Indian Carnatic music drawing from influences from all over the world. They then took the audience through a journey of nostalgia by playing old hit compositions of AR Rahman and Ilayaraja. The penultimate speaker for the day was M. Mahadevan, the man behind Copper Chimney, French loaf, Wang's kitchen and several other successful restaurants worldwide. He traced his adventure from having just 400 rupees when he first started out, to now employing around 4000 people in 24 countries. He highlighted the power of innovation by recounting that in his quest to innovate, he added chicken curry to the humble croissant and sold it in his bakery in Paris for which people queued up every day. He ended by emphasizing that the ultimate goal of any entrepreneur should be to give back to society. The final speaker for the event was Mr. Rajendran Danapani, the man behind ZOHO and its innovative apps in Chennai. He focused on context based education and the need for reforms in the Indian education system and spoke about how ZOHO was doing its bit to contribute to improvement in that front. The event concluded with the final panel discussion session, following which a blanket of gloom started to settle on the audience when they realized that this unique experience was coming to a close, ensuring a positive hangover for days to come. SYCon 2015 was a tidal wave, bringing us speakers from diverse fields and infusing life and inspiration into our morose and mundane routines.

# Internship

-M.Vignesh (III year, EEE-B)

ABOUT THE INTERNSHIP

The Mitacs Globalink Research Internship is a competitive initiative for international undergraduates from Brazil, China, India, Mexico, Saudi Arabia, Turkey and Vietnam. From May to September of each year, top-ranked applicants participate in this research internship under the supervision of Canadian university faculty members in a variety of academic disciplines, from science, engineering and mathematics to the humanities and social sciences.

WHEN TO APPLY?

Every year,The last date for receipt of applications is usually around the end of September.

WHO CAN APPLY?

Globalink Research Internships are open to students at accredited universities in the following partner countries:

Brazil | China | France | India | Mexico | Saudi Arabia | Turkey | Vietnam

Applicants must:

- Be enrolled in full-time undergraduate or combined undergraduate/Master's programs
- Have a minimum of one semester and a maximum of three semesters remaining in their program.

- Meet the grade requirements for their country of study: India: CGPA- 8/10

HOW TO APPLY?

You will be required to create a personal user account on the Student Platform at the MITACS Official Website. Do not create two profiles; your application may be processed incorrectly.

Once you are logged on, you can begin your application and start applying to research projects. You will be able to save your work and return to it later to add more information and any documents that you need to upload.

Applications will be assessed only after the application deadline.

DECLERATION OF RESULTS

Information of selection along with concurrence of the guide will be dispatched in two slots. The first slot results will be available in the month of December and second slot will be available by January. All selected students will receive an official e-mail confirmation about their selection.

*M.Vignesh is selected for MITACS Internship, 2015

# Alumni Talk

-Adwaith (CMU)

Getting into a good masters course at a renowned institution influences the confidence of a student more than anything. Especially when grades were pretty average. As John Nash puts it "every problem has more than one solution", it certainly seemed true in my case. Thanks to my professors at SSN, with their teaching, a few publications and conferences compensated for the 'so called high GPA'. On getting the admit and on meeting people, all the accolades made me feel good about doing 'something' productive in the last four years. And of course, the thought that I would be going to one of the top universities did make me feel good about myself. The feeling that 'after the next one and a half years, my life is set' sort of got into me! But, what would take to get through the next one and a half years in a productive manner, is something that certainly hasn't been all that comforting! Blah blah blah… basically, my CGPA wasn't great and to bail myself out, wrote a couple of papers, got an admit from a decent place, and I was excited about it!

On reaching here, one of the most intimidating things which I came across was when many of the other students introduced themselves to be from universities like MIT, Princeton and Stanford. Initially the thought of competing against such students did imbibe a sense of fear as well as a feeling of being a misfit. However, my view towards 'competition' changed gradually over time. It was no more about grades or who makes the toppers list or for the matter of fact, who took the best/toughest courses. What tends to matter the most was the knowledge possessed. At the end of the day, its about application of that knowledge. After switching so many schools, getting used to this-environment and culture wasn't much of a deal but I did observe that it made some of them reserved and contain themselves. But as a fact, CMU is populated the most by the Chinese and the Indians. You could expect to bump into one of them as the every third person you meet. When classes commenced, I was advised by seniors and cousins that you should never make a team with people from the same country, else professionalism would be lost. I did not realize that, and since there was a natural tendency to first interact with those from a similar background, my group members in a particular course were Indians too. Well, no offense meant, but with time and with the course load building up gradually for everyone, there were often texts exchanged reading "I have some work now, can you manage it this week please". Being a group project and knowing them personally, you couldn't really deny but to put in that extra time in compensating for the absence of another. This became a habit and eventually there was a scapegoat in the team who would end up doing all the work. I would probably give the same suggestion to all those coming over for their masters or have plans of doing it down the line, "never team up with people from the same place". More often than not, it will not end too well! Sleep! Ah yes, something which has been void in life for the past five months! So, after a month of classes, everyone would be like 'there was a decent amount of work, I got to sleep for almost 8 hours everyday!'. And then, after two months, 'dude, this month is killing man, I probably slept for just six hours on most days'. The final month of the semester, and you would end up meeting someone who's

like 'I'm so happy dude, I got to sleep for 5 whole hours last night!' and overjoyed about it, not to mention that he'll soon be unhappy getting back to a 4 hour sleep cycle! And gradually, you would find yourself to be making night-outs with liters of coffee and red bull by your side to keep you going all night long. There have been several weeks where you would find yourself not budging away from the laptop even for a minute, from 11am to the next day morning 8am, sleeping for the next 3 hours and repeating the same till the submission is done. Initially, I used to find such a routine terrifying and felt 'there is no way I'm going to be doing this', but with friends around and working in company of peers will definitely keep you going. More than it being a strenuous regime, you would have those little moments of fun and laughter with friends around, that half hour coffee break or that half hour counter strike on 42 inch screens at 4 in the morning!

Amidst all this ruckus, being independent is probably one of the biggest tests when you do your masters. To be able to manage the household as well the coursework is something which all of us would become an expert at towards the end of the course. I've never done so much planning in my entire life till now! Right from the time you wake up (after the 4 hours of sleep you get ;)) till you shut your eyes, 'what should I do for breakfast', 'should I eat at home or on campus', 'how much can I spend today', etc etc. Although after a point of time, you lose track and end up skipping meals or eating out. On top of this, promptly paying monthly bills certainly does not let you spend time off studies in peace! Despite all this work, having some time off from such a schedule at least once a week (probably the maximum you can afford) is definitely mandatory. Whether it is catching up on sleep, or hitting the bar, or exercising by playing a sport or gymming, is definitely mandatory! This reminds me of a friend here who would not do anything at all on Sundays, no matter what. Even if there were a hundred submissions that day, he would just not do it. It seemed ridiculous at first, but in the end seemed logical. That period of rest always feels blissful but at the end of it, the thought of getting back to routine is like a kid crying to go back to school! I sometimes used to wonder why it is taking so much time for us to get work done here. There used to be thoughts like 'did I never have work in my undergrad? Why was I so laid back?'. Four years of undergrad at SSN seemed like heaven and jobless when compared to the situation right now! Thinking of it, when the professor issued an assignment in undergrad, most cases than not, either a few 'sincere' ones in class (which never fails to go extinct each year) would complete it ahead of the deadline and others would follow suit using his answers, or there would be books by the god of students, Bakshi, to pick out answers from! And within a couple of hours, our assignments would be done and we would get scores for it as well. But, plagiarism is treated as a serious offense here. Even if a single word was copied from a source, and when found guilty, the student receives a fail grade instantaneously and is debarred from the course for the semester. When the level of assignments are of high difficulty, it certainly demands that the student learn and acquires a thorough understanding of the subject before proceeding with the assignment. From a period where the professors and parents used to push us to complete our work (it happened even till the end of undergrad), and we being reluctant about it, knowing that we would eventually get our marks, its come down to a point where you realize that 'if you don't work, your life is going to be screwed up!'. It could probably be the peer pressure around us as well as increase in our maturity levels. With people around you being thoroughly involved into their work, you would definitely feel lagging back if you didn't. Also, when you know that if you don't do well in your course, you're probably not going get a job, in turn messing up your visa status in the country and eventually heading back home after literally dumping all that cash. I've often heard that doing masters in USA will get you settled. After spending the last eight months here, I can assert that life here is not a bed of roses. In reality, it is just the opportunity and the exposure that is provided, but utilizing it to the maximum is the student's responsibility. By now, I presume, after reading everything above, pursuing masters looks tedious and dreadful and killing. But at the end of the day, one has to put in that effort at some point in his life. The sooner the better! The earlier you get trained to handle such pressure, the more seamless would be the transition in a new environment. At the end of the day, one can put up with such schedules only if he/she likes what they do. Being forced, will just not help! There have been many days when I have thought if this is what I wanted to do all my life, and had I worked for a couple of years, irrespective of the industry, I would've had a better idea on what I would've loved to do the most. But certainly no regrets, as even if there was 1% of it, I wouldn't have been able to survive it so long. There is always the thought of 'will this help me, why am I stressing myself out so much', but in the end, who would not want to get a job that you like to be doing, especially when you're getting paid almost seventy lakhs a year and getting a global recognition!! Therefore, unless you're 100% sure of what you want to be doing for the next 40 years, do not rush yourself into things just because you will be losing a couple of years early in your career. Best of luck to all my friends in SSN, and enjoy the rest of the stay there as those four years were something that I wish would come again even now!

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