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REDEEM

QUARTERLY NEWSLETTER

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

SSN COLLEGE OF ENGINEERING

From HoD's Desk

Current academic year (2015-16) has been a year of steady growth and success for our Department. Mr. P.Saravanan received a DST project entitled "Design and Development of Axial Flux Switched Reluctance Motor based Battery operated Vehicle" worth of 45 Lakh with a seed money of Rs 5.5 Lakh. Dr. R. Rengaraj secured a consultancy project entitled "Performance Improvement of High speed Extrusion and rewinding lines for Wires and Cables" worth of 4 Lakh from Siechem Technologies Pvt Ltd, Pondicherry. Dr. V. Rajini has successfully completed the installation work of 1.5kW windmill erection in the EEE block. Dr. N. Pandiarajan has successfully completed the reorientation of 10KW solar roof top power plant. Dr. R. Seyezhai has successfully completed the solar car project. My appreciation to all of them.

Congratulations to Hamsa Zagriya, Hasha Vardhini, Dharani,final year students,who have received ISTE-Manakula Vinayagar Award for best student project.

I wish to thank and appreciate all the faculty members and the students who have contributed to the progress of our Department.

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Preface

Intelligence is about ability to think and solve problem and make decision and quick adaptation. But we never solved problems other than example problems. We have fear to unknown not logics. Human intelligence is largely affected by one's inner development and the current state of being. Depth of reason is the essence of wisdom. We live in high level of insecurity as our own success is not defined by us and we outsource it to people around. The way you perceive the world and people around is based on several factors. Every factor has its own healing period. Irrespective of whatever we know and whatever we read, we follow our default habits when we are in critical situations. How to change the default habits? Like learning to drive car we need to go through various stages till it becomes default. There is no point in winning without experiencing the risk of failure. Some of the early life success is a curse as it makes you to have dangerous assumptions. When we are aware and utterly honest with our feelings, the root cause of the feeling will uproot itself and vanish and we can be totally relieved from the issues which are bothering us. As we directly experience this more and more we become better and better and become more centred and eventually find the inner strength. We come to terms with some of our fears, shedding some of our rigidity, resistance to change, and arriving at a greater sense of peace with 'not knowing'. We feel free, lighter, less encumbered by the dead weight of the past, old opinions and beliefs. If we are happy we are less judgemental about others. Lack of love, self-expression and self-discovery leads to shaky life. But it's one thing to intellectually 'know' the right answers and another thing to live them. We need to find our own path that could help us to make that shift from the cerebral to the experiential.

We can't do big things without feeling stressed. As long as we are not clear about what we are going to do and do not know how to take measured steps, conflict and conflicts are the way of life. Often it is lonely battle with self as we cannot reveal many things to others. Once we lose your creativity, fear creeps in, as most of us have baby mind. Like every happy things in life research is painful happy process. May be those with good schooling with strong educational background are exceptions. Students with state board syllabus are well trained to not to think out of box. Moreover we are more into promotion than the profession. If we never push ourselves we might be able to avoid stress for a while but life finds a way to push us to realize our potentials causing growth and change which are inherent stressors. So it is not about avoiding stress but to take stress and turn into fuel, finding inspiration and satisfaction in achieving goals. Feeling restlessness always leads to improvement. It is about process of transforming one kind of energy – stress, anxiety and tensions into another – determination, steadiness and faith. We can see the highest emotions of the players and coaches after a goal in football game which you can't see in any other game. We just don't want to put off feeling peace until we achieve our goals because our goals are big and it take a while to realize and when we do achieve them we will take another bigger goal. So we have to learn to feel a sense of peace while striving our best otherwise we lose many things in our lives, like many sacrifice family he in life by the time they finish the research as they could not spare time. Due to lack of will, skill and skull, the supposed to be happiest things in life turn into disastrous. Even default things become difficult. If cognitive intelligence is about thinking and emotional intelligence is about feeling, then spiritual intelligence is about *being*. In a holistic view of life, we are creatures with a mind, a body, and a spirit—all interconnected and arranged in a pattern that means that the whole is greater than the sum of the parts. In the same way we can look at our intelligence. If our education were more holistic, we

would learn to balance our intellect with our emotional and spiritual growth to feel the sense of peace all the time.

Third International Conference on Electrical Energy Systems ICEES 2016

Conference Report

The 3rd International Conference on Electrical Energy Systems ICEES 2016 was organised by the department during March 17-19, 2016. The Conference provided a platform for academicians, researchers and industrial professional engineers to present their research findings and developmental activities in the broad area of Electrical Energy Systems. The conference had attracted a total of 150 papers from various institutions and Industries all over the world. The technical committee recommended 90 papers for the presentation, out of which 75 papers have been registered. There were totally three keynote addresses and four invited talks presented in this conference by renowned professors and Industrial experts. There were six technical paper presentation sessions covering the conference theme and spread over three days of this conference.

Keynote Speakers

1. Dr. Prahlad Vadakkepat, National University of Singapore, Singapore
2. Dr. Jayashri Ravishankar, University of New South Wales, Sydney, Australia
3. Dr. Paramasivam Shanmugam, Danfoss India, Chennai

Invited Speakers

1. Dr. Mohan Lal Kolhe, University of Agder, Norway
2. Dr. R. Velraj, Anna University, Chennai

3. Dr. P. Somasundaram, Anna University, Chennai

Conference Chair

Dr.V.Kamaraj

Dr.R.Arumugam

Organizing Chair

Dr.R.Rengaraj

Dr.M.Balaji

Dr.N.B.Muthuselvan

Journal Publications

Dr. Ranganath Muthu (Prof/EEE) ,Dr K Sathiyanarayanan, Dr. S P Natarajan, & Dr. C R Balamurugan, published a paper titled 'Analysis of Various PWM Strategies of Binary DC Source Multilevel Inverter Fed Universal Motor Load', International Journal of Multidisciplinary Educational Research, Vol. 5, No. 2, February 2016.

Dr. R Seyezhai and Pridhivi Prasanth (Research Assistant) published a paper titled, " Investigation of Four Phase Interleaved Boost Converter Under Open Loop and Closed Loop Control Schemes for Battery Charging Applications" in International Journal of Advances in Materials Science and Engineering (IJAMSE), January 2016, Vol.5, No: 1, ISSN :2201-2311.

Dr. R Seyezhai (ASSP/EEE) and V.Aarthi (Passed out PG Students) published a paper titled, "Investigation of Interleaved Boost Converter with Voltage multiplier for PV with Fuzzy MPPT" in Electrical & Computer Engineering: An International Journal (ECIJ), March 2016, Volume 5, Number 1, ISSN :2201-5957.

Dr. V Rajini (Prof./EEE) and Abitha Memala W, published a paper titled" Information Theoretic Criteria for induction motor fault identification" in Indian Journal of Science and Technology, Vol 8(30), DOI: 10.17485/ijst/2015/v8i30/70494, ISSN (Print) : 0974-6846 , ISSN (Online) : 0974-5645 (Annexure II)

Chapter Contribution to Books

Book Chapter - V.Rajini (Prof /EEE), Dr. R Deepalaxmi (ASSP/EEE) contributed " Radiation Effects in Materials", ISBN 978-953-51-4718-3(accepted for publication)

Dr. R Seyezhai, (ASSP/EEE) and A Bharathi Sankar (Research Scholar) contributed a Chapter titled, "Multilevel Inverters for BLDC Drives" in the book "Advances in Control and Mechatronics Systems", Vol.1, United Scholars Publication, USA, Jan 2016, ISBN -13: 978-0692623978.

Paper Presentation

Dr. V Kamaraj (HoD & Prof./EEE) and Mr. V S Nagarajan (AP/EEE) presented a paper titled, " Best practices for Quality Assurance in Engineering Education", at 45th ISTE annual convention and International Conference on " Challenges & Opportunities in Technical Education in the Era of Sustainable Development " held at Amravati, Maharashtra, India

Dr. U Shajith Ali, (ASSP/ EEE), D V Veeraraghavulu, M Niveditha, N Priyadharshini, P Sandhiya (Final Year EEE Students) presented a paper titled "Stateflow based Incremental Conductance MPPT of a Photovoltaic System using Z – Source DC – DC Converter" in Biennial International Conference on Power and Energy Systems "Towards Sustainable Energy" (PESTSE) at Amrita University, Bangalore. (This will be archived in IEEE Xplore)

Dr. R Seyezhai , (ASSP/EEE) presented a paper titled, "Design and Simulation of Fuel Cell Based High Gain Interleaved Boost Converter" in the International Conference on Innovation in Engineering Science and Management, ICIESM 2016, New Delhi.

Dr. R Seyezhai , (ASSP/EEE) and M Sudhakaran (Research Scholar) presented a paper titled, "Design and Simulation of Single-phase Trinary Multilevel Inverter for Photovoltaic Applications", International Conference on Reserach design and Development in Engineering Management and Sciences held at Gt Kalol Institute of Technology and Research Center, Kalol, Gujarat.

Dr. R Seyezhai (ASSP/EEE) presented the research activities in the Energy Researcher's Meet held at SSNRC.

Dr. R Ramaprabha (ASSP/EEE) has presented her research activities and roadmap on 28.01.2016 at SSN Research center in Energy Researchers meeting.

Dr. R Seyezhai , (ASSP/EEE) and P Vaishnavi (passed out PG Student) presented a paper titled, "Simulation of Three-phase Seven-level Inverter with reduced number of Switches for BLDC Drive" in the Technical Symposium on Emerging Technologies at G.L.Bajaj Institute of Technology and Management, Greater Noida.

Dr. U Shajith Ali (ASSP/EEE), D V Veeraraghavulu, M. Niveditha, N. Priyadharshini, P Sandhiya (Final Year EEE Students) presented the project titled "Super capacitor based hybrid energy storage system for standalone PV" in the meeting for Innovation centre at Crystal Growth Centre with Prof. Idichandy.

Ajay Rangan, Aashish Ghosh, Nikhil Mathai Thomas,Dr. V Rajini (Prof/EEE) presented a paper titled," A novel integrated converter system for Alternative street lighting" in the 2nd international conference on Intelligent computing applications ICICA- 2015 at KCG College of Engg . This paper won the best paper award

The following full-time PhD scholars under the guidance of Dr. R. Ramaprabha (ASSP/EEE) presented their papers in SSN Doctorate Scholars Day held on 25.02.2016.
Ms. M Venmathi presented the paper titled “A Unified approach to interface 500 W stand-alone photovoltaic system using Four-port SEPIC/ZETA DC-DC Converter” – Poster presentation

Ms. M Vijayalakshmi presented the paper titled “Performance Analysis of Permanent Magnet Brushless DC Motor in Energy Storage Applications” –Oral presentation

Ms. S P Chitra presented the paper titled “Development of Standalone Modular Interactive Solar Photovoltaic System” –Poster presentation

Ms. G Ramya presented the paper titled “Analysis of Photovoltaic Interfaced Modular Multilevel Converter With Variable Switching Frequency” –Oral presentation

S Harini, A Chandra Ganeshan and K Nanditha (IV year UG Students) guided by Dr. R Ramaprabha (ASSP/EEE) presented their published (International Journal of Applied Engineering Research (IJAER), (Print ISSN 0973-4562, Online ISSN 1087-1090), Special Issue Vol. 10, No. 9, pp. 8796-8799 , April 2015. SJR Impact factor 0.13) paper titled, “Design and Modelling of Pulse Generation for DC-Link Inverter Drive for Brushless DC Motor” in UG student’s Presentation forum at Central seminar call, SSNCE on 19.02.2016.

Ms. D Umarani(AP/EEE), presented a paper titled “Comparison of various Z-Source Inverter Impedance Networks using 2ω Ripple Analysis” at 2nd International Conference on Advanced Engineering and Technology for Sustainable Development (ICAETSD 2016) organized by Karpagam College of Engineering , Coimbatore on 19-20,Feb-2016.

Dr. R Seyezhai, (ASSP/EEE) and A Bharathi Sankar (Full-time Scholar), Prithvi Prashanth (Research Assistant)presented a paper titled, "Simulation and Implementation of Solar Powered Electric Vehicle" in the Second International Conference on Advanced Engineering and Technology for Sustainable Development , ICAETSD2016 at Karpagam College of Engineering, Coimbatore.

Dr.R.Seyezhai, (ASSP/EEE) and N.Hemalatha (Research Scholar) presented a paper titled, "Comparative study of PV connected Three-phase Diode Assisted and Modified Diode Assisted Extended Boost Quasi Z-source Inverter", in the Second International Conference on Advanced Engineering and Technology for Sustainable Development, ICAETSD2016 at Karpagam College of Engineering, Coimbatore.

Dr. R Seyezhai, (ASSP/EEE) and A.Bharathi Sankar (Full-time Scholar) presented a paper titled, "Simulation and Implementation of FPGA based Three-phase BLDC drive" in the International Conference on Emerging Novelties and Vistas in Space Technologies and Applications, ENVISTA 2016 at Sathyabama University, Chennai.

Dr. R Ramaprabha (ASSP/EEE) has presented her research activities and roadmap on 01.03.2016 at SSN Research center in the presence of Dr. Barua.

Dr. U Shajith Ali, (ASSP/EEE) participated and presented a paper titled "Z-H Converter Based Photovoltaic Power Conditioning System" in TEQIP-II Sponsored International

Conference on Energy, Environment and Engineering in Coimbatore Institute of Technology, Coimbatore during 29th Feb - 2nd March 2016.

Ms. Alagu Dheeraj (AP/EEE) and Dr. V. Rajini (Prof/EEE) presented paper on "INTERLEAVED CENTER CLAMP FORWARD (ICCFC) CONVERTER FOR MICROPROCESSORS" in Global Conference on Renewable Energy, organized by NIT, Patna and World Energy and Environment Technology(WEENTECH), United Kingdom

Dr. V Rajini (Prof/EEE), Margaret Jaff, presented paper titled " Implementation of PIC based hybrid converter for hybrid stand alone system " in Global conference on renewable energy GCRE at NIT Patna, March 4,5,6, 2016

Dr. K N Dinesh Babu, Dr. R. Ramaprabha (ASSP/EEE), Dr. V. Rajini and Mr. V. Nagarajan presented a paper titled "A Case Study on REF Low Impedance IED Mal Operation" at the 6th IEEE International Conference on Power Systems (ICPS 2016) at Indian Institute of Technology Delhi and India Habitat Centre, New Delhi, India during March 4-6, 2016.

Ms.S Malathy (AP/EEE) and Dr. R Ramaprabha (ASSP/EEE) presented a paper titled "A New Single Phase Multilevel Inverter Topology with Reduced Number of Switches "at the 3rd International Conference on Electrical Energy Systems (ICEES) 2016 at SSN College of Engineering, Kalavakkam, India during March 17-19, 2016.

Reviews

Dr Mrunal Deshpande ASSP/EEE reviewed a paper for science publications Australia.

Dr.V Rajini (Prof/EEE), reviewed a paper titled "Common-Mode Voltage Injection based Nearest Level Modulation with Loss Reduction for Modular Multilevel Converters (MMCs) Reliability Evaluation of VSC-MTDC Integrated Offshore Wind Plants" for IET RPG

S Malathy AP/EEE Reviewed 9 papers for the international conference ICEES 2016

Dr. Mrunal Deshpande (ASSP/EEE) reviewed a paper for the international conference ICEES 2016

Ms. S Malathy AP/EEE Reviewed a paper for the journal Renewable and Sustainable Energy Reviews

Dr. R Ramaprabha (ASSP/EEE.) reviewed a paper for International Journal of Photo energy, Hindawi Publications.

Dr. Ashwin Kumar Sahoo (Prof/EEE), has reviewed a research paper for "International Journal of Ambient Energy", Taylor & Francis group,UK

Dr. Ashwin Kumar Sahoo (Prof/EEE), has reviewed a research paper for "International Journal of Power and Energy conversion",

Meetings

Dr. R Ramaprabha (ASSP/EEE) conducted confirmation meeting for the part-time PhD candidate Ms. S. Malathy (AP) on 07.01.2016.

Dr. R Ramaprabha (ASSP/EEE) conducted confirmation meeting for the part-time PhD candidate Ms. S. Lakshmi (AP/EEE/Peri Institute of Technology) on 08.01.2016.

Dr. R Ramaprabha (ASSP/EEE) conducted confirmation meeting for the full-time PhD candidate Ms. G. Ramya (JRF, SSNCE) on 08.01.2016.

Dr. R Ramaprabha (ASSP/EEE) conducted confirmation meeting for the full-time PhD candidates Ms. SP. Chitra (JRF, SSNCE) and Ms. M. Vijayalakshmi (DST Wos A funded candidate) on 22.01.2016.

Dr. R Ramaprabha (ASSP/EEE) conducted synopsis meeting for the full-time PhD candidate Ms. M. Venmathi (JRF, SSNCE) on 29.01.2016.

IEEE Student Branch office bearers attended IMRB Survey meeting held on 05.02.2016 at Central library, SSNCE.

Dr. R Ramaprabha (ASSP/EEE) attended Anna University Doctoral committee meeting at SSNCE on 18.02.2016 as DC member.

Dr. R Ramaprabha (ASSP/EEE) attended Anna University Doctoral committee meeting at Rajalaksmi Engineering College, Chennai on 18.02.2016 as DC member.

Dr. R Seyezhai, (ASSP/EEE) attended a Doctoral Committee Meeting at SSNCE .

Dr. R Seyezhai, (ASSP/EEE) attended a Doctoral committee meeting at Sri Sastha Institute of Technology, Chennai.

Dr. R Seyezhai , (ASSP/EEE) attended the Capacity Building Programme for Business Incubation at VIT-TBI, Vellore.

Dr. R Ramaprabha (ASSP/EEE.) attended DC meeting at Dr. M. G. R. Educational and Research Institute University, Chennai on 09.01.2016.

Workshops/Guest Lectures

Dr. Ranganath Muthu (Prof/EEE) & Mr. A Balasubramanian (AP/EEE) conducted the Anna University Faculty Development Training Programme (FDTP) on ‘Advanced Control System’. Seventeen (17) participants attended the FDTP. The lectures were delivered by many Experts from Anna University:

External Experts

Dr. B Umamaheswari, (Prof./ EEE) & Chairperson Electrical Engineering, Anna University, Chennai – 600025. Topics: Overview of the subject and State Variable Analysis

Dr. S Sutha, (AP/IE), MIT Campus, Anna University, Topic: State Variable Design

Ms. D Kalpana,(AP/IE), MIT Campus, Anna University, Topic: Phase Plane Analysis

Dr. T Thyagarajan, (Prof./EEE), MIT Campus, Anna University & Director, CUIC, Anna University Topics: Pedagogical Approaches for Control Engineering Teaching and Research & Describing Function Analysis

Dr. N Pappa, (AP/IE), MIT Campus, Anna University & Director, CUIC, Anna University, Topic: Optimal Control

Dr. J Prakash, (Prof. & Head, IE), MIT Campus, Anna University, Topic: Optimal Estimation

Internal Faculty - Coordinators

Dr. Ranganath Muthu, (Prof./EEE) Topics: Phase Plane Analysis, Describing Function Analysis Simulation using MATLAB, Phase Variable Analysis & Describing Function Analysis,

Mr. A Balasubramanian, (AP/EEE), Topics: State Variable Control and Design Simulation with MATLAB, Optimal Control & Optimal Estimation

Ms. S Malathy (AP/EEE) Attended faculty development program on Advance Control Systems in SSN College of Engineering

Ms. Alagu Dheeraj (AP/EEE) participated in AU-FDTP on IC6601 Advanced Control Systems Conducted by EEE Department at SSNCE

SSN IEEE Student Branch and ISTE jointly arranged a program on “Awareness of DRDO and Its Products & Job opportunities in DRDO”. The program was led by Shri. M. Dhanabal, Scientist E, CVRD, DRDO, Avadi, Chennai on 08.03.2016. He presented about DRDO products & job opportunities for an hour. Around 200 students were benefited. Models of DRDO defense products were displayed in open vehicle near college administrative block. The coordinators are Dr. V. Kamaraj (Head/EEE), Dr. R. Ramaprabha

(Asso. Prof.) & Mr. Gadapalli Sai Krishna Dileep (IV year) of EEE department

Dr. R Ramaprabha (ASSP/EEE) has attended the Anna University Faculty Development Training Programme (AU-FDTP) on IC6601 – Advanced Control System held during Jan 18-25, 2016 at SSN College of Engineering.

Dr. R Ramaprabha (ASSP/EEE) and Ms. S. Malathy (AP/EEE) arranged a guest lecture on "Resonant Converters" for the benefit of the students of EEE under the banner of SSN IEEE Student Branch on 18.02.2016 from 10.00 am to 11.30 am. The resource person is Dr. M Prabhakar, (AP/ SELECT-VIT, Chennai campus). The number of participants was around 20.

Dr. R Seyezhai, (ASSP/EEE) delivered a Lecture on "PSIM for Power Converters " and handled the hands on session on PSIM in the National Workshop on, "PSPICE and PSIM" at SSNCE.

Dr. Mrunal Deshpande (ASSP/EEE), Ms. Alaghudheeraj (AP/EEE), Ms. S Malathy (AP/EEE) and Ms. Umarani (AP/EEE) attended one day workshop on " Hands on workshop on Pspice and Psim" conducted by EEE department of SSNCE.

Department of EEE organized one day workshop on "Hands-on Workshop on PSpice and PSim" on Feb 20, 2016.

Dr. R Seyezhai, (ASSP/EEE) delivered a Lecture on "PSIM for Power Converters " and handled the hands on session on PSIM in the National Workshop on, "PSPICE and PSIM" at SSNCE. Conveners: Dr. V Kamaraj (Prof. & HoD/EEE), Dr. R Seyezhai (ASSP/EEE), Dr. R Ramaprabha (ASSP/EEE), Dr. Ranganath Muthu (Prof./EEE)

Number of Participants: 21

Sessions & Speakers: 2 sessions/day

Session I: Hands-on Practice using PSpice by Dr. R Ramaprabha

Session II: Hands-on Practice using PSpice by Dr. R Seyezhai

Dr. M Balaji, (ASSP/EEE) ,delivered a Guest Lecture on "Introduction to MagNet" at Anand Institute of Higher Technology

Dr. Mrunal Deshpande (ASSP/EEE) and Ms. Anitha Roseline (AP/EEE) attended one day workshop on Modeling and simulation of Mechanical systems using MATLAB and Simulink conducted by Mathworks at Chennai.

Dr. R Seyezhai, (ASSP/EEE) delivered a Lecture on, "Research Opportunities in Solar Photovoltaic Systems" at SRM University, Chennai.

Dr. R Ramaprabha (ASSP/EEE) and Ms. S Malathy (AP/EEE) arranged a guest lecture on “Power System Protection Application in Smart Grid Systems” for the benefit of the students of EEE under the banner of SSN IEEE Student Branch on 27.02.2016 from 10.00 am to 12.30 pm. The resource person is Dr. K N Dinesh Babu, Lead Application Engineer, General Electric, Chennai. The number of participants is around 140.

Electrofocus 2016, a national level symposium was organized by the Electronics Engineers Association of Madras Institute of Technology, Chennai on 26th and 27th March 2016. Eight students of II year EEE participated in the Quadbot making workshop. The workshop mainly aimed at giving a hands-on experience to the students in using the microcontroller modules along with servo motor and bluetooth control. The basics of Arduino, and working of the servo motors were taught on the first day. The construction and fixing of the Quadbot along with fine tuning the bot to work perfectly were done on the second day. The students had a wonderful time learning and controlling their robots to walk from their mobile phones. Members of Aerobotix, Chennai conducted the workshop and supplied the kits to the students. The students were also given a demo of 3D Printing by printing a keychain.

Project Work

The project titled “Design of a Multi-color Pen Using Sunlight” by P. Arjun and B. V. Arjun (II Year EEE A Students) under the guidance of Dr. R. Ramaprabha has been shortlisted for Innovation Center project and they had technical discussion with Prof. V. D. Idichandy on 05.02.2016.

Dr. R Seyezhai, ASSP/EEE and UG/PG Project students batch attended the meeting regarding their project selected for the SSN Innovation Centre with Dr.Idichandy at SSNCE.

The project titled “Design and development of long duration impulse current generator ” by C.Preethi, V Preethi and R Priyadharshini (IVYear EEE B Students) under the

guidance of Dr. R. Deepalaxmi has been shortlisted for Innovation Center project and they had technical discussion with Prof. V D Idichandy on 05.02.2016.

Funds

Dr. V Rajini (Prof./EEE), received the second instalment of MNRE fund - Rs. 8.64 lakhs

Dr. R Rengaraj (ASSP/EEE), received consultancy work worth Rs 4 Lakhs titled "Performance Improvement of High Speed Extrusion and Re-winding Lines for Wires and Cables" from Siechem Technologies Pvt Ltd, Pondicherry

P. Saravanan AP/EEE, received a seed money of Rs. 5.5 Lakhs towards the proposal titled, "Design and development of Axial Flux Switched Reluctance Motor based Battery Operated Vehicle ", worth of Rs. 43 Lakhs from DST-SERB, during April 2016

Other Activities

Dr. R Ramaprabha (ASSP/EEE), Ms. S Malathy (AP/EEE) and Dr. M Balaji (ASSP/EEE) prepared (EEE department data) Framework data for National Institutional Ranking submission.

Dr. V Rajini (Prof./EEE) Successfully uploaded the college data for NIRF ranking

Dr. R Ramaprabha (ASSP/EEE) has attended the Anna University Faculty Development Training Programme (AU-FDTP) on IC6601 – Advanced Control System held during Jan 18-25, 2016 at SSN College of Engineering.

Dr.V.Rajini Submitted the final data for NIRF ranking

Dr. R Seyezhai (ASSP/EEE) inaugurated the IEEE PELS Students Chapter at Karunya University, Coimbatore and delivered the inaugural address.

Dr. R Seyezhai (ASSP/EEE) delivered an Invited Lecture on "Introduction to Electric Drives" in the National Workshop on Control of Electric Drives with Advanced Power Converters at Karunya University, Coimbatore.

Dr. Ranganath Muthu (Prof./EEE) went as an External Examiner for the Ph.D. Viva-Voce Examination of Mr. P C Unnikrishnan titled Certain Investigations on Nonlinear Level Controller using Artificial Neural Networks and Reinforcement Learning' at Karpagam University, Coimbatore

Dr. V Rajani (Prof./EEE) Resubmitted the NIRF data to NBA . The hard copy of the same is also submitted to NIRF as per their request

Dr. V Rajini (Prof./EEE) Presented the progress of her research work Energy researchers meet

Dr.V.Rajini (Prof./EEE) conducted second round of Mock accreditation at Anand institute of higher technology

Dr. N B Muthu Selvan (ASSP/EEE) and Dr. M Deveshraj (ASSP/EEE), along with Final Year M.E Power Electronics students visited Central Power Research Institute (CPRI), Bangalore, on 4-3-2016. The industrial visit was planned as a part of Industry Institute Partnership Cell (IIPC) - AICTE

Dr. V Rajini (Prof./EEE), chaired a session in Global conference on renewable energy GCRE at NIT Patna

Dr. Ashwin Kumar Sahoo (Prof./EEE) was the session chair for paper presentation, at the IEEE International conference on Electrical Energy Systems, held during 17-19, March, 2016, SSNCE

Dr. Mrunal Deshpande (ASSP/EEE) was the session chair for paper presentation, at the IEEE International conference on Electrical Energy Systems, held during 17-19, March, 2016, SSNCE

Faculty Achievements

Dr. R Seyezhai (ASSP/EEE), received the Best Academic Researcher Award For The Year 2015 from The Association of Scientists, Developers and Faculties which hosts the Global Awards each and every year across the world to identify and mark up into a higher level which could be visualized into a greater standards. The complete process is divided into 6 Phases viz., Phase 0 (Zero), Phase 1(One), Phase 2(Two), Phase 3(Three), Phase 4(Four) and Final Phase. The entire awards process runs for a span of 1 full year without any break in the process which needs crossing several levels of ascertainment. After various levels of ascertaining of documentation, qualification eligibility and various factors, the narrowing was done in various levels bringing out the 13,812 nominations to 43.

She received the award on Dec.30th, 2015 in the Global Awards 2015 held at Shenbhaga Convention Center, Pondicherry. The chief guests are Hon'ble Electricity Minister, Mr. T Thiagarajan, Pondicherry and Hon'ble Welfare Minister, Mr. P Rajavelu ,Pondicherry.

Dr. R Ramaprabha (ASSP/EEE), IEEE Student Branch Counselor received a certificate of "Appreciation for Student Branch with Grade A Recognition" on behalf of branch with cash award of Rs. 3000/- in Annual Meeting of IEEE Madras Section held on Sunday, the

31st Jan 2016 at Conference hall, Alumni Center, College of Engineering, Guindy, Chennai

Dr.V Rajani (Prof./EEE) elevated as senior member of IEEE

Dr. R Ramaprabha (ASSP/EEE) has been elevated as IEEE Senior member from Feb 25, 2016.

Dr. N Pandiarajan (Prof./EEE) received the 'Top Reviewer Award 2015' from Elsevier Renewable Energy for undertaking 35 reviews in Renewable Energy during 2015.

Dr. Ranganath Muthu (Prof./EEE) is appointed as a Member of the Board of Studies of the Affiliated Institutions under the Faculty of Electrical Engineering of Anna University for a period of three years upto February 2019

Student Achievements

Received ISTE- Manakula Vinayagar Award for best student project for the project titled," energy recovery scheme to harvest energy from partially shaded photovoltaic module " at 15th ISTE TN& Pondicherry section annuual convention for engg students , at Anand institute of Higher techmology on 13th feb 2016. Students: Hamsa Zagriya, Hasha Vardhini, Dharani 2015 passed out . Supervisor : Dr.V Rajini (Prof /EEE)

M.Vignesh & Suudershana (IVYr.EEE, B) under the guidance of Dr. R Seyezhai, (ASSP/EEE) received the Best Paper Award in the Current SSN UG Students Paper Presentation held at SSNCE.

A.Bharathi Sankar (Full-time Scholar) under the guidance of Dr.R Seyezhai (ASSP/EEE) received the Best Oral Presentation Award in the SSN Doctorate Scholars Day held at SSNCE.

K S Omprakash won "Bharat Ratna Mother Teresa Gold Medal Award" from Global Economic Progress and Research Association for excellence in his field on the occasion of 33rd National Unit Conference on "National Economic Growth Through Individual Contribution" held on 8th March at Chennai

Poojha B K of final year B Section got 91.6 percentile in CAT and got call from IIM Indoor.

The most awaited IOT (Internet of things) workshop was recently held at Madras Institute of Technology, Chennai on 26th and 27th of March 2016. Three teams from EEE-A 2nd year took part in the workshop and each team consisted of five members. The course gave the students a brief insight on IOT devices and its applications using Arduino and Wi-Fi module.

At the end of the workshop, a Zonal competition on Arduino coding was conducted. Having won the competition, the team consisting of G Anish Kumar, Naveen Venugopalan, Lalith Raj S, Aarthi G, Haridha V from 2nd year EEE-A was awarded with a direct pass to the semi-finals of the National Robotics Championship at IIT BOMBAY on 2nd and 3rd of April,2016.

The team was tasked with building a Line Follower Robot using Kits provided by the organising committee of the NRC. Despite being first timers, the team completed the semi-finals track with 2nd position and became one of the 15 teams to qualify for the Finals held on 3rd of March. Unfortunately, they could not make a mark in the finals but were more than satisfied with the experience they got.

M Prithika RANI,a tennis player, from second year EEE got selected to represent Anna university in the South Zone Inter University tournament at Vijayawada and came fourth. She represented Anna university at Tamil Nadu Inter-University meet at Ramanathapuram and came thirdShe also represented Anna University at all India Inter-University tournament.

TESLA POWERWALL - SUSTAINABLE ENERGY SYSTEM

- Swaathishree Sridhar, 2nd year, EEE 'B'

In recent years, the world has been slowly moving from depleting energy resources to renewable energy resources to reduce carbon emissions and pollution. Tesla motors launched its new products as alternatives for non-renewable energy. A wall mountable home battery named Tesla POWERWALL was introduced on April 30th,2015 in Los Angeles by Elon Musk, CEO of Tesla Motors. It is a rechargeable lithium-ion battery which can store both electrical and solar energy for later use. It consists of liquid thermal management system, battery management system and DC-DC converter.

PM Modi's visit to Tesla Motors,San jose

In many western countries, electricity rates differ at day and night. Let us consider a case where rates are at peak during day time and less during night time. Powerwall stores the electricity during night and powers the home during day avoiding peak rates. It acts as the home's own power grid and considerably reduces electricity bill. Here, Powerwall plays the saver role.

Solar panels are widely used to power homes during day time. But, night time stands first in terms of consumption. Excess solar energy produced is stored by thermal energy storage system in the form of high-temperature molten salts. But batteries are preferred to former systems due to better adaptability. Powerwall, when connected with solar panels can store solar energy with high efficiency up to 90%. They are fully automated and have better holding ability than lead-acid batteries. It acts as an independent micro-grid and tries to decrease power consumption from EB. Here, Powerwall acts as an energy storage system.

Tesla points out the less bulky size of Powerwall as an essential feature. It has a dimension of 130 X 86 X 18 cm. Its dimensions are compact apposed to other home batteries in market. There are two models based on storage and production capacity: 10 kWh for backup (Rs.2,37,422) and 7 kWh for daily cycle (Rs.2,03,505). Powerwalls can be connected together for higher energy demand. Experts predict that Powerwall would be of great potential to India's energy demands. Many have come to know about it after PM Narendra Modi's visit to Tesla Motors plant at San Jose, California on 27th September,2015. Elon Musk, CEO of Tesla Motors showed their products to PM including Powerwall. But Powerwall is currently available only in US and Australian markets. So we cannot expect it to reach Indian market any sooner.

Powerwall has struck the golden chord being sold out til mid-2016.Though the delivery of Powerwall has not yet started, it is hoped by many that it will be a landmark product in energy storage systems.

News Now

- **Akshay Sridharan,3rd year, EEE 'A'**

An eternity ago back when phones still had buttons, music was still good and global warming was still a myth, there existed a powerful tool used to empower people with knowledge and information. It was called 'The News' and with this ancient artifact, the society was able to make rational and informed decisions on a daily basis. Where this tool has been hidden and what modern day networks have done to it is something we chose to ignore.

The root cause of the problem comes down to the fact that it's impossible to fit all that happens in the world in a newspaper or a one hour news segment. What's given to us as the news is the residue of a filter. The filter used to be controlled by the society's elite, honourable men and women called journalists. Today however, it's in the hands of

political and corporate organizations, which has led to the decline of the news. The agenda has shifted from dispersion of facts and informing the society to pushing political agendas and filling corporate pockets. The same story covered by two news channels will have conflicting information and statements because it stopped being about the facts a long while ago.

Apart from pushing political agendas, News agencies have started to deliver news based on ratings rather than content. The traditional first line of questioning that journalists used to have “Is this information something that the people need?” has been replaced by “Will this news gather an audience?” The fact that new channels and soap operas ask themselves the same questions is an alarming cause for concern, one to which we have got to stop hitting the snooze button.

Of course there are still veterans of the news who have managed to keep their faith in these testing times and ensure that what they put out as news is nothing but that sweet cauldron of fact checked information which the people yearn for. These unsung heroes who have risen where all else failed are the backbone of the information network, which may well die out with them.

Instead of playing the blame game, we as a society must come together and demand the news of old. We can complain that ratings are used to drive the news or realize that it’s us that control the ratings. We can either be empowered by this once great tool or fade in ignorance.

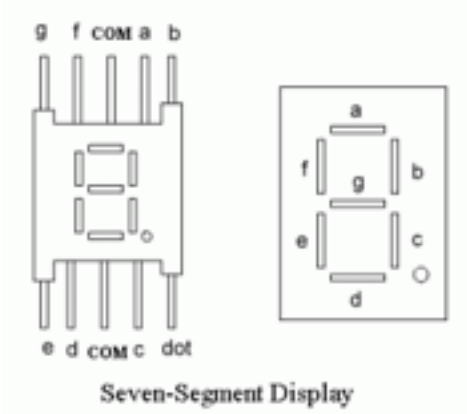
The Choice is Ours.

Tutorial on programming an Arduino to display numbers in reverse order in seven segment display.

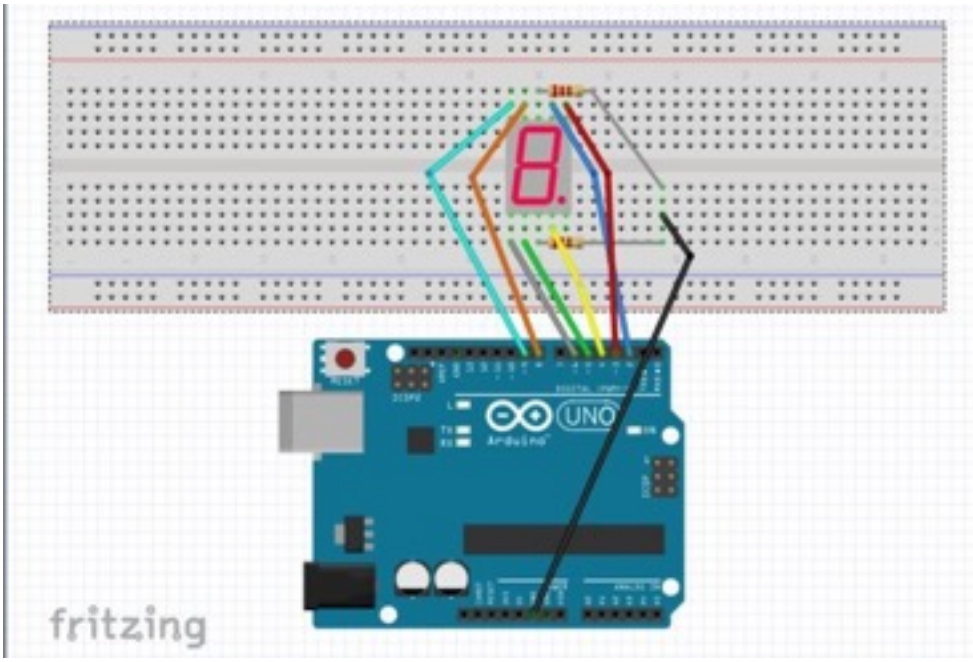
-Shabbeer Basha G, 2nd year, EEE ‘B’

Components required:

- An Arduino Uno
- Breadboard
- 2 x 1K ohm resistors
- One seven segment display
- Connecting wires
- Circuit diagram



Seven-Segment Display



Program code:

```
// Define the LED digit patters, from 0 - 9
// Note that these patterns are for common anode displays
// For common cathode displays, change the 1's to 0's and 0's to 1's
// 1 = LED on, 0 = LED off, in this order:
// Arduino pin: 2,3,4,5,6,7,8
byte seven_seg_digits[10][7] = { { 0,0,0,0,0,0,1 },  // = 0
                                 { 1,0,0,1,1,1,1 },  // = 1
                                 { 0,0,1,0,0,1,0 },  // = 2
                                 { 0,0,0,0,1,1,0 },  // = 3
                                 { 1,0,0,1,1,0,0 },  // = 4
                                 { 0,1,0,0,1,0,0 },  // = 5
                                 { 0,1,0,0,0,0,0 },  // = 6
                                 { 0,0,0,1,1,1,1 },  // = 7
                                 { 0,0,0,0,0,0,0 },  // = 8
                                 { 0,0,0,1,1,0,0 }   // = 9       };
void setup() {
  pinMode(2, OUTPUT);
```

```
  pinMode(3, OUTPUT);
  pinMode(4, OUTPUT);
  pinMode(5, OUTPUT);
  pinMode(6, OUTPUT);
  pinMode(7, OUTPUT);
  pinMode(8, OUTPUT);
  pinMode(9, OUTPUT);
  writeDot(0);  // start with the "dot" off }
void writeDot(byte dot) {
  digitalWrite(9, dot); }
void sevenSegWrite(byte digit) {
  byte pin = 2;
  for (byte segCount = 0; segCount < 7; ++segCount) {
    digitalWrite(pin, seven_seg_digits[digit][segCount]);
    ++pin;
  }       }
void loop() {
  for (byte count = 10; count > 0; --count) {
   delay(1000);
   sevenSegWrite(count - 1);
  }
  delay(4000);
}
```

Procedure:

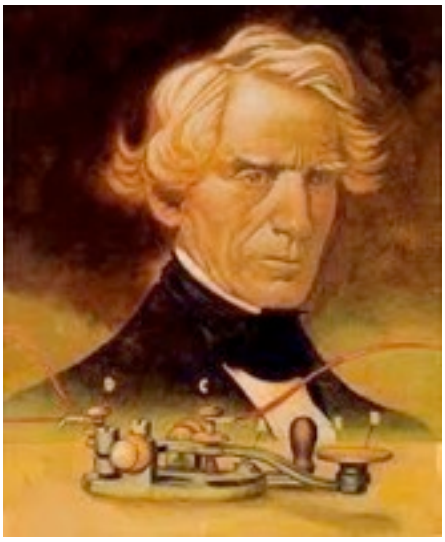
1. Connect the Arduino board and the display device as in the circuit diagram.
2. Check for your display device whether it is common anode or common cathode.
3. Upload the program to your Arduino.

www.arduino.cc

HISTORY OF ELECTRICITY AND MAGNETISM (PART V)

-Devika B S, 3rd year, EEE 'A'

There was a remarkable development in the field of electric telegraphy between 1830 and 1840. Even though the first working telegraph was bulit by the English inventor Francis Ronalds in 1816, it was a very primitive model and sadly termed "wholly unnecessary" by the Admiralty (an organisation responsible for the command of the Royal Navy in the Kingdom of England, and later in Great Britain, and until 1964 in the United Kingdom.)The first commercial electrical telegraph, the Cooke and Wheatstone telegraph, was co-developed by William Fothergill Cooke and Charles Wheatstone in 1837. This sytem used needles to point to alphabets and was successfully used in the railway system. Soon, telegraphs began spreading in post offices and this was the beginning of mass personal communication. However Samuel Morse, an American inventor developed an electric telegraph indepedently and the first telegram in US was sent by him on 11th January 1838 covering a distance of 3 km at Speedwell Ironworks near Morristown, New Jersey. Interestingly, a delay in communication informing his wife's death due to which he missed her burial was what inspired him to develop the electric telegraph so that communication can be faster over long distances. This is a great example of how a depressing incident can turn motivational. Today the telegraph system is no longer in use as they have been replaved by phones, emails and other modes of communication. The world's last existing true electric telegraph system was used by BSNL (an Indian government telecom company) and was ended on 14th July 2013.



In 1871 Zénobe Gramme, a Belgian electrical engineer designed the first generator that could produce power in commercial quantities for industrial usage. Though the operating principle of electromagnetic generators was discovered in the years of 1831–1832 by Michael Faraday, the Faraday disk (a type of generator) could only produce a small voltage. This cannot be considered as a dynamo as it did not have commutators. The first dynamo was built by a French instrument maker Hippolyte Pixii in 1832 based on Faraday's law of electromagnetic induction.

Zénobe Gramme

ALUMNI TALK

Ten Things I'd Tell My Seventeen-year-old Self

-Varshini K, 2011 - 2015 Batch

Your GPAs can save you:

'It's not only the GPA that matters,' some shrug, justifying their mark sheet. I was one among them. A year later, my colleague comes to me with an MBA admit from a good university.

'My 8.8 GPA saved me!' she exclaims.

While some consider the way of grading unfair, GPA still is a measurement of your academic potential. It is a tests you in your field of study, rating your knowledge about your course, and provides a third person an opportunity to glimpse into your life. It also promises consistency.

Not only do employers from your field consider it but also anyone from any field you want to get into would rate you based on your GPA.

So can your extracurricular:

Academics gives them an idea of how well a student you are but, extracurricular activities paint the other half of the picture, holistically depicting you as a person. These days, having a good extracurricular profile has become a necessity. Go out of the class. Go join clubs. Love Books? There's a literary club! Love teaching? There are so many non-profit organisations! Spend your weekends there! It's always good to take a break from your studies.

You are an engineer. Keep doing math.

Quants are an integral part of interviews and competitive exams alike. So, with an idea to crack CAT I take a Quants book. I come across some sums on Permutations and Combinations. I take a sheet, try to solve them. And then, I start crying. Because we spend most of our time working out advanced differential concepts, we get so out of touch with general and basic mathematical concepts. Not only do they help you hone your analytical thinking, they improve your logical thinking. Besides, most of us took up engineering because we love mathematics. Once a math lover, always a math lover!

Ask questions. For God's sake, keep prodding until you're absolutely clear!

'Wait, I don't get it!' This phrase sums up our college life. What do you do then? Carry on, not exactly understanding the concept? That's what most of us do (Ah, don't lie!). Instead spend time and figure it out. Still don't get it? Ask questions. Get up and ask for a clearer explanation. You could also go meet your prof and clarify it. No? Then drag the nerd in the class aside and pester him until you're clear. Because, unless and until you can actually visualize them, it is a waste to try studying the engineering concepts.

DO NOT FOLLOW THE CROWD!

You sit along with your friend in your class, picking noses, when suddenly, you get a brilliant idea. You know you can put a paper on it. You turn to your friend, tell them your idea. They shrug. You shrug. You both get back to picking noses.

Alternatively:

You sit along with your friend in your class, picking noses, when suddenly, you get a brilliant idea. You know you can put a paper on it. You turn to your friend, tell them your idea.

They shrug. You don't. You run to your prof, explain your brilliant idea. They find it feasible. You work on it and publish a paper. Yay!

Even with the support from the peers, many miss out opportunities because they want to follow the crowd. Stray from the path. Get lost. You might find the treasure, for all you know.

It's okay to break conventions:

Don't be restrained by 'should-not's. Analyse them. Why are they a 'should-not'? Is the reason rational? What if...?

Yes, indeed. The mere thought, 'what if?' triggers your mind to open up and grow. Broadening a view and glimpsing past the curtains is the first step of intellectual development. Sometimes, you'd realise why it the conventions were in the first place. We see asked not to touch a hot pan. But, only when we do touch one do we understand why. Other times, we discover something new!

It's okay to be uncertain:

Crossroads are tough, especially if it's concerning your career. In an era of so many possibilities, when both necessity and passion tug at your sleeve, you would be left awfully confused. You see your friend preparing for GRE. You're not sure if doing a Masters is what you want. You're titillated by management studies as well. Then, there's this passion of yours seducing you, while a core job promises you rich experiences and comfort. At these times, it's okay to pause, put things on a hold, do something as a buffer and carry on.

Because, life IS really about learning; and, it is dynamic:

This applies not only in the case of the above mentioned case. Life, the world, everything keeps changing, and to adapt, you need to keep learning. Every new experience teaches you something. Every second, you step out blindly from the past, into a very ignorant future. The idea is to make yourself not-so-ignorant as time passes by. That is how you prosper, gathering data from an experience, add them to your data store, and keep updating the versions of your data store.

That also means you're allowed to do mistakes:

Missteps are common when you try something out new. You should have taken a different approach. It's okay. Take it the next time. Mistakes happen. You should have done something earlier. You didn't. It's okay. Learn from it and do it next time. Don't be afraid of failures; don't be ashamed of them.

But, if you don't correct them, then shame on you:

Realisations of one’s errors are fruitful only when they are acted upon and corrected. But, many don’t do it thanks to lethargy or any other laziness. Until you realise this and then work towards it, success is gonna be hard. Let me out it in another way. Work on correcting the errors and you’ll succeed.

EEE Department

Vision:

- To inculcate the right mix of knowledge, attitudes and character in students to enable them take up positions of responsibility in the society and make significant contributions.
- To produce talented Electrical and Electronics Engineers through quality education, to be a centre of excellence and become a source of cutting edge technologies in the field of Electrical and Electronics Engineering.
- To become a preferred partner in the area of collaborative research among national and international organizations.

Mission:

- To achieve global eminence in the field of Electrical and Electronics Engineering.
- To be a highly preferred destination comparable with the best in the world for students aspiring to enter the field of Electrical and Electronics engineering.
- To nurture the talent and to facilitate the students with all round personality development to make a positive difference to society through education.

ME PED

Programme Educational Objectives:

- PEO 1: Career Development: Graduates will have technical knowledge, skills and analytical ability to design, develop and test power electronic converters and drives using modern tools.
- PEO 2: Social and ethical responsibilities : Graduates will have skills and knowledge in the field of power electronics and drives to improve the system performance and to relate social, ethical, economic and environmental dimensions.
- PEO 3: Life-long learning: Graduates will have confidence to conduct research, take up higher studies and life-long learning in the field of power electronics and drives.

Programme Outcomes

At the end of the programme, the graduates will achieve the following attributes

A. Demonstrate in-depth knowledge of power electronics and drives

B. Ability to analyse power electronics and drives related engineering problems and undertake research independently

C. Ability to offer creative and innovative solutions of engineering problems that are inconformity with social and environmental factors

D. Ability to contribute to the development of technical knowledge in power electronics applications through analysis, design and experimentation.

E. Ability to use modern engineering and IT tools to solve complex engineering problems.

F. Ability to conduct collaborative multidisciplinary research through team work in order to achieve common objectives.

G. Capability to independently propose and undertake engineering projects in power electronics applications considering economical aspects

H. Ability to communicate effectively in appropriate technical forums.

I. Ability to update knowledge and skills through lifelong learning

J. Follow ethical practices in professional career for sustainable development of society

K. Subject oneself to introspection and take voluntary remedial measures.

EDITORIAL TEAM