

Department of Electrical and Electronics Engineering
National Institute of Technology Tiruchirappalli

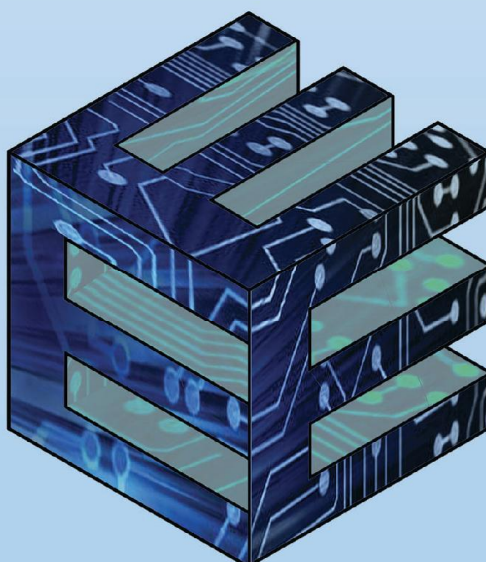


EEE NEWSLETTER



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EDITORIAL

The Department of Electrical and Electronics Engineering has successfully completed the preparatory work for the ensuing meeting of Board of Studies for our B.Tech. programme utilising the services of the experts from academic institutes and industries. The feedback and suggestions obtained from various stakeholders, namely, present students, alumni and industries have been appropriately incorporated towards improving the curriculum, not only to meet the present employability needs but also to meet the challenges of the fast growing technology, with confidence.



We are happy to note that the student-exit survey conducted among the present final year students and alumni reveals that the Program Educational Objectives (PEOs) and Program Outcomes (POs) set forth have been attained to a large extent. This survey also gives us scope for understanding the gaps between our goal and attainments, so that we can further fine-tune the objectives and outcomes. Further, the course outcomes expected out of the various courses listed in the curriculum have also been met satisfactorily as indicated by the feedback, which confirms the proper planning and effectiveness of the teaching-learning process adopted by the department.

Prof. Jayashree from University of New South Wales (UNSW), Australia visited our department during January 2014 and interacted with the faculty members, research scholars and students for possible collaboration initiatives between the institutes. She further, agreed to offer a course on Electrical Safety to our students on video conferencing mode. We would also be looking for similar initiatives for offering relevant additional courses by industrial experts and academicians from other renowned institutions.

Our placement scenario is encouraging with more number of students getting placed in core industries. As usual, this year also our students have shown enormous interest in participating in technical competitions conducted by reputed organisations and won prizes. A number of applications have been made for securing national / international fellowships / scholarships. I am also happy to mention that the number of papers published by our research scholars in international journals with high impact factors is steadily increasing and many of our scholars after obtaining Ph.D. degree have been offered teaching positions in other NITs.

I am happy that the Electrical and Electronics Engineering association (EEEE) has organized its national level technical symposium called CURRENTS well in advance. On behalf of the faculty, staff and students and on my own behalf, I wish that this Golden Jubilee year activities of EEEA become a memorable one. With unstinted efforts of all the members of the editorial board, this newsletter steps into the third year of publication, providing a wide coverage of the various curricular, co-curricular and extra-curricular activities of our department. At this juncture, I express my sincere thanks to everyone who has in one way or other contributed to the success of the preparation of this newsletter.



(N. Kumaresan)

Head of the Department, EEE

VISION & MISSION OF THE DEPARTMENT

VISION:

To be a centre of excellence in Electrical Energy Systems

MISSION:

- Empowering students and professionals with state-of-art knowledge and Technological skills.
- Enabling Industries to adopt effective solutions in Energy areas through research and consultancy.
- Evolving appropriate sustainable technologies for rural needs.

PROGRAMME EDUCATIONAL OBJECTIVES OF B.TECH PROGRAMME:

The main objective of the B.Tech. programme in Electrical and Electronics Engineering is to prepare students:

1. for graduate study in engineering
2. to work in research and development organizations
3. for employment in electrical power industries
4. to acquire job in electronic circuit design and fabrication industries
5. to work in IT and ITES industries

PROGRAMME OUTCOMES OBJECTIVES OF B.TECH PROGRAMME:

The students who have undergone the programme

1. will have an ability to apply knowledge of mathematics and science in electrical engineering problem.
2. will have an ability to identify the problems and provide solutions by designing and conducting experiments, interpreting and analysing data, and reporting the results.
3. will have comprehensive understanding of the entire range of electronic/Power electronic devices available.
4. will be able to control and convert power for industrial applications from their knowledge and exposure on different configurations into which the devices are connected.
5. will have in-depth knowledge in transmission and distribution systems, power system analysis and protection systems, which will be a shot in the arm of the students who wish to pursue a career in the power sector.
6. will have a good knowledge in data structures, object oriented programming, operating systems and computer architecture.
7. will have an ability to use the techniques & skills on modern Electrical & Electronics engineering software tools such as MATLAB, PSCAD, PSIM, PROTEUS VSM, ETAP, MiPOWER, OrCAD etc., for engineering practice.
8. will have a sound knowledge in the areas of analog and digital Electronics with added state-of art knowledge on VLSI systems.

9. will be able to take up projects related to electrical and electronic hardware implementations.

10. will be able to develop application programs related to modelling, simulation, instrumentation and control of engineering systems.

11. will have an ability to participate as members of engineering and science laboratory teams as well as members of multidisciplinary design teams.

12. will demonstrate the ability to choose and apply appropriate resource management technique/s so as to optimally utilize the resources available.

13. will be proficient in English language in both verbal and written forms which will enable them to compete with graduates of international engineering institutions.

14. will have the confidence to apply engineering solutions in global and societal contexts.

15. should be capable of self-education and clearly understand the value of achieving perfection in their professional endeavours.

16. will understand and uphold professional, ethical and social responsibilities.

17. will be able to design and build renewable energy systems for developing clean energy and sustainable technologies.

COURSE OUTCOMES OBJECTIVES OF B.TECH PROGRAMME:

The students will

1. Apply fundamentals of electrical and electronics engineering principles in real time practical applications.
2. Apply mathematics and science for solving / troubleshooting electrical and electronics engineering problems.
3. Develop confidence in handling real time systems and get involved in team effectively.
4. Develop working models/mini projects (wherever possible) for understanding the concepts.
5. Simulate the electrical system/ develop the software package for studying the electrical systems.
6. Develop the habit of Self learning and preparing for competitive examinations.

Further each course of the programme will have will have specific objectives/course outcome(s) which are listed in the syllabi.

JOURNALS AND PUBLICATIONS

1. M. A. Asha Rani, Karthikeyan. A, Nagamani C., "Decoupled control of doubly-fed-induction generator under unbalanced grid voltage with modified reference generation", IEEE International Conference on Power, Energy and Control (ICPEC), 2013
2. C. Nagamani, M. A. Asha Rani, Nikhilesh Prasannakumar, Karthikeyan. A., "Reference Current Generation Schemes for DFIG with unbalanced grid voltage", IEEE International Conference on Electrical Energy(ICEEE), 8th Jan 2014
3. C. Nagamani, Nikhilesh Prasannakumar, Venkata Rama Raju, "A simplified Sensorless Speed Computation Algorithm for Squirrel Cage-Induction Motor", IEEE International Conference on Electrical Energy (ICCPCT),2014
4. S. Senthil Kumar, N. Kumaresan, M. Subbiah and Mahendhar rageeru, "Modelling, analysis and control of stand-alone self-excited induction generator-PWM rectifier systems feeding constant dc voltage applications", Accepted for publication in IET Generation, Transmission & Distribution.
5. P. Raja, N. Kumaresan and M. Subbiah, "An Improved Delta-Star Switching Scheme for Reactive Power Saving in Three-Phase Induction Motors", Accepted for publication in Frontiers in Energy.
6. K. Vijayakumar, N. Kumaresan, N. Ammasaigounden and Sarath B Tennakoon, "Real and Reactive power control of hybrid excited wind-driven grid-connected DFIGs", IET Power Electronics, Vol.6, Issue. 6, 2013, pp.1197-1208.
7. K. Vijayakumar, N. Kumaresan and N. Ammasaigounden, "Operation of inverter assisted wind-driven slip-ring induction generator for stand-alone power supplies", IET Electr. Power Appl., Vol.7, Issue. 4, 2013, pp.256-269.
8. Vinothkumar, K. and Selvan M.P., "Hierarchical Agglomerative Clustering Algorithm Method for Generation Planning", International Journal of Electrical Power and energy sytems, Vol. 56, March 2014, pp. 259-269.
9. Srinath, S., Chandan Kumar and Selvan, M.P., "A Simple Digital Control Algorithm for Three Phase Shunt Active Filter: Simulation and Experimentation", Frontiers in Energy Online Issue December, 2013, DOI 10.1007/s11708-013-0288-0.
10. Vijitha, K. and Selvan, M.P., "Performance Analysis of Distribution Network with Optimally Sized WTGS based DGs Considering Wind Speed Variation" IEEE International Conference INDICON-2013, 13-15 December, 2013, IIT Bombay, Mumbai, INDIA.
11. Anish NK, T. Murali Chakkravarthy, Dastagiri Reddy B., Moorthi S. and Selvan M.P., "FPGA Based Control Scheme for a Single-State Grid-Connected Solar Photovoltaic System", IEEE International Conference AFRICON 2013, 9-12 September, 2013, Mauritius, AFRICA.
12. M. Venkata Kirthiga and Pramodkumar Muppiddi, "Controlled Islanding based on Line Contingency Ranking in Autonomous Micro-grids", IEEE AFRICON 2013, in Mauritius during 9th-12th September 2013 .
13. M. Venkata Kirthiga and M. Rajasekaran, "A Modern Self-Defined Extinction Advance Angle Controller for CCC based Hybrid HVDC Systems", IEEE AFRICON 2013, in Mauritius during 9-12 September 2013 .

14. Anish NK, S. Moorthi, "Intelligent Location identification and passenger – alert system in Indian Railways using GPS receiver", IEEE-AFRICON 2013, September 9-12, 2013.

15. Anish NK, Kowshick B., S. Moorthi, "Ethernet based Industry automation using FPGA", IEEE-AFRICON 2013, September 9-12, 2013.

16. S. Aditya and S. Moorthi, "Wide Tuning Low Noise OTA based Current Controlled Ring Oscillator to suit PLL Applications", International Conference on Intelligent and Efficient Electrical Systems (ICIEES), December 2013. (Awarded as Best Paper).

17. S. Aditya and S. Moorthi, "A Low Jitter Wide Tuning range Phase Locked Loop with Low Power Consumption in 180nm CMOS Technology", IEEE-Asia Pacific Conference on Postgraduate Research in Microelectronics & Electronics (PRIMEASIA), December 2013.

SCHOLARSHIPS AND INTERN LIST

INTERN LIST	
Laxmi Narasimhan Badrinarayan	Texas Instruments
Suzith D.	Qualcomm
Sajinishree S.	PnG
Vignesh Meiyappan	ITC

DAAD Scholars (Germany)	
Parikshit Dey	TU Hamburg
Sai Rama Usha A.	RWTH Aachen
Siddharth J.	TU Chemnitz
Rajaraman P.	TU Chemnitz

Aspiring NITT-ian Internship in Summer Holidays

"Aspiring NITT-ian Internship in Summer Holidays" internship is an initiative of VLSI Systems Research Lab of EEE department, instituted to motivate a research career among B.Tech EEE students in VLSI and Embedded Systems. The students have to do a project in the areas of VLSI and Embedded systems with the intention to complete the work in two months. The candidates will be required to come up with the best possible solutions along with active participation throughout the duration of the project. Three B.Tech students of EEE, Shri. Adhavan RK, Shri. S. Yogeshwaran and Shri. S. T. Aravind were the first recipients of this internship during May 2013.

CONVOCAATION 2013

More than a thousand people had waited for this day with their breath held tight. For that was the day they finally earned their scrolls of honor. The college witnessed its 9th convocation on the 3rd of August, 2013 thereby inaugurating the completely renovated and air-conditioned Barn Hall. Presided by Dr. R. Chidambaram, Principal Scientific Advisor to the Government of India & Chairman, Scientific Advisory Committee to the cabinet, this convocation witnessed a total of 1547 degrees being awarded to students of various B.Tech, B.Arch, M.Tech, M.Sc, M.C.A, M.B.A, M.S. and Ph.D programmes.

A whopping 10 out of the 59 doctorate degrees handed out this year were received by scholars of Electrical and Electronics Department. Apart from them, 45 postgraduate students from the field of Power Systems and Power Electronics and 95 undergraduate students received their respective degrees that day bringing the total to 159 degrees to the students of EEE.

This year's Institute Medals for the toppers of the EEE Department were awarded to R. Vignesh from the B.Tech programme and to Kolay V. Bhargava Reddy and Swetha Vucha from the M.Tech Programmes. Many students came in person accompanied by their families to receive their degrees and meet their faculty before rushing off to further avenues of life. It was a day of reminiscence and nostalgia for all students and faculty, with many a people getting emotional on and off stage.



Mr. R. Vignesh receiving the gold medal as topper of B.Tech(EEE) 2009-13



Dr. S Senthil Kumar receives his PhD from the Director Dr. S. Sundararajan



Dr. P. Raja receives his PhD from the Director Dr. S. Sundararajan



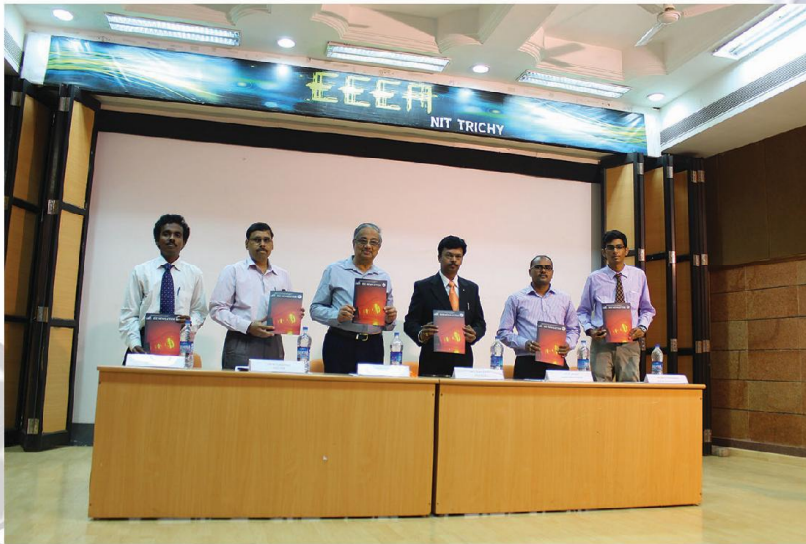
Mr. Kalay V. Bhargava Reddy receiving the gold medal as topper of M.Tech(Power Systems) 2011-13



Ms. Sweta Vucha receiving the gold medal as topper of M.Tech(Power Electronics) 2011-13

EEE ASSOCIATION INAUGURATION

The inauguration of the activities of the Electrical and Electronics Engineers Association of NIT Trichy was held on the 13th of September, 2013 at the EEE Auditorium. The inauguration is the first major event of the year and brings together collaboration among the students and faculty members of the EEE Department. This year's event was graced by the presence of the young, Lr. J. Karthick Babu, a Member of the Supreme Court of India Bar Association & former District Governor of the Lions Club of Tirchirappalli, the Director of NITT, Dr. S. Sundarrajan, and the Head of the EEE Department, Dr. N. Kumaresan.



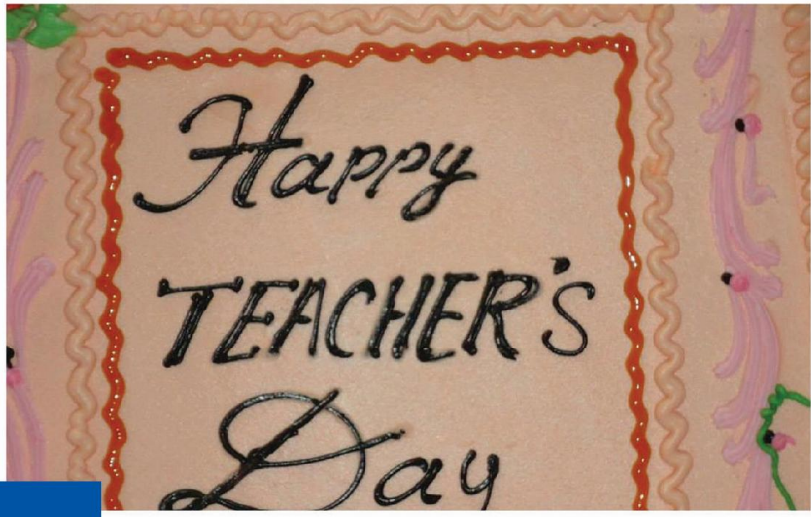
EEE Newsletter Release

The chief guest, Lr. J Karthick Babu, addressed the gathering, encouraging the students to take up leadership roles and outlining the qualities of great leaders. Our faculty advisor, Mr. P. Srinivasa Rao Nayak, installed the office bearers of the EEE Association for this academic year. The Director of NITT, Dr. S Sundarrajan, delivered the Golden Jubilee Address, inspiring the students to take up projects and work towards developing technologies that will help overcome the everyday obstacles. The Head of EEE department, Dr. N Kumaresan, recanted the proud history of the EEE department in its 50 years of glory and it's vision for higher development. The installation of security systems in the department was inaugurated by the chief guest along with the Dean of Planning and Development, Dr. C Nagamani.



Installation of Office Bearers

The inauguration was followed by an interaction session between students, where the DAAD and MITACS Globalink scholars shared their experiences in research and travel.



Time for Reminiscence

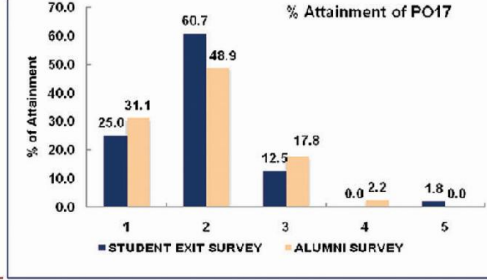
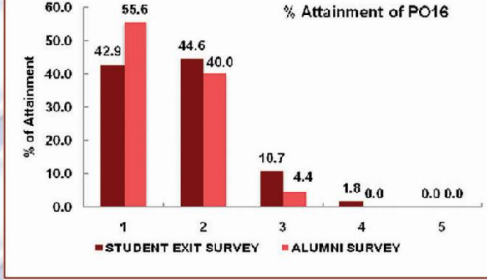
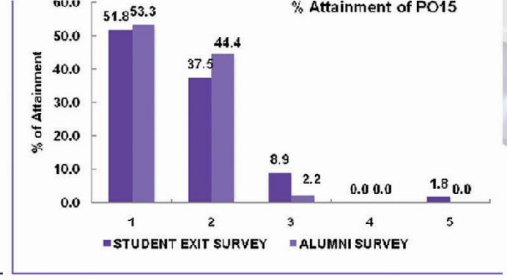
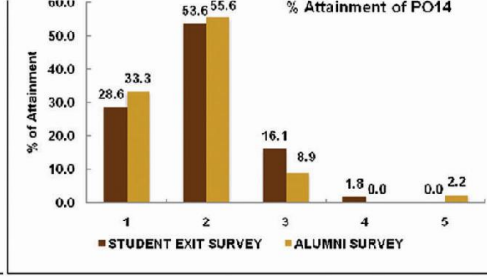
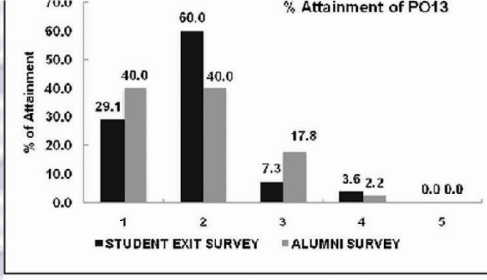
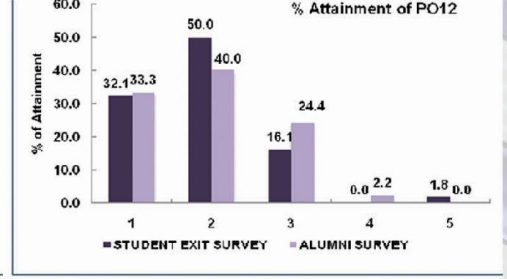
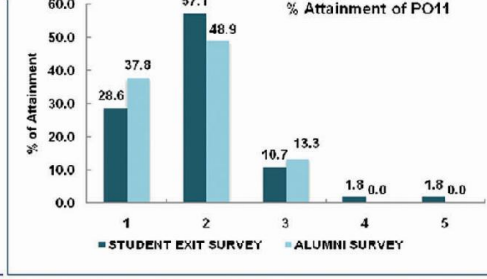
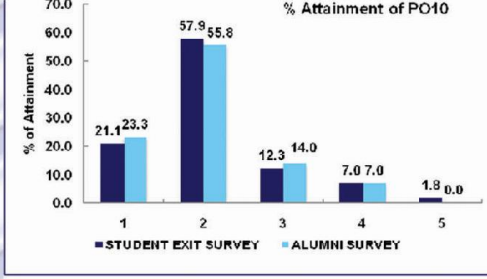
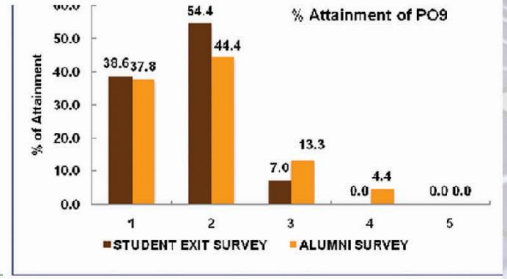
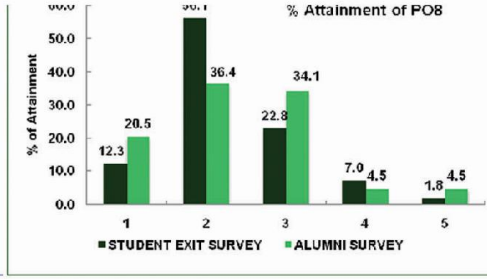
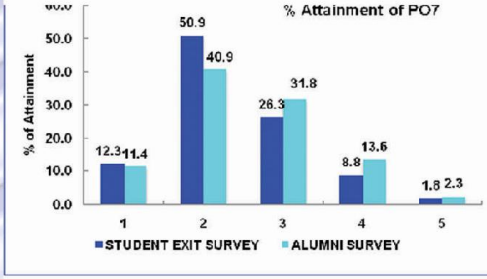
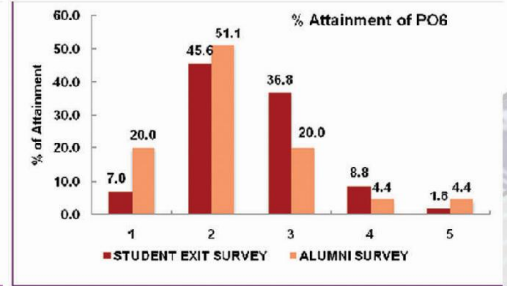
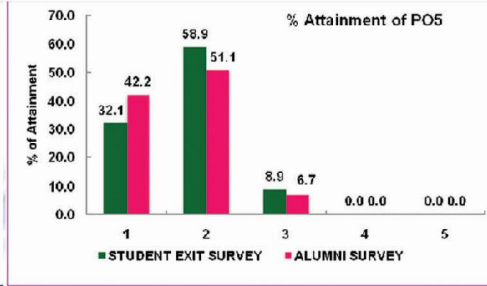
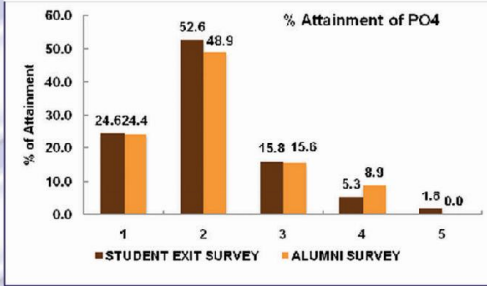
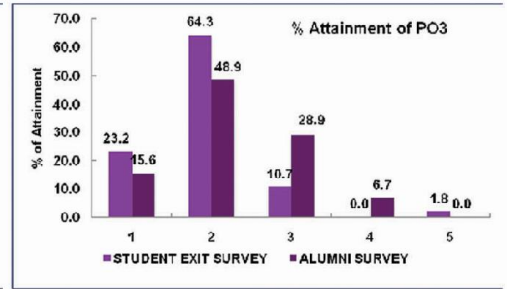
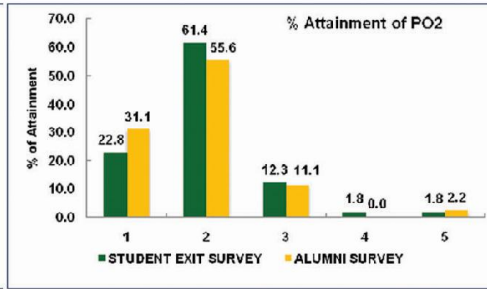
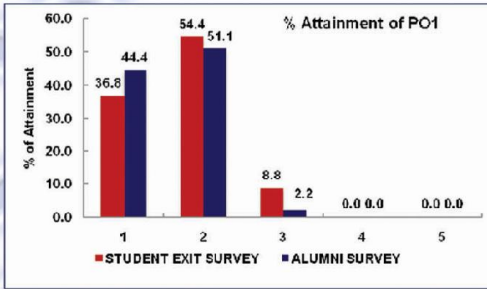




Some Glorious Memories



PROGRAM OBJECTIVES ATTAINMENT SURVEY RESULTS:



	% Of Attainment through STUDENT EXIT SURVEY	% Of Attainment through ALUMNI SURVEY	AVERAGE
PO1	32.8	33.6	33.2
PO2	30.2	31.3	30.8
PO3	30.7	27.3	29.0
PO4	29.3	28.4	28.9
PO5	32.3	33.6	32.9
PO6	24.7	27.8	26.3
PO7	26.3	24.5	25.4
PO8	27.0	26.4	26.7
PO9	33.2	31.6	32.4
PO10	28.9	29.5	29.2
PO11	30.9	32.4	31.7
PO12	31.1	30.4	30.8
PO13	31.5	31.8	31.6
PO14	30.9	31.8	31.3
PO15	33.8	35.1	34.4
PO16	32.9	35.1	34.0
PO17	30.7	30.9	30.8

SHORT COURSES

ADVANCED CONTROL THEORY:

The Department of EEE, under the sponsorship of TEQIP, organized a short term course on 'Advanced Control Theory' held on 30th & 31st August, 2013. In our college, the course was coordinated by Dr. V. Sankaranarayanan, of our department and Dr. A. Ramakalyan of Instrumentation and Control Engineering Department.

The two day program, aimed to introduce and educate the 40 participants on the recent trends and research in Control Theory.

Dr. Arun D. Mahindrakar, Dr. Bharath Bhikkaji and Dr. Ramakrishna Pasumarthy from the Electrical Engineering Department of the Indian Institute of Technology at Madras delivered guest lectures in their various fields of expertise and their present research, in addition to lectures by Dr. V. Sankaranarayanan and Dr. A. Ramakalyan.

EEE CELEBRATIONS:

This academic year has seen the celebration of several festivals within our department. As an initiative of research scholars and faculty of the department, Teachers Day, Deepavalli, Ayudha Pooja and New Year were celebrated with great vigour and enthusiasm.

Teachers Day celebration was arranged by the Research Scholars and PG students of the department on September 5th, 2013. Dr. N. Ammasai Gounden and Dr. N. Kumaresan cut a cake and made the occasion memorable. In an interaction session with the students, the faculty of our department shared memories of their faculty. They were presented with mementos by the PG students.

Ayudha Pooja was celebrated in our department on October 14th, 2013. The labs were decorated in addition to the traditional kolam. Prayers were offered by the students and faculty.

Deepavalli was celebrated in our department on the November 1st, 2013. The faculty and students had participated in the celebration with fireworks and sweets.

The New Year of 2014 was welcomed here with great enthusiasm. A cake was cut by Dr. N. Ammasai Gounden and Dr. N. Kumaresan.

These celebrations have had an increasing positive impact on bridging the ever shortening gap between student and faculty within our department.

INDUSTRY INTERACTION

POWER GRID CORPORATION OF INDIA, LTD.

Avaneet Kumar Gautam and Chinmay Sharma
Engineers, Corporate Centre
POWERGRID, Gurgaon

It was a delight to visit NIT Trichy and experience life in the institute and South India for the first time. The visit was an extended one in which we worked on the Micro Grid Project. The project is being implemented by EEE department of NIT Trichy and sponsored by POWERGRID.

We had joined POWERGRID a few months back and a chance to visit a college campus brought back memories from our college days. Coming to NIT Trichy was an enriching experience. Especially the workshop on Wind Driven Generators, conducted by professors from the EEE department, was an educational opportunity for us. We got a chance to interact with other experienced faculty members and at the end of the lectures our knowledge of wind driven generators reached new heights.

The NIT campus is large, peaceful and very environment friendly. It has a soothing ambiance and we enjoyed taking walks around the campus in the cool evening weather. We were cautioned beforehand about the problems north Indians faced regarding food in South India but we were pleasantly surprised by the food in Mega Mess 1 and preferred eating there than having our meals in the guesthouse.

We collaborated with people working on different sections of the Micro Grid project and appreciated the efforts and time that each individual has put into the project.

We would like to thank Dr. N. Kumaresan, Dr. S. Moorthi and Dr. M. P. Selvan for their valuable time and co-operation during our stay. We would also like to acknowledge Mr. Dastagiri, Mr. Venkat, Mr. Nayanar and Mr. Adhavan for making our stay comfortable and enjoyable and arranging every small detail to make our visit comfortable.

We offer our best wishes to the EEE department and hope to see more such collaborations between NIT and POWERGRID in the future.

INDUSTRIAL VISIT TO TUTICORIN THERMAL POWER PLANT

The final year students of Electrical and Electronics Engineering Department visited the Tuticorin Thermal Power Plant (TTPS) on October 9, 2013. A total of 32 students, accompanied by Dr. P. Raja, Assistant Professor, explored the internal switchyard, transformer yard and power generation unit of the power plant. The students were guided by Mr. Kumaresan, Assistant Executive Engineer, TTPS.

The visit started with the indoor switchyard of the plant that comprised of circuit breakers and isolators. Next, the students were taken to the Relay Control Room. This power plant has both Numerical and Electro-mechanical relays. Then, the students were led to the transformer yard. This plant also has Power Line Carrier Communication (PLCC) to send and receive information about faults in the power lines. With the visit to the switchyard completed, the students were taken to the generation and boiler units. There are 5 generating units in total. Each generator is rated to 210 MW of electrical power at 12.75 kV. The slip-rings are interfaced with SCR full converters to provide the necessary excitation to the generators. The students were then taken to the control room of the power plant where the details of the instrumentation involved and control techniques implemented were explained. The last stage of the Industrial visit was to the Boiler. The coal was conveyed to the boiler by means a long conveyer belt. The temperature at the heart of the Boiler was above 1000 degrees centigrade. The power plant has electrostatic precipitators installed in the Chimneys to remove the pollutants from the smoke emitted.

Overall the visit was very informative. The engineers at the plant gave a good insight into the operation of a power plant. Students were able to relate the concept taught in class with the actual implementation on an industrial scale.

PROJECTS BY STUDENTS

SANGAM

Smart Watch

Team members: T. Sattanaathan(EEE)
Pranav(Chemical)
Girish Kumar(ECE).

If there is one aspect of Pragyam which never fails to inspire students, it's Sangam. This year, a group of second year students are building a 'Smart watch'. This Smart watch is a bluetooth-bridged display system which is designed to display time, sent and received sms, call alerts etc. The watch is effectively designed in such a way that it goes into sleep mode if the watch is not strapped on the wrist and powers up when strapped on. The watch uses AtMega8 microcontroller to process the signals sent from the Bluetooth device of an Android mobile. The team has cleared all the preliminary screening in Sangam' 14 and they are working hard to bring their project to reality.

Snakebot:

Team members: Devella Sripad Krishna(EEE)
Ramitha Sundhar(EEE)
Nikesh Elango(EEE)
Chakradhar Reddy(ECE)
Vimallesh (Mech).

This snakebot is 4 feet mechanical construct consisting of 6 segments and equipped with 10 high torque servo motors. To give the bot a snake like slithering motion and worm like wriggling motion, it is given a frictionless Teflon base. With the aid of temperature, barometric and ultrasonic sensors, the robot can perform 2D mapping of terrains, internal mapping of caves, rust thickness calculation in pipes and flaw detection in pipes. The team has designed a java based user end application to serve as the human machine interface. As an added functionality the bot has a data monitoring software. The team is in the final stages of software integration of the bot.

TEXAS INSTRUMENTS ANALOG DESIGN CONTEST 2014

Portable GPS based Cardiac Dysfunction Alert System:

Team members: Gautham K.S.
Kaushik K.S.
Siddharth J.
Vishnu Narayan V.
Abhishek Saurabh

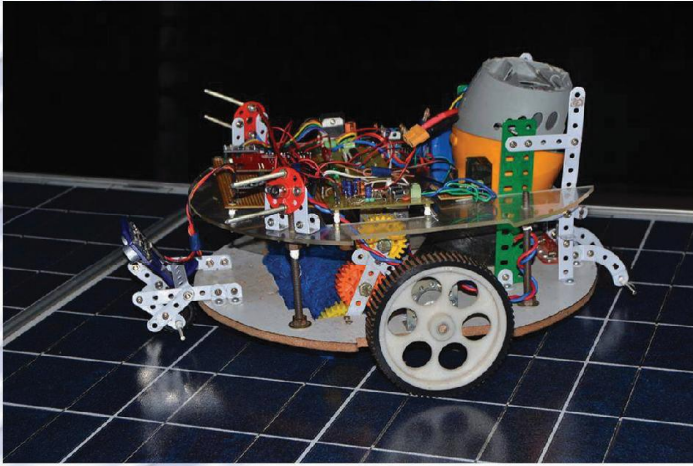
Mentor: Dr. N. Ammasai Gounden



A real-time, continuous, low cost and portable ECG monitoring system has been designed for the common man for the detection of emergency situation ECG waveforms. The project has been done to save on the crucial time just after the onset of a cardiac arrest thus aiming to bring down the percentage of deaths due to heart attacks around the world. The processing of the waveform is first carried out on a highly efficient analog circuit (consisting of the Instrumentation amplifier and filters) from which the information about the waveform is sent to an android platform through a microcontroller (MSP430G2553) and a Bluetooth module for further analysis and action. A Machine learning algorithm based on SVM (Support Vector Machines) has been used to classify the waveforms into their appropriate categories after which the GPS module of the smartphone is used to send the GPS coordinates of the person through an SMS to the registered hospital.

Robotic Vacuum Cleaner for Solar Panels

Team Members : Aravind G.
Gautham V.
Gowtham Kumar T.S.B.
Naresh Balaji R.
Mentor: Dr. Saravana Ilango G.



Accumulation of dust on the surface of solar panels reduces the amount of radiation reaching it, which leads to loss in generated electric power and formation of hotspots which would permanently damage the solar panel. The project aims at developing an autonomous vacuum cleaning method which can be used on a regular basis to maximize the lifetime and efficiency of a solar panel. The Robotic Vacuum Cleaner uses a two stage cleaning process to remove the dust from the solar panel. It is designed to work on inclined and slippery surfaces with an appropriate feedback mechanism. The battery voltage of the robot is determined periodically and if it goes below a threshold, it returns to the docking station and charges itself automatically using power drawn from the solar panels. The arrays of solar panels are connected using rails so that one robot is enough to clean the entire arrangement.

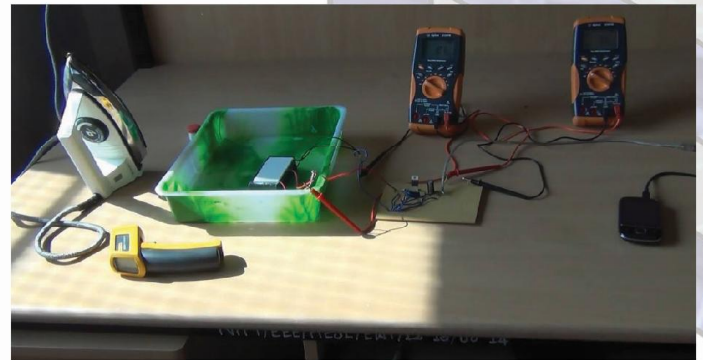
Effective Street Lighting and Speed Monitoring System

Team Members: Shameem Mahudoom
Sajini S
Madhumathi G.
Arun Prasad G. K.
Mentor: Dr. S. Moorthi

It is an energy saving system in which the street lights are switched on only when the road is being used. IR/LASER transmitters and receivers can be fixed on opposite poles on either sides of the road. Whenever traffic passes by, the IR/LASER light is disrupted and the sensor fails to receive the signal. This is used as an indication to switch on the lights over a fixed distance ahead of the moving body. As the vehicle proceeds, the street lights that are passed by, enter the power saving mode and become dim instead of turning off instantly, thereby reducing the switching losses. The speed monitoring system includes passive RFID tags embedded in vehicles for unique identification of each vehicle. The time lapse in the sensing of a particular RFID between consecutive poles and the pre-knowledge of the distance between two poles help us to estimate the speed of the vehicle effectively and alert the authorities in case the speed limit is exceeded.

Thermoelectric conversion system based mobile charger

Team Members: Ilangvon K. S.
Vishventh R.
Mentor: Dr. S. Moorthi



The system is designed to convert waste heat energy into electricity. The device consists of a thermoelectric generator that converts heat to electrical energy. This electrical energy is then used to charge a mobile phone after regulation through a buck boost converter.

STUDENT AWARDS:

OP JINDAL ENGINEERING AND MANAGEMENT SCHOLARSHIP

Guru Praanesh R, IInd Year

"It was really encouraging to have been awarded such an honourable scholarship. It does give me the confidence and belief that I am able to compete with some of the most competitive students of the college community, and that I have what it takes to be a leader. The interview prepared me for the next few gruelling years of placements, interviews and group discussions.

Becoming an OPJEMS scholar does not take exceptional academic knowledge, in fact, except for the selection round, GPA is not a consideration. All it takes is to keep a clear head and to answer honestly in the leadership screening test, which lasts incidentally only for 8 minutes. In the interview, one must learn how to field personal questions, some of which are very hard to answer, like " what was your life's greatest disappointment?" , "what could have changed in your life?", and "why did you choose your branch of study?". There are also the regular questions like "what would you do with the scholarship money?" and questions about my short term and long term goals, role models, etc. The brain teasers are really tough to crack in the pressure of the interview, but you don't really have to answer them all; what is important is to hold your stand and prove that you can face any situation with confidence and comfort.

Shri O.P. Jindal was a visionary par excellence. He inspired millions to follow their dreams. His legacy and the vision of inclusive growth are being carried forward by the O. P. Jindal Group companies through various initiatives in education & vocational training, healthcare and community development activities across the country. In 2007, the Group instituted the O.P. Jindal Engineering and Management Scholarships (OPJEMS). These scholarships are aimed at promoting academic and leadership excellence and are awarded to meritorious students who emulate the vision and values of Shri O. P. Jindal and have the potential to become leaders in entrepreneurial excellence and innovation.

The top three students (based on CGPA of previous academic year) are nominated from every year from the three core branches as well as Metallurgy Engineering branch. The first stage of selection is a leadership test, conducted online for a duration of 8 minutes. It involves a forced choice questionnaire in which you have to select out of 4 qualities, the one that describes you the most and the one that describes you the least. Of these students, two from each year are shortlisted for Stage 2, which is the personal interview.

The final shortlist will be made by giving the personality factors (Stage 2: Interview) and leadership behaviours (Stage 1: Online test) 50:50 weightage. This year, the scholarship (INR 65,000 for engineering and INR 1,25,000 for management students) was awarded to the scholars at a ceremony in JSW, Toranagallu (near Bellary) by leading industrialists in January.

OPJEMS provides reimbursements for every penny you spend on travel and provide free accommodation for the candidates attending the interview, which is usually held in Bangalore. My only regret is that I was unable to attend the award ceremony, which was conducted in the presence of eminent industrialists in Hampi, Karnataka."

FACULTY VISIT

FACULTY VISIT TO FOREIGN UNIVERSITY:

EXQUISITUS Seminars organised by the Department of Electrical & Electronics of Nanyang Technological University (NTU), Singapore invited Dr. V. Sankaranarayanan to give a talk on "Adaptive Sliding Mode Controller and its Application". The event co-organised by IEEE Singapore Robotics and Automation Chapter, invites erudite professors from all over the world to share their knowledge and experiences with the students in their field of expertise.

The seminar held on 26th August 2013, talked about Sliding Mode Control as one of the up and coming robust control techniques that is efficient in stabilizing nonlinear systems. In conventional sliding mode control design, the controller gain is over estimated most of the time which further results in high amplitude chattering and increases the control cost and size of the actuator. In contrast to this, the smaller value of gain results in poor disturbance rejection and accuracy. The main aim of the adaptive sliding mode controller is to vary the controller gain according to the disturbances which results better performance. The talk covered the design of adaptive sliding mode controller for a class of nonlinear SISO system and its application to an electro-mechanical system.

NTU is one of the fastest rising universities in Asia with its focus on energy resilience, sustainable environment and future mobility. The School of Electrical and Electronic Engineering has become one of the world's largest schools that nurture competent engineers. The visit to NTU was a notable experience for Dr. V. Sankaranarayanan where he got to interact with other luminaries in his field of research and got to see the technological innovation in place in Singapore first hand.



Dr. Jayashri of UNSW addressing the students during her visit to our department

FACULTY VISIT FROM FOREIGN UNIVERSITY:

Dr. Jayashri Ravishankar, faculty from the School of Electrical Engineering & Telecommunications, University of New South Wales (UNSW), Australia visited our department on the 23rd of January of 2014. She interacted with the faculty, research scholars and students of our department regarding the Smart Grid Initiatives in UNSW then briefed the gathering regarding the opportunities for higher studies in Australia and the UNSW. Further, she proposed research collaborative initiatives with our department and will offer a course in Electrical Safety to our students through video conferencing.

D-Day for NIT-Trichy students

Ninth Convocation Of Premier Institute Held With Students and Parents

Dennis Selvan | TNN

Trichy: A total of 1,547 students, including 295 females, were conferred with their degrees at the ninth convocation of National Institute of Technology, Trichy.

Dr R Chidambaram, principal scientific advisor to the government of India, presented the medals and awards to top-performing students before delivering the convocation address in the presence of Dr Rajaram Nityananda, chairman of the board of governors of NIT-T, Dr S Sundarrajan, director of NIT-T, and other faculty heads. As the premier institute entered the golden jubilee year on July 13 this year, the founder principal and the

Prof Manisundaram inaugurated the Saturday's event along with some of the alumni members who were part of the first day on July 13 in 1964.

About 1,000 students received the degrees in person from the director on Saturday. In all, there were 823 undergraduate degree holders, 639 got post graduates, 59 Ph Ds and 21 MS in research. The institution had made elaborate arrangements for the parents to view the convocation ceremony from various halls in the campus. A total of 38 students received recognition for their excellent performance. Compared to last year, 225 more students obtained degrees this year taking the total to a record level.

This academic year, the



A student being awarded her degree at the convocation held in National Institute of Technology in Trichy on Saturday

suit the requirements of industry based on the recommendations of Dr Kakodkar Committee. The institute initiated 25% industry inputs in all the core courses, and most

provided with virtual presentation facility. This paved the way for professors from various IITs, alumni and specialists abroad to take classes for the students. The institute

around Rs 3 crore from the Neyveli Lignite Corporation. Ministry of human resources development has given the nod to set up a centre of excellence in transportation engineering at a cost of Rs 5 crore. The earnings from research during current year was Rs 1.08 crore. The institute in line with its go green philosophy has installed a 100 KW, rooftop solar photovoltaic power plant with BHEL, Bangalore, as the EPC partner. This year also witnessed a steep increase in international placements with Facebook and Microsoft providing job placements in the United States. NIT, Trichy, has also received the prestigious MMA Award for the excellent service rendered in

THE HINDU, JULY 18, 2013

NIT-T awarded projects on renewable energy systems

Special Correspondent

TIRUCHI: In recognition of the active involvement of department of electrical and electronics engineering (EEE), National Institute of Technology - Tiruchi (NIT-T) in design and development works in renewable energy systems since 1980s, the Centre for Wind Energy Technology (C-WET), Chennai, has sanctioned projects worth Rs. 73.26 lakh.

NIT-T Director S. Sundarrajan signed an agreement recently with C-WET Executive Director S. Gomatrinayagam for execut-

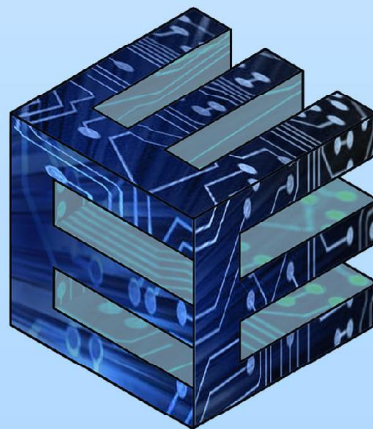
ing the project involving development of a wound rotor induction machine driven by a wind turbine for supplying power to isolated loads with a smooth control. This project would be executed over three and a half years in two phases: developing a prototype working model in the laboratory initially and field implementation subsequently, N. Kumaresan, Associate Professor and department Head, said. He and two other faculty members M.P. Selvan and S. Moorthy would be the coordinators.

Under another project worth Rs. 14.95 lakh that

the department has secured from the Power Grid Corporation of India Limited, the trio along with N. Ammasaigounden of the same department are in the process of developing a power electronic controller using FGPA (field programmable gate array) to form a micro-grid with multiple energy sources. On completion of the formulation of a successful working model, Powergrid would deploy the system to provide customers continuous, uninterrupted power supply from renewable energy sources, Prof. Kumaresan said.

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“The individual is ephemeral, races and nations come and pass away,
but man remains.”

- Nikola Tesla