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EDITORIAL

Our institute celebrated the Golden Jubilee during 19th -20th of July 2014, Hon’ble president of India Shri. Pranab Mukherjee along with Hon’ble governor of Tamil Nadu, Dr. K. Rosaiah and Hon’ble minister for higher education, Government of Tamil Nadu, Thiru P. Palaniappan participated in the celebration and offered their felicitations. About 30 of our renowned alumni were honoured on this occasion, for their immense contribution, by presenting them Distinguished Alumni Awards (DAAs). Further, Dr. N. Ammasai Gounden, Dr. S. Arul Daniel and Dr. S. Sudha, faculty members and Mrs. Shamshad Begum, Assistant Engineer of our department were also presented with DAAs for securing a degree in our department and serving the institute for long years.

During 18th – 20th, April 2014, the NBA expert team visited our department for evaluating our B. Tech. programme. At the outset, I thank everyone who extended their unstinted support in formulating all the details, preparing the complete documentation and helping the entire process of accreditation. We should acknowledge the co-operation given by our Alumni who traveled all the way to Tiruchirappalli to participate in this activity. In the recent meeting of the Board of Studies, incorporating the suggestions from the various stakeholders, the curriculum and syllabi of the B.Tech. and M.Tech. courses have been again updated, not only for meeting the present employability needs of the students but also for preparing them to take up the challenges of the fast growing technology with confidence and commitment. As a next milestone, a new industry oriented M.Tech. Programme on Construction Technology & Management has been started from this academic year (2014-15). This M.Tech. programme is completely sponsored by L&T, offered from Civil Engineering department and supported by our department along with Mechanical Engineering department.

Our faculty members have also organized a series of short-term courses in the emerging areas in the field of electrical and electronics engineering for the benefit of research scholars and the teachers of other engineering colleges. Special mention should be made that in one of the short-term courses, Dr. Rajiv K. Varma, University of Western Ontario, Canada gave a lecture to the participants through video conferencing mode and this was well appreciated by all the participants.

In the Research & Development (R&D) front, our department is doing quite well in terms of carrying out more number of sponsored research projects, developing excellent laboratory facilities, publishing the outcome of the research findings in reputed journals and applying for patents. In this context, I wish to mention that, Dr. M. P. Selvan and myself participated in the 2nd one-day conclave on R & D in New and Renewable Energy on 5th August 2014 at Vigyan Bhavan, New Delhi organized by the Ministry of New & Renewable Energy (MNRE), Govt. of India. Shri. Piyush Goyal, Minister of State [Independent Charge] for Power, Coal & New and Renewable Energy, while inaugurating the conclave, called upon the experienced scientists to provide all the guidance needed for setting up world class laboratories in the country for carrying out advanced research and urged the young boys and girls to come up with innovative ideas so that the country can be taken to the next stage of development. Dr. R. Chidambaram, Principal Scientific Adviser to Government also spoke on the need for creativity in the field of science and technology and the importance of renewable sources for energy sustenance of the nation. I strongly believe, our department will play a visible role in the establishment of R&D facilities in renewables for human resource and product development.

(N. Kumaresan)
Head of the Department, EEE

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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:
The main objective of the B.Tech. Programme in Electrical and Electronics Engineering is to prepare students for either one or more of the following:
1. Graduate study
2. Research and development work in government or industrial laboratories
3. Work in power sector and public sector undertakings
4. Work in electronic circuit design and fabrication industries
5. Work in IT and ITES industries

PROGRAMME OUTCOMES OBJECTIVES:
The students who have undergone the B.Tech. programme, will have an ability to apply knowledge of mathematics and science in electrical engineering problems.
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 practices.
8. will have 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 techniques 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 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.
JOURNAL AND CONFERENCE PUBLICATIONS


5. K. Vijayakumar, N. Kumaresan and N. Ammasaigounden, “Speed sensor-less MPPT and constant output power operation of wind-driven WRIGs”, Accepted for publication in IET Power Electronics.


**Conference publications**


4. N.Hemavathi, S.Sudha, “A Fuzzy Based Predictive Cluster Head Selection Scheme for Wireless Sensor Networks”, is accepted by the Eighth International Conference on Sensing Technology (ICST) to be held during September 2-4, 2014 at Liverpool, UK.


**INTERACTION WITH FACULTY FROM ABROAD UNIVERSITY**

RAJIV K. VARMA, Associate Professor and Hydro One Chair in Power Systems Engineering in the Electrical and Computer Engineering Department at University of Western Ontario has delivered a lecture on “Overview on FACTS Controllers” and interacted with the participants via Video Conferencing during the workshop on FACTS controllers conducted between 25th – 26th July 2014.
Short Courses

Particle Swarm Optimization
Applications and Implementation
on a Microcontroller

A one day workshop on Particle Swarm Optimization (PSO) was conducted on 8th March 2014 by a team of our faculty. The team was lead by Dr. K. Sundareswaran who was assisted by Dr. Sishaj P. Simon and Dr. P. Srinivasa Rao Nayak. This workshop, which was attended by faculty from various colleges around Trichy provided a rare opportunity for the attendees to familiarize with bio-inspired algorithms to solve complex power system and power electronics problems. It aims in explaining the fundamental concepts of the implementation of particle swarm optimization applications in power systems and power electronics. The implementation part will be demonstrated using MATLAB and microcontroller programming. The workshop was great success and our faculty managed to deliver the concepts with optimum efficiency.

Wireless Sensor Networks (WSN) and its Applications under TEQIP-II

A five day Faculty Development Program on Wireless Sensor Networks (WSN) and its Applications was conducted under TEQIP-II. The duration was from 12th-16th May. The resource persons were faculty members from NITs, Anna University and Amrita University.

The scope of the program was:

- Energy efficient schemes in WSN
- Zigbee fundamentals
- IEEE 802.15.4 MAC standard
- Energy efficient protocols for WSN
- Application of FLC and ANN in WSN
- WSN implementation using WSN Testbed,
- Machine Learning techniques using MATLAB
- WSN applications

FACTS (Flexible Alternating Current Transmission System)
Organised under TEQIP

A two day workshop was conducted under TEQIP-II for the engineering college teachers and research scholars on FACTS (Flexible Alternating Current Transmission System) Controllers on 25th and 26th of July. The coordinators were Dr. C. Nagamani and Dr. G. Saravanan Ilango. The course was designed to cover the emergence of FACTS with a perception to ascertain the ultimate limitations for power transmission and to bring out the important issues in FACTS and its applications. The workshop methodology included class-room lectures, case studies, simulation exercises and lab visits. The two day workshop was organized with sessions on:

- Limitations of transmission capability
- Emergence of FACTS
- FACTS Controllers to improve power transmission capability
- Role of Shunt Active filters in power transmission
- Role of custom power devices in distribution systems etc.

The course enlightened the participants with a new platform for research and development of FACTS controllers for power quality enhancement.
CURRENTS’14 is the annual technical symposium of the Department of Electrical and Electronics Engineering of NIT, Tiruchirappalli. Since its inception in the 1990s, CURRENTS has raised its standard over the years and has proved to be one of the most awaited symposiums of the college. The 2014 edition of CURRENTS was held on 14th -15th February and saw a record footfall of 912 participants from all over India. Dr. B. Ilango, former REC Principal and the then HoD of Electrical and Electronics Engineering Department inaugurated the symposium on the 13th of February at the EEE Auditorium in the presence of the Director, HoD and other dignitaries. The Events offered for this year included Lab Rat Race, Circuitrix, Currents Tech Quiz, Line Follower Competition, Electronic Arts and Code Currents. The five amazing workshops lined up in its arena include FPGA System Design Workshop, ARM Microcontroller Workshop, Gesture Recognition Based Robotics, Poles n’ Zeroes and Analog based Power Electronics. In addition to these interesting events, guest lectures and workshops and the technical paper presentation event ‘Colloquium’ and ‘Dhruva’ – the award for the most creative student were organized.

‘Lab Rat Race’ recorded the maximum participation amongst the events with 150 participants while Tech Quiz (112 participants), Circuitrix (84 participants), Electronic Arts (70 participants) and Rush Hour (60 participants) saw a good turnout as well. However, the event that caught the limelight was ‘Code Currents’, an online coding contest, which saw 430 participants, a majority of them from abroad. Colloquium, the paper presentation event of CURRENTS’14 witnessed a submission of more than 160 papers. After an expert review, 10 papers were selected for presentation. All these papers have been published in a special issue dedicated to CURRENTS’14 in INTERNATIONAL JOURNAL OF STUDENT RESEARCH IN TECHNOLOGY AND MANAGEMENT (IJSRTM). Dhruva – the award for the most creative EEE students saw a total participation of 61 and this event in particular received special commendation and was praised by all for its innovation and brilliant execution.

CURRENTS’14 was a symposium worth attending. Whether it was attending or organising the events, workshops or guest lectures, CURRENTS’14 has been a memorable event!
The updating of our present curriculum was initiated almost two years ago with contribution from both students and alumni. It was initiated with an objective to introduce a uniform curriculum as proposed by the Dean Academic. A survey was taken in which both students and alumni actively participated.

As a part of updating of curriculum, a preparatory workshop on theory and laboratory was conducted on 9th and 10th December, 2013 which witnessed the presence of professors from prestigious institutes and industrial experts. The external members who took part in preparing the new curriculum are Dr. Krishna Vasudevan (IIT Madras), Mr. A. Velayudham (Ex-member, Maharashtra Electricity Regulatory commission) and Mr. R. Chandrasekhar (Scientist, CDAC) for electrical subjects and Prof. S. Shanmugavel (ECE, College of Engineering, Guindy, Chennai) for subjects pertaining to electronics. Also, introduction of B. Tech Honours and new laboratory courses were proposed in this workshop.

On 14th March, 2014, certain students representing each year were chosen to articulate their views on the updated syllabus. The very same day, it was reviewed by the Board of Studies (BoS) which comprised of faculty from our department and two external members, Dr. Shanti Swarup (IIT Madras) and Mr. R. Kalliappan (General Manager, R&D, BHEL).

The numbers of electives have been increased from five to eight and also B.Tech Honours has been introduced with a couple of advanced courses. The new laboratory courses that have been included are Control and Renewable Energy laboratory and Micro computing and VLSI design laboratory. The electives have been divided into three groups, of which group one consists of electrical power, group two of electronics and group three is a combination of both.

Industrial lectures, internships or industrial training or academic attachments have been made mandatory in VI semester. Industrial lecture is for one credit while the others are of two credits each. The evaluation will be done in the VII semester during which the student has to submit a report. Our department is the first to have introduced Professional Ethics and Values as a core subject in VII semester.

The newly updated syllabus has been put to effect from the batch of 2013. As a part of updating of curriculum, a preparatory workshop on theory and laboratory was on conducted on

The following elective courses were proposed and included in the uniform curriculum:

**Group 1, Electrical Power**
- Special Electrical Machines
- Electrical Safety
- Computer Relay and Phasor Measurement Units
- Modern Optimization Techniques for electric Power Systems
- Vehicular Electric Power systems
- Distribution System Automation

**Group 2, Electronics**
- Digital System Design & HDLs
- Low power Microcontrollers
- Aircraft Electronic Systems
- Applied Signal Processing

**Group 3, General Electives**
- Industrial Automation
- Operational Research
- Digital Control Systems
NBA VISIT:

Experts from the National Board of Accreditation (NBA) visited the EEE department on 18th and 19th April, 2014. The preparation for the much anticipated NBA visit started five months before the scheduled dates which included equipping the department computer centre with new laptops for easy handling. The faculty amongst themselves formed a team, headed by Dr. P. Raja. NBA requested the team to write an elaborate Self Assessment Report (SAR). NBA approved the SAR and remarked that it was one of the most comprehensive SARs submitted by any department from our college. To compile material for the SAR, the team interacted with alumni from our department and collected their feedback on various topics such as modifications in the curriculum, upgrading of labs and industrial exposure for students. Employers of our alumni were also asked for their suggestions based on their analysis of the performance of our alumni. This information, along with response collected from the students and faculty, gave a detailed insight into our department which resulted in the SAR.

On Day 1 of the visit, the experts went around our department, inspecting the labs and facilities available to our students. They attended few of our faculty members’ classes too, observing the student-teacher interaction, effectiveness of the teaching methods and the quality of the knowledge imparted. This was followed by a session between the NBA experts, Prof. Anwaruddin Anwar, Electrical department, AMU and Prof. Alok Barua, Electrical Engineering department, IIT Kharagpur and our faculty members. Our Head of Department, Dr. N. Kumaresan, gave a presentation about the department and the activities carried out throughout the evaluation period. He put forth the achievements of our students and faculty members. He also addressed about the vision and mission of our department and what actions are in place to pursue them. The experts also interacted with the faculty, learning their opinions and contributions to the department.

Day 2 of the visit involved a meeting between the NBA experts and twenty of our alumni and students. Alumni spoke about the significance of the knowledge they gained as students in our department and how it helped them progress further in their field of work. Students spoke about the current undertakings of the department such as the subjects taught, their relevance in the industry, exposure to necessary skills during labs and the overall holistic development of every student.

The NBA stated that their visit to our department was satisfactory. The department is awaiting the results of the accreditation visit. If accredited, it would mean more opportunities for our students and widespread reputation of the department and the institute.
The alumni of the EEE department had a very active participation in the three day NBA visit and played a key role in the entire accreditation process. The department of EEE is very thankful to all the Alumni who have had extended their contributions either directly or indirectly. Their online feedback, employers’ online feedback and many of their interactions through Newsletter were instrumental. The best part was the presence of around 20 Alumni who came in person and gave their valuable feedback about the department and the institute to the NBA committee.

The alumni group is the boon that will surely take our department to heights. We wish to thank all the Alumni.

The list of those who came in person is as follows:

1. Mr. Venkatraman "TRAM" (1981)
2. Mr. S.S. Ramesh (1981)
3. Mr. T.S. Ramesh (1981)
6. Mr. S V Vishwajith (2008)
7. Mr. HN Shyam (2010)
8. Mr. Rishi Hari (2010)
10. Mr. Sambhav R Jain (2012)
11. Mr. Aashish TR (2012)
12. Mr. Subramanian Mk (2012)
13. Mr. Venkat Krishnan (2012)
14. Mr. Anup Srivatsan (2012)
15. Mr. Anantharaghavan Sridhar (2012)
17. Mr. Rajbarath Kr (2013)
18. Mr. Karthi Prakash (2013)

It was a very good get together for all, primarily the senior Alumni. Overall, everything went well. We look forward for more contributions from Alumni. For this, we have created a group in Facebook named as “NIT Trichy – EEE Alumni” for effective interaction and utilization of Alumni strength.

We invite you all to join in that group and serve your Alma-mater in the best possible way.

Kind Regards and Thanks,
Department of EEE.
Alumni Interview

It was a pleasure for the EEE Newsletter team to interview Mr. C. Arunachalam, an alumnus of EEE branch from 1983 batch. Mr Arunachalam has been running his own start-up in Chennai for the past 25 years. The following is the interview our team members had had with him.

1. What are you doing presently?

Along with one of my classmates by name S. Ganesan (same batch), we started a software development company in 1989. It’s called Blaise Internet & Technology Services Pvt Ltd. We also have a small BPO of 25 seats. We have been servicing the clients in USA and Malaysia.

2. What was the reason behind your decision to choose EEE over any other department at REC Trichy?

I did not like the engineering drawing course, and ECE those days looked quite new and tough. So EEE was my best choice.

3. There were no projectors or microphones used for conducting classes back in the 1980s. How were the classes held?

Classes were held on black boards with normal lectures from the Professors. Since the class strength used to be low (max of 40 students), we used to feel very comfortable.

4. On a lighter note, how was it to attend the first hour classes? Did you always make it on time?

We had labs in the early mornings (7.00 AM) and then we used to have bread and butter for breakfast, we never felt it hard to attend the first hour (10.00 AM). But in the afternoon classes (at 2.00 PM) we used to feel sleepy. We had one and a half hours for breakfast and one and a half hour for lunch and so we had enough time to reach the classes in time.

5. Of the four years spent at NIT Trichy, which can you recollect as your most favourite memory that you still cherish about the college?

We had Five Year degrees those days, and I enjoyed the Second Year the most. The first semester was spent trying to escape from ragging, and then we started getting used to the campus life in the second semester. So by second year, we knew how to enjoy the campus life with friends. We also had 6 to 7 movies screened in a month.

6. Roughly 20 years since the inception of the department in 1964, how much change have you seen over the four years at the college?

We did not have the auditorium behind the EEE dept and also there was only one lab in the ground floor. Now we are seeing some more additional labs. Otherwise it looks the same. The big change was the common Computer Centre with lots of computers. And also a few new hostels and mess.

7. What was the best life’s lesson that NIT Trichy taught you and you wish to share with the readers?

We used to spend more than two months in classes and then announce a day where we would stop attending the classes and inform our Professors that we want to start our ‘Study Holidays’. We used to have more than two months as Study Holidays and we used to study all the subjects ourselves. Our self study of all the Subjects in each semester built the self confidence in us that we can handle any technical issues ourselves. Now we are able to handle any new development comfortably.
ALUMNI INTERVIEW

8. How big an influence has NIT Trichy made in your lifestyle?

We used to live very economically those days, with a BATA chappal and a few Festember T-Shirts. Most of us had Merit Scholarships and in fact we used to pay our Mess Bill after accumulating it for 10 months. When the Merit Scholarship got debited to us, we would use it to clear all the mess bills. So we used to have a max of Rs.20 to Rs.50 in hand at any point of time and that taught us how to lead an economical life.

We used to walk a lot in the Campus and we had sports and karate. We had nice mess and the food used to be VERY GOOD. (In fact when we came to NIT on our completion of 25 years, I had a taste of the food in one of the messes and it was really terrible compared to what we had in our days.) So with a good food, clean healthy environment, hardly any one of us felt sick.

Since most of the students were picked up by our beloved Principal Prof Mani Sundaram, we had a bright set of students and that made our study environment very good.

NITT with the compulsory hostel, was one of the few colleges that had single room for every student and that made us to plan our time effectively. At the same time we used to enjoy our chats in the Wing without disturbing the privacy of our friends.

We have a nice temple and I used to go to the temple in the evening and we had started Bhajans on Fridays with some of the students coming with instruments to perform the Bhajan.

The above components make you perfect when you come out of the college and you are ready to take off.

9. Apart from the curriculum, what all extra-curricular activities, teams or clubs did you involve yourself in?

I was part of the Karate Team and NCC. I was the Secretary of Institution of Engineers and also had a leading part in the Temple Committee. We used to arrange industrial visits using IE. As part of the temple Committee, we used to bring many religious personalities to the campus for visits, lectures.

10. A message you wish to convey to the students and all the readers?

Having entered into a very good college, every one of you has to utilise your 4 years in wide extra reading and interaction with your professors that will bring a deep understanding of the subjects. In fact you have to discover the subject area where you would be very much interested in and develop that further in these 3 years of EEE. This foundation will fetch you and the college many laurels in the years to come. All the Best!

~C. Arunachalam (EEE – 1978-83), Chennai.
94448 55272
Semikron Electronics, in association with EEE department, organised a one day industrial workshop on 8th April, 2014. This was conducted under the sponsorship of TEQIP. The workshop extensively covered the Insulated Gate Bi-polar Transistor (IGBT) from the device level to the level of formulation of an inverter. With the predominant use of power semiconductors in switching applications, it is of utmost importance to achieve minimum power losses. Experts from Semikron Electronics came down to NIT Trichy to conduct classes on IGBT technologies, drivers and its selection. The workshop also elaborated on dual IGBT modules and inverter stacks.

With the quality of the workshop foremost in their minds, the number of participants was limited to 60. Semikron Inverter modules were also provided to the participants at free of cost. The one day extensive training in IGBT was beneficial to all, enriching them in the basic principles and operating modes of IGBTs.

**PSCAD Industry Workshop**

Two-day industrial workshop on ‘Power System Modelling and Simulation with PSCAD’ was conducted by Dr. M. Venkata Kirthiga, Dr. M.P. Selvam and Dr. S. Moorthi during 12th – 13th May 2014, under TEQIP. Mr. Kiran Kumar S. Math, Junior Engineer, from Nayak Power Systems was the resource person and he handled four sessions. Four more hands on sessions were also conducted assisted by our research scholars. Around 50 M.Tech and Research scholars were benefitted by the course. Topics on Fundamentals and Introduction to PSCAD/EMTDC, Simulation of simple AC Systems and custom modeling, Modeling and Simulation of Induction Machine, Transmission lines and Synchronous Machines were dealt in the workshop in detail.

**Low Power Controller Design using MSP 430 Microcontroller**

On 20th and 21st of June 2014, the EEE department conducted a two day short term course on Low Power Controller Design using MSP 430. The course was conducted in collaboration with Texas Instruments. The 30 participants of the course received extensive theory and lab sessions in MSP 430 based system design directly from the industry experts from Texas Instruments. Each participant also received a workshop kit from TI.

The MSP 430 is an Ultra-Low Power, Energy Efficient 16 bit RISC Mixed Signal Microcontroller manufactured by TI. The two day course covered the architecture, data, program memory, peripheral organization and special features of MSP 430. The participants profited immensely from the interactions with the experts from TI, gaining outlook on Mixed Signal Controllers which can be extrapolated to any other platform. The course was tailored to meet the requirements of each participant and was successful in its aim to educate people in the design and application of MSP 430.
Scholarship and Internship Experiences

DAAD-WISE Internship - How to Apply

The DeutscherAkademischerAustauschDienst (DAAD) Working Internships in Science and Engineering (WISE) Scholarship is a prestigious academic scholarship given by the DAAD Organization to Indian students from premier institutes in India to pursue a research internship at research institutes and universities in Germany. Every year, around 150 students from India are awarded this scholarship which provides full funding and support to pursue their internship abroad. The student's requirement is to get an invitation from a German professor/researcher to work at their institute, and then apply for the scholarship at the DAAD organization in New Delhi, India. The scholarship is awarded based on the student's academic standing. The ideal time to start applying to professors in Germany is in the month of August. The deadline for applying for the DAAD scholarship is November 1, 2014. The following steps are very important while applying for the long process.

1. Be clear in your field of interest- be it Electrical engineering (Power systems, Machines, etc.) or Electronics (VLSI, Digital/Analog electronics, Communications, DSP, etc.)

2. Look up the German universities online- the TechnischeUniversitäts and the Max Planck Societies are the well-known universities which take international students as interns.

3. Visit the Electrical Engineering department homepage of your university of interest and go through the profiles of the professors whose research areas coincide with your interests. Remember that your past experience in the field (or a related field) adds to your chance of being selected.

4. Collect the email id of the professor and prepare to send him/her an email with a cover letter with an attached copy of your (honest) resume. The formats of these two are important. Be careful with your grammar and do not presume to use flowery language. Keep it simple and neat.

5. It is advisable to contact the professor via email at around 9 to 10 am (in Germany’s time) as he/she may receive multiple emails from interested candidates. It is possible that the professor may not even notice your email, but perseverance does pay off.

6. Do not express your interest in different fields and contact multiple professors in the same university within a short span of time, as this would carry a questionable image of you.

7. If you fail to get a reply, send a short reminder email to the professor about a week later. They are busy people, and they might read your application after a long period of time.

8. Once you receive a positive response, be prepared to face a technical interview over Skype/phone, as they would prefer to test you in the field before accepting you as an intern.

9. Be formal with the professor and carry a confident image of yourself in your emails and conversations.

10. After completing this tedious task, all that is left is to visit the DAAD Website, get the list of documents required to apply. You will have to allot at least a week to get these documents from the institute, besides writing personal statement of purpose and get a recommendation letter.

11. Once these are completed, you may post the application to the DAAD Head Office in New Delhi, and the results of the final selection will be intimated to you in the month of January 2015.

All the best!

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THE DAAD-WISE EXPERIENCE

I did my internship at the Chemnitz University of Technology in the Department of Electrical Engineering and Information Technology at the Chair of Measurement and Sensor Technology. I was fortunate to have been selected for a scholarship by the Deutscher Akademischer Austauschdienst (DAAD) Working Internships in Science and Engineering (WISE) Program. I worked under the auspices of Prof. Dr.-Ing. Olla Kanoun and Dipl.-Ing. Qinghai Shi on the topic "Time and Frequency Domain Reflectometry for location of faults in transmission lines". Where I also implemented a modified differential evolution (DE) algorithm for fault location and network reconstruction. A Data acquisition system was designed in LABVIEW and signal processing in the frequency domain was performed in MATLAB. The DE algorithm was also implemented in MATLAB and the results were accurate and extremely satisfactory. The novelty and accuracy of the algorithm renders it useful in large networks, where speed is a necessity in the process of fault location. This project was part of an ongoing state government initiative towards novel fault analysis techniques which was undertaken at my host university. The experience was truly enriching and I learned a lot in my two months at the university. Besides my own project, I was exposed to the current research areas of other departments as well. The German professors are very accommodative to international students and are easily approachable. I had a student buddy who was really nice and the students at the university were extremely friendly. I was able to interact with professors and students alike from different countries at my department. The university was very impressive and interns were provided with access to all useful facilities like the library and public transportation subsidies as well. This opportunity was very useful for aspirants of graduate studies who wish to get an international exposure and work with researchers abroad. The German work culture is admirable, and their general discipline and overwhelming friendliness was very good. I also got some time off in the weekend, where I visited some of the neighboring countries with my friends. The 2014 FIFA World cup fever was strong all over Germany, especially in the euphoria of their triumph and I was so glad that I got to be part of that as well. All in all, it was an experience of a lifetime and I gained so much from it. It is a really amazing opportunity and I strongly encourage my juniors to try their best and secure this amazing experience.

-P. Rajaraman

I had the most amazing experience till date, living and researching in Germany. I had requested for an internship in the field of robotics and control systems design and was fortunate to get a positive reply from Prof. Jozef Suchy, Chair for Robot Systems, at the Chemnitz University of Technology. I was told that I would be working on the project titled "Fusion of torque/moment information with vision information for the control
humanoid robots”. During the months leading up to the internship, I was in constant touch with my professor, requested materials that helped me bridge the gap between my knowledge and the knowledge needed to make meaningful contribution to the research. Though I did not work with actual humanoid robots, I was given an option to choose between the KUKA and the STAEUBLI RX-90 industrial robots of which I chose the latter. I was required to come up with an efficient algorithm to enable the robot to pick and place objects of different shapes, into their respective holes on a rotating circular board. Image processing with OpenCV software was needed to obtain the vision information from the scene (the board with holes) working with the Microsoft developed Kinect camera. This included experimentation of various feature extraction algorithms and matching the strongest of the features from the query scene and the reference scene (to where the robot had to be moved).

-J Siddharth

I did my internship at Technical University of Hamburg-Harburg, Germany in the summer of 2014. I was fortunate enough to be selected for the DAAD WISE programme. The two month internship was packed with work and fun. I worked in the Department of Nanoelectronics under the guidance of Prof. Dr. Wolfgang Krautscheider who specializes in the field of Medical Electronics. My project was titled as “Circuit Design for the Amplification of Neurostimulation Pulse Trains”. The main aim of the project was to evaluate the scope of the ADS1299EEGFE Evaluation Board from Texas Instruments for the measurement of NLG and EMG signals and use them to calculate the Nerve Conduction Velocity. The raw EMG signals measured with the board were filtered digitally using MATLAB. The nerve was excited by an external stimulus of known frequency and the resulting action potentials were picked up using surface electrodes. The time lag could then be used to calculate the velocity of the nervous response. This chip would then be integrated into a portable device to enable the patient to measure his/her nerve conduction velocity with ease. My project was basically a sub-part of a major ongoing project involving the design of a highly efficient Prosthetic Arm. The internship turned out to be an enriching experience and provided great exposure to the world of research. It also gave me an insight into the European culture. And yes, not to forget the seven countries I visited during the weekends with my peers from NIT Trichy. And last but not the least, I can proudly say “I was in Germany, when Germany lifted their 4th world cup” and it was like a dream come true.

-Parikshit Dey

I did my summer research internship at RWTH (Rheinisch-Westfälische Technische Hochschule) Aachen University, Aachen. Topic of my project was “Reliability Analysis and Embedded Processor”. This intentional internship was successful due to DAAD funding. My Project work was based on the topic Application and Architecture-Level Error Prediction Analysis for Embedded Processor. I was primarily assigned two tasks. The first one was the development of image processing applications for the verification of error propagation prediction in the embedded processors which was previously developed by my mentor. The second task was to implement a few advancements in the code developed previously for error prediction in a HDL language developed at my college RWTH University. My work included the study of various stages in the processor, data flow and various causes of error propagation in the data carried by the processor. The entire work was based on coding in C and
HDL language called LISA (Language Instruction Set Architecture). The internship experience in Germany was completely different and enjoyable. The universities are equipped with latest technologies. On the whole, it was a resourceful experience and I strongly recommend students who pursue higher studies to go for it.

-Sai Rama Usha

PROCTER AND GAMBLE

I was one among the 15 fortunate engineers who interned at P&G this year. Working with P&G wasn’t limited to just intellectual and learning process but was way beyond that. It was an eye-opener to the worldly knowledge of skills, team work, corporate culture & discipline, planning & organized working, business communication skills and not to forget, balancing work & life. The experience of working on live projects for the first time was very exciting and challenging. I worked on PAMPERS Pants model and was completely technical. My project titled ‘PANTS ELECTRICAL PROJECTS’ had three deliverables focusing on the optimization and improvisation of the vision system which was newly deployed in P&G Baby care unit. I got to learn and explore new software based on image processing technology and also worked on tech-documentation and quantification of the proposed solutions. My internship escalated my confidence through interactions with employees of different sector. The best part was the fact that the interns are considered like any other employee in P&G and I was given complete freedom in decision making. In addition to this, the dynamic work culture of ‘addressing people by first name’, ‘safety first’ note, ‘life skills’ sessions, ‘work hard & party harder’ outlook are simply commendable. In short, I had indelible life time experience with P&G that I would always cherish through.

-Sajini Sree

SAN DISK

SanDisk came just after 6th semester exams, offering internship in firmware, software, analog and digital domain. They shortlisted some students based on their CGPA. After short listing there was telephonic interview. In the interview they asked some basic questions from machines, a puzzle and questions related to C and C++ and some question from electronics. So, in a 35 minute interview they almost covered the entire syllabus.

Our internship started on 26th of May. It was an 8-week internship program. I was assigned to work in RPG (Removable Product Group), on SD (Secure Digital) card. I worked in "SD system engineering" team on project "platform validation". When a new design of a SD card is manufactured and out of the fabrication facility, we have to validate the functionality of that card before sending to consumer. My work was to write scripts to validate the working of cards. It basically involved reading and writing capability of the card at different operating frequencies and at different temperatures. Working in SanDisk was an awesome experience. There were no time constraints, no attendance and a great working environment. I met some wonderful people and a few seniors who helped me a lot in my work. We also participated in some social responsibility activity conducted by SanDisk. Best part was the birthday celebration, they celebrate birthday of each person and do GPLs also.

-Ashish Kumar

QUALCOMM

I did my two months of internship at Qualcomm. My project was titled “implementation of intelligent synthesis system” in which I had to code in shell scripting and TCL (Tool Command Language) for automation of the RTL synthesis to netlist for various cases so as to find the best design based on the report generated at the end of synthesis. I was exposed to new software tools which were used to synthesis the RTL code. The company had provided good accommodation and food. The company also organized various events such as tree plantation event, visit to an orphanage and a Movie’s day out. Overall it was an enriching and a good learning experience

-D.Suzith
RELIANCE INDUSTRIES LIMITED
I was selected for Summer Internship at Reliance Industries Limited through campus. The project I chose led to my posting at the Petrochemical Unit of Pataulganga Manufacturing Division. Although the location was quite remote, I was provided accommodation at the scenic RIL Township at Lodhivali, on the Mumbai - Pune highway. I had no trouble acclimatizing as there were 18 other interns, all from various IITs and NITs. My project was on ‘Variable Frequency Drives and its applications in the industry’. I struck an instant rapport with my mentor, thanks to my in-depth knowledge of filter coffee and South Indian cuisine. Under his able guidance, I was able to study the operating conditions and parameters of certain VFDs at the plant and evaluate their performance for each application. From there on, I shifted my focus to the 600kW MV drive, called the ABB ACS1000- a drive unique to the entire manufacturing division.
I was lucky to have gained the acquaintance of the several senior engineers who were kind enough to give us insights on various topics ranging from the RIL power system to nearby dhabhas. I was thrilled when they invited us to be a part of the Steam Turbine Generator synchronization process. Hands on experience with protection and switchgear equipments also helped a lot.
The wonderful exposure made my summer a memorable one and I would surely recommend the experience to my juniors who’re eager to carry out a project in Power Electronics or Power systems!

-Ashwat K A

I was one of the lucky candidates to be selected for Summer Internship Program 2014 at Reliance Industries Limited. My posting was at Nagorthane and my internship started on May 19, 2014 and lasted for a period of two months. My project was on “Power System Analysis and Short circuit Current Characteristics”. It was basically a live project on which a team of Senior Engineers had already been working on for one year. I had the opportunity to work with them for two months which was a great learning experience. I wound up my project by submitting a report and giving a presentation on the final day, based on which the HR team evaluated my work.

-Anshul Goyal

ITC
I interned in the Cigarette Brands and Supply Chain Division of ITC Ltd during the summer. I was posted in their Tobacco factory at Saharanpur.
The factory itself was an engineer’s delight. Each machine produced 12000 cigarettes a minute and the factory had a capacity to produce 140 million cigarette sticks a day. Coming to my project, it was titled “Implementation of Visual Management”. It is a sub-concept of lean manufacturing where there is real time communication of data through visual means. Though off-track for an electrical engineer there were many practical takeaways from the project. The two months that I spent on the shop floor was one of the most enriching experiences of my life. I was encouraged to look at every aspect of my project from the viewpoint of the workers. It was always a delicate balancing act, trying to be not too nosy with the union activities and at the same time getting the management’s views across. The work hours were very demanding, with an average of 14 hours at the factory followed by a good amount of time spent in the room trying to analyse the data obtained during the day.
The support structure was excellent, the managers were ever helpful and always accessible. They were willing to let me experiment on the shop floor and if something went wrong they were always at hand to shield me. The resources at my disposal and the disposal and the decision making powers given were far beyond what is given to an intern in other companies. The interaction with HR managers, engineers and workers during the course of my internship gave me three completely different perspectives for every issue in my project. This has helped me shape my thought process. The internship definitely lived upto its tagline – KITES, Soar new heights.

-Vignesh Meyyappan
TEXAS INSTRUMENTS

I was selected for a summer internship at Texas Instruments India, Bangalore under the UnnaTi internship program. I was working in the Analog division in the SAR ADC Group, and my project involved designing a USB powered test system for testing the dynamic performance (SNR & THD) of a SAR ADC. The first day was orientation, where the new interns were welcomed to TI, followed by a series of technical and soft skill training programs over the first week. The internship was a really good learning experience. The flexible work hours really helped me in working long or short hours as per my requirement. Also, the interns participated in a Design Contest where one can win cool prizes like an iPad mini. We also participated in Power Lunch and High Tea sessions, where we were able to interact with senior leaders in TI. Towards the end of the internship, we presented our work in the form of posters on Intern Day. Overall, the two month internship at TI was a good balance between work and fun.

Lakshmi Narasimhan B

BROADCOM

Certainly one of the best summers of my life, the period of internship at Broadcom Communication Technologies was a complete package of work and fun. The two month internship was an amazing learning experience. My project was titled “Validation of Post-Synthesis Metrics using Neo4j”. The project required basic knowledge in scripting languages and database systems. I was mentored by a Principal IC Design Engineer, who gave me the opportunity to be as innovative as I could be while giving me the technical support I required. The weekly reviews helped me update my team on the status of my project and to keep me on the right track. I was also invited to attend presentations by other members of my team, giving me equal opportunities as other employees of the company. Apart from the hands on experience on live projects, you get to know and interact with some of the best brains in the company. You also find so many of our college seniors across different teams. We spent our weekends going around the garden city, visiting places. Bangalore, with its pleasant weather, always gave us the best days when we went out. It was a great intern experience at Broadcom.

-Madhumati G

I did my summer intern at Mobile and Wireless Group (MWG) of BROADCOM, Bangalore. My work was related to logic synthesis in front end design and I learnt a lot from my mentor who always kept me motivated and enthused. It was the best summer I ever spent. We all interns were treated like full-time employees and were enjoying all the privileges which they had. The atmosphere inside the company was very pleasant. You can work as long as you want and if bored you can enjoy unlimited refreshments and spend time in the playing area. Moreover, we spent our weekends exploring Bangalore city which made this internship even more memorable.

-Rohit

The selection process was done through a CV shortlist and a subsequent telephonic interview. The questions were based on basic VLSI. Interns were assigned to different teams once we got there. I was assigned to the physical design team. My project was to develop a completely automated tool which would run quality assurance checks on incoming libraries fed to Atoptech tool (backend design tool). The tool was developed using PERL scripts. At the end of the project, we had to give a presentation on our projects. Bangalore has a lot of places to hang out and a perfect climate. So we had a great time.

-Roohi Raj
Awards Received By Faculty And Students

- Four members of the EEE Department were given the “Golden Jubilee Distinguished Alumni Award For Serving Personnel At NIT Trichy” sponsored by RECAL during the Honorable President’s visit to the campus on 19th July on the occasion of the Institute’s Golden Jubilee Celebrations. The members are Dr. Arul Daniel, Dr. S. Sudha, Dr. N. Ammasai Gounden and Ms. A. Samshad Begum.

- Students’ achievement POSOCO award: Dr. K. Vijayakumar & Dr. Ms. B. Indu Rani were awarded The POSOCO Power System Award (PPSA) - 2014. PPSA is a joint venture of Power System Operation Corporation (POSOCO) and Foundation for Innovation & Technology Transfer (FITI), IIT Delhi. The award is being funded by POSOCO and FITI will function as its nodal agency to implement the program. The objective of this PPSA program is to reward the reputed & immediate creative research accomplishments in power system and related fields from various technical institutes like IITs & NITs, etc.

The Award aims to-
3. Motivate students to undertake further research & innovation in the Power Systems.
4. Collect and disseminate successful technologies for possible industry adoption.

Forthcoming activities of EEEA:

- Inauguration and presentation by students about their experience about internships and scholarships.
- Workshops: MATLAB, PSCAD, ETAP, PSPICE.
- Help Classes for second and third year students.
- Special lectures by Professors from Universities abroad for information regarding higher studies.
- Workshop on Technical Writing.
- Currents’15.
- Practical Electrical Engineering Workshop.
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Higher education institutions must take ratings seriously: Pranab

Celebrations

President Pranab Mukherjee at the golden jubilee celebration of NIT, Trichy, on Saturday.— Photo: A. Manthiram

Institutions of higher education should take international surveys seriously as active participation in the rating process would help their development in the right direction, President Pranab Mukherjee said here on Saturday.

Participating in international rankings has positive spin-offs by way of boosting the spirit of students and faculty, besides ensuring better placements for students.

"Indian institutions do not figure in the top 100 places in prominent international surveys. Since September 2012, I have been rating in all my interactions with higher educational institutions the need to take the rating process seriously," he said at the golden jubilee celebrations of the National Institute of Technology, Trichy. "However, it was encouraging that international rating agencies had started recognising the quality of our institutions," he said. Mr. Mukherjee hoped the suggestions made at a conference of the directors of NITs at Rashtrapati Bhavan last year would be implemented in a time-bound manner. Governor K. Rosaiah said that institutions of higher learning should play a participatory role in enhancing the academic standards of students and networking of institutions was important.

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Business Standard

President Mukherjee underlines importance of knowledge and innovation

ANI | Tiruchirappalli (Tamil Nadu) July 19, 2014 Last Updated at 20:20 IST

President Pranab Mukherjee inaugurated the Golden Jubilee celebrations of National Institute of Technology Tiruchirappalli today.

While speaking on the occasion, the President said, "knowledge and innovation are the underpinning of progress and prosperity in the twenty-first century. In this age of globalization, we can derive competitive advantage only from an eco-system that is conducive to new learning, research and innovation.

" NITs must work towards promoting scientific temper in their students. Yet, given the present socio-economic condition of our country, the thrust of research must be to erase backwardness and wipe out deprivation. Innovations must improve the state of the underserved, who want a positive difference in their lives. Institutions like NIT Trichy must support ingenious ideas that promise betterment for those aspiring to rise up the socio-economic ladder - help a farmer till the soil better, an artisan perfect his craft or a small entrepreneur improve the productivity of his venture," he added.

The President further added that some of our IITs are in the top 50 in civil and electrical engineering. Five institutions are amongst the top 20 universities amongst BRICS nations. The number of Indian institutions in the top 100 in Asia has increased to 10 this year from 3 in 2013. The NITs, in particular NIT Trichy, should take a cue from successful Indian institutions on how to approach the rating system. Participating in international rankings has several positive spin-offs, in terms of intangibles like boosting the spirits of students and faculty, to more tangible benefits like better placement for students. More importantly, active participation in rankings will propel the development of institutions in the right direction.
GLORIOUS VIEW OF OUR DEPARTMENT

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"If something is important enough, even if the odds are against you, you should still do it."
- Elon Musk