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Message from Chairman

Dear members,

I am happy to inform you that we had a very useful face-to-face meeting of the India Council on 27th April at SRM University. There was an interesting question raised by a member of IC that what is the Rationale behind setting of IC and what are the roles and responsibilities of IC? He further added "Frankly speaking till today I am unable to find out the exact role of IC and its relation with Sections". This question would have been bothering many of you. We discussed on this and the members present were convinced after knowing the provisions given in the MGA Operations Manual that setting of IC has a purpose. I want to share that with you all. MGA Operations Manual states, "A Council may be formed by agreement of a group of contiguous Sections and it exists at their pleasure. It is intended to act as a subordinate committee of the Sections and they have the right to direct its operation. It is formed by the Sections to do only those delegated tasks that can be best done together by the Sections rather than singly by each Section. The Sections retain their recognition as the basic operating, executive and administrative unit of the IEEE". With reference to Council Funds, it says that financial support for Council activities shall be obtained from the Sections comprising the Council or from income producing activities, such as symposia and conferences, sponsored by the Council, or as otherwise provided by the Region. Thus, it is very clear that if the sections want they can make the council function to the benefit of the sections. What is required is a united approach to serve the IEEE community through coordinated activities.

There is another problem bothering the EC of the India Council since the EC took charge of the Council - Transfer of the Account and Funds of the IC from the past chair and the past secretary-cum-treasurer to the new chair and secretary-cum-treasurer of the Council. This issue was discussed and the members of the EC resolved to constitute a committee with Mr. Deepack Mathur, Chair-Elect and Dr. Bhim Singh, Delhi Section Chair to have a face-to-face meeting with Dr. R. G. Gupta to solve the issue. Both the members have agreed to work on the issue and sort out the problem.

As you all know a senior member of IEEE, Prof. Dr. A. Prabhu Britto, Professor of Electronics & Communication Engineering and Bio Medical Engineering and Dean (Research & Development), VMKV Engineering College, Salem, Tamil Nadu, is washing his dirty linen in the public pool. It seems, that he has lost all his ethical values that he is supposed to have learnt from the ethical codes of IEEE. He has made, a non-issue as a big issue and blew it up in the entire IEEE community around the world. If he had been a sincere IEEE member and a serious academician, he should have tried to understand the telephonic conversation he heard from someone through a thorough investigation and proper enquiry with the concerned authorities about the same and then he should have acted upon it if at all if he had noted any issue in the conversation. I feel sorry for his rubbish action and attitude. My appeal to all my dear IEEE members is that membership in IEEE adds value to us because of the high ethical codes pronounced by IEEE. Anyone who does not practice the IEEE's ethical codes he or she is unfit to be a member of IEEE.

R10 Women in Engineering (WIE) has promoted both the IEEE R10 WIE Section Affinity Group of the Year Award and the IEEE R10 WIE Student Branch Affinity Group of the Year Award. These awards are based on programs that took place during the period of 1st January to 31st December of the preceding year. Nominations are accepted till 5th July 2013. We suggest the WIE Student Branch Affinity Groups in IC to send their nominations and win this award.

I am happy to inform that IC web site is being updated with History of India Council. Thanks to Mr. Anthony Lobo for providing the material from the collections of Mr. H. Kaliyanasundaram, the popular Indian IEEE Leader, affectionately known as HK, in addition to the information on the IC chairs in the past, provided by Mr. Asthana.

I would like to end my message by thanking all of you for your support to the IEEE initiatives and activities and looking forward to your continued support and inputs.

With kind regards
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Message from Editor

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Dear readers,

From the chairperson's message, we note that the outcome of the F2F meeting of the India Council Execom has been fruitful and it has provided a great amount of clarity on the roles and functioning of India Council. Members expressed concerns on a no. of unauthorized events that are being held or announced as being supported by IEEE or IEEE OUs. In order to maintain the quality and high standards associated with IEEE, it has been decided that OUs will exercise their discretion in extending support to the events. Further, it has been decided that only such events, that are communicated to the Editor of IEEE IndiaInfo, the IC NL will be listed in the forthcoming events column. The Section and Society chairs are requested to keep the Editor informed accordingly on the events supported by them.

The article "The Anatomy of Autonomy in Technical Education" by Dr. Ilango, former VC of Bharathiar University and a member EAEC, NBA is a revelation on the status of autonomous institutions offering higher education. In this article, he has outlined the problems and suggested solution.

As indicated in our earlier issue, we are starting a series of articles, which will deal with the skill development for engineering graduates by Mr. Ballav Sahoo, Co-Founder & CEO of VictoryMind Educare Services. The first one appearing in this issue is on "Importance of Academic Skills for Engineering Graduates" and deals with skills that are collection of study habits, learning strategies, and time management tools that help students learn and absorb lectures and lessons.

It has been reported recently that the amount of carbon dioxide in the atmosphere has exceeded 400 parts per million (ppm) for the first time in 55 years of measurement - and probably more than 3 million years of Earth history. At the beginning of industrialization, the concentration of CO₂ was just 280ppm. At this stage when this dubious milestone is reached, all of us need to be aware of the scientific reality of climate change and how human society should deal with the challenge. Coincidentally, the growing demand for power and usage of fossil fuel, which increases the emission greenhouse gases, can be overcome by harvesting the solar power, which is free. The article "Can engineers make a difference to the Indian society?" by Mr. P. B. Varadharajan, Executive Secretary, Renewable Energy Harvesting Environment Network Association (www.rehena.org) rationalizes the need to go in for solar power generation and challenges our engineers. A good read.

For the column, "News from Sections", the response from various Section has improved. The TI India Educators' Conference (THIEC 2013) held at Bangalore is a good initiative and the announcement on "Texas Instruments Innovation Challenge: India Analog Design Contest" whose details are available at www.unity.in/adc will interest the readers. It is great to read from the Kolkata Section on the felicitation of Dr. Amiya Kr. Chatterjee, an eminent electrical engineer and educator of the country, on 3rd May 2013 on the occasion of his birth centenary being celebrated this year. The conference on "Information Systems and Computer Networks: ISCON-2013" organized by the UP Section along with GLA University is a timely one to address the growing importance of the computer networks. As usual, the Madras Section has reported a no. of national and international conferences, workshop, Faculty Development Programmes, SIGHT and Student Network programmes. It is a pride to note that Dr. M. A. Atmanand, Director, National Institute of Ocean Technology (NIOT) and Chair, IEEE OES, India Council, Chennai was invited to deliver a talk at the plenary session of the Symposium on Underwater Technology 2013 at Japan whose report has appeared in this issue. We know other Sections and Societies are equally active across the country and many events are happening. We expect them to share the details through the pages of this newsletter. We request the OUs (Sections, Student Branches and Society Chapters and Affinity Groups) to send brief reports on their activities for publication in the newsletter as per the guidelines available at <http://goo.gl/dzSII>

In a recent two days, national conference on "Sustainable Institute Industry Partnership" organized by Society for Educational & Entrepreneurship Development (SEED - <http://www.seed-india.in>) at IIT Madras, few salient points emerged include: NBA has mandated the involvement of industry in curriculum development, training and assessment. To achieve this, an industry advisory committee has to be constituted for every program by each college; Govt. has to provide incentives, such as tax concession to industries, for facilitating linkages with educational institutions; Faculty members of colleges have to be trained to effectively implement industry interaction activities; Soft Skills training has to be provided to students in order to make them effective in industries through finishing school programmes; The collaborative activities should result in projects, papers, patents and placements; and Periodic review of the activities has to be conducted to continually improve the Industry Institution engagement process. We trust these will be practiced for producing high quality graduates.

We are sure that our regular column, IT happening by Prof. S. Sadagopan, Director, IIIT-Bangalore and the Information Resources including the Books and TechQuiz by Mr. H.R. Mohan would interest our readers. We request our readers to share interesting information they come across and also provide feedback, by emailing them to ieeeindiainfo@gmail.com

The Anatomy of Autonomy in Technical Education



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Acquiring the status of autonomy is a pride and privilege for educational institutions in general, and for technical institutions in particular. Upon conferring the status of autonomy, an institution can excel academically in many ways. Formulating the curriculum, designing the syllabus, updating both as frequently as possible in accordance with advances in science and technology and changes in industrial needs, setting question papers and valuing answer scripts, are some of the privileges of autonomous institutions.

In the University of California at Los Angeles, where I was working as a Visiting Associate Professor in Electrical Engineering, in the early eighties, a strategy was deployed in framing the syllabus to automatically include latest developments in science and technology. Almost for every subject, the syllabus written briefly in 5 or 6 lines, will end up with the words “recent advances”. This made the syllabus dynamic and relevant. An instructor, as he teaches a subject, can include the latest innovations in that area, as and when they emerge. Such a syllabus is possible, when the question paper setting is fully internal.

Apart from the above advantages, an autonomous institution can declare the results early and redress quickly the grievances of students pertaining to setting of question papers and valuation of answer books.

The pattern of question paper can be designed to encourage critical thinking, develop analytical skills, formulate complex engineering problems and accomplish innovative design of equipment and products. In quantitative engineering subjects, the question paper instead of having descriptive questions, such as, “Describe, Explain, Enumerate, Discuss,...” , can have analytical questions, such as, “Design, Calculate, Find out, Work out, ...” The valuation can be made serious and strict; liberal moderation, as prevailing in non-autonomous institutions, where central valuation/*manipulation* is in vogue, can be avoided.

The syllabus can be framed to meet the demands of Program Educational Objectives, Program Outcomes, Course Outcomes and Graduate Attributes, as stipulated in the latest guidelines of the NBA [National Board of Accreditation] for accreditation of UG Engineering Programs. This is in

accordance with the goal of becoming a signatory to the Washington Accord.

An autonomous institution, with all its liberty and authority, should be able to produce globally employable engineers, with the necessary communication skills, analytical skills, team spirit, inter-personal skills, leadership skills, design skills, a flair for innovation and creativity, knowledge of fundamental concepts, ability to formulate and solve complex engineering problems, environmental and social awareness, patriotism, integrity and commitment in building the nation, etc.

It is pertinent to raise a million dollar question here: “Have we used the prowess and bounty of autonomy to benefit the student community?” In a vast majority of autonomous institutions, the frank answer is “No” or even “Not at all”! We see many non-autonomous institutions getting autonomy conferred upon them, after several years of functioning non-autonomous and keeping a overall pass percentage of 60 to 75 %; *with autonomy conferred, the pass percentage suddenly shoots up to 95 to 99%, from the very first year!* What a miracle! Have the students become brilliant overnight? Have all the untrained teachers been replaced with great teachers? Then what made them almost all pass? The answer is a open secret and is shameful!

An autonomous institution misusing autonomy to boost marks and pass percentage, actually performs much worse than a non-autonomous institution in terms of the Graduate Attributes! With a concocted and fictitious pass percentage of 99, a typical autonomous institution gets a placement record of 40% or less. The academic deceit practised is hence amply demonstrated. This year the placement has taken a severe beating, resulting in <20% placement in many an institution, but the autonomous institutions continue to show >95% pass! Many academicians have turned into politicians; they bow unto unscrupulous and short-sighted managements to attain selfish goals and hence artificially push up pass percentage, without ensuring effective teaching-learning processes; our excellent young human resources are being wasted in the bargain! Young teachers lose interest in learning and in teaching. The exploitation of the gullible parents, and the innocent, young, immature but talented students, by mercenary managements and profane

powers that be, continues unabated and endures. But the operation is untenable, unsustainable and sure to fall from grace!

A dozen Graduate Attributes [qualities expected of the fresh engineering graduates] have recently {Dec 2012} been defined by the NBA. Briefly, these are:

1. Engineering Knowledge
2. Problem Analysis
3. Design and Development of Solutions for Complex Engineering Problems
4. Investigation of Complex Research Problems
5. Modern Tool Usage
6. Engineer and Society – Awareness
7. Environment and Sustainability
8. Ethics
9. Individual and Team Work
10. Communication
11. Lifelong Learning
12. Project Management and Finance

These Graduate Attributes are in line with the global demands, Washington Accord and ABET [Accreditation Board for Engineering and Technology, USA]. What measures are to be taken to ensure the quality of graduates and to make them acquire the GAs and be globally employable? As seen from many press reports, one can see a steep fall in the quality of engineering graduates, both from autonomous and non-autonomous institutions. Even the preparation for JEE, the most competitive entrance exam for IITs, is getting mechanized; candidates somehow score by repetitive strenuous training for years and get into IITs and then perform very badly! The test of intelligence and ingenuity has failed. A large number of AP students get into IITs and their academic progress as IIT students is very poor. There was a case recently of an All India Topper in JEE, joining an IIT who was asked to discontinue for want of performance. Unable to bear the burden of the studies, some have committed suicide! The parents, teachers and the coaching centres torment the young students, to make them succeed in JEE. Due to repetitive and monotonous training and testing for a long period, their brains get tired and all their power of critical and creative thinking gets dried up. Many coaching classes begin from Standard VI and continues up to Standard XII !

The pitiable plight of young aspirants to IIT is best portrayed in poesy, in the form of an emotional sonnet:

*“ Stale and dull is the state of the mind,
After all the tiresome mechanical wind;
In learning anew, the interest is gone,
Ideas innovative fail to dawn;
Unable to stand the academic strain,
With a barren and beaten brain,
With interest lost in study and life,
After all such hard and ignoble strife,
In spite of all their plan and pride,
They are pulled and pushed to suicide!”*

*Let men of fame and noble goals,
With years of planning in academic roles,
Fetch their wits and frame fresh controls,
To save and redeem the suffering souls!*

As Principal of the erstwhile REC (Regional Engineering College), Trichy [from July 1990 to September 1995], I received complaints that most PG seats were taken away by students from AP by scoring high in GATE [Graduate Aptitude Test in Engineering] ; their performance after joining PG courses was found unsatisfactory. Why did they perform badly in PG courses after securing high percentage in GATE? To solve this issue, I restricted the PG seats to 2 per State, in each PG course.

Similarly, when I took office as VC, Bharathiar University in 1997, I received complaints that the girls from Avinashilingam University took away majority of the PG seats in Bharathiar University PG Departments, but they did not perform well after joining; because of very high marks in UG, they usurped most PG seats. I then introduced Entrance Exam for all PG courses with a weightage of 60%, with only 40% for the marks in the qualifying UG exam; not many graduates from Avinashilingam University could then get through! *This is a clear case of boosting marks without quality, betraying the trust reposed in the institution while conferring autonomy.*

The problem of misuse of autonomy is widespread, leading to wastage of our precious young human resources. The following corrective measures are suggested, for improving the quality of engineering graduates from autonomous institutions in particular and from all institutions in general:

1. Autonomy should be conferred only on time-tested institutions that have been consistently producing employable graduates for 3 years and more.
2. The tendency to pass all students, without proper teaching/learning/evaluation practices, should be curbed from the beginning. Hence, apart from the usual exams, a national body like MHRD/AICTE/NBA, should conduct a comprehensive exam of 3 hr duration, covering all subjects in the semester concerned, in every semester in every branch, in both autonomous and non-autonomous institutions, for all UG engineering programs. Thus a student is expected to write one additional exam per semester, for the first 6 semesters only. Unless 50% is scored in this comprehensive exam, the student should not be allowed to move to the next semester. The task is huge but to avoid wastage of human resources and to boost the growth of economy of the country, this is essential.
3. For the final year, the students should be asked to take up the GATE exam, in the respective branch; scoring 50 percentile or more should be made mandatory for the award of the degree. The GATE

score is already being taken by all the Public Sector Units, in lieu of their own Aptitude Tests; the number of students writing the GATE has significantly increased this year.

4. The institutions, whether autonomous or non-autonomous, that are unable to produce even 40% successful graduates, under the above rules, successively for 3 years, should be closed down.
5. Such additional tests at the national level, including the GATE exam, should be applicable to all institutions offering UG engineering degree programs, whether autonomous or non-autonomous and to all universities, Central, State or Deemed-to-be universities, to bring about uniformity in the quality and competence of the engineering graduates.

The above regulations may be resisted at first; there may be legal battles to be won; it is worth all the trouble, to prop up the sagging quality in technical education. There is already a serious shortage of skilled manpower; design skills and innovative ideas are becoming scarce; we may lose global competence and the Indian economy will suffer perceptibly, unless we take quick remedial steps.

*"Ere woe befalls this ominous land,
Let us resolve to save this youthful band!"*

There is lack of commitment and integrity at all levels; mercenary attitude has become all pervasive; there is no point in empowering and trusting any institution, without a check and balance from a national level competent body for final evaluation.

NASSCOM [National Association of Software and Services Companies] has declared only 25% employability among engineering graduates; the rest are unemployed, under-employed or in the pursuit of nefarious activities, causing social and law and order problems. The percentage of employability is further going down, due to global economic recession, reduced outsourcing, shortage of capable teachers, global competition, etc. Many engineering institutions have already been closed in Andhra Pradesh; Tamilnadu is not far behind. Adding to the woes, new engineering institutions are still being permitted, for reasons well known.

In the management of engineering institutions, the periodical training of faculty is an important but often neglected component. A short training for 5 days may be given to every faculty, every semester. The art of lecturing,

pedagogy, communication skills, knowledge of fundamentals and technical skills may form the core of the training programs. We have to first ensure quality of the faculty, if ever we wish to succeed in bringing quality in the graduates. As there are very many short cut methods of acquiring M.E. as well as Ph.D. degrees, faculty selection must be done with great care, not relying only on the paper degrees.

The crux of the problems of higher education in general and technical education in particular, lies with the poor quality of education being given at the primary and secondary levels. The teaching of languages and mathematics has degenerated over the years; passing compulsorily all students up to VIII standard [by a G.O. !] is another serious mistake, wasting the most learnable age band in children. As a student after XII standard enters an engineering institution, his/her preparation is woefully inadequate to receive engineering education, especially because of deficiency in languages and mathematics. A serious flaw in the admission process is exclusion of marks secured in English at the XII Standard and in some states, abolishing entrance exams. These problems have well been recognized and many improvements are being ushered in, by various State and Central Agencies. Several steps such as, improving the physical infrastructure in schools, bringing well written text books, training and empowering teachers, filling up vacancies, bringing joyful learning techniques, etc. are being taken.

In spite of poor quality of input to engineering institutions, it is still possible to bring out employable graduates, with consciousness of the deficiencies, care of the students and continuous training in the 4 years. For example, AMRITA University, Coimbatore, SASTRA University, Tanjore, NIT, Trichy and VIT, Vellore are doing excellently well in producing highly talented, employable graduates.

In a recent study, Indian Universities could not find a single place in the top 200 universities of the world. Let us wake up before it is too late!

*"A little learning is a dangerous thing;
Drink deep or taste not the Pierian Spring!"*

... From 'An Essay on Criticism' by Alexander Pope [1688-1744]

"In my experience, there's no such thing as luck." - Ben Obi-Wan Kenobi, Star Wars Episode IV: A New Hope. THE TAKEAWAY: "Luck" happens to people who prepare vigorously and work tirelessly.

"Quite an experience to live in fear, isn't it? That's what it is to be a slave." - Roy Batty, Blade Runner. THE TAKEAWAY: Don't get held hostage to anxieties about the unknown. Embrace uncertainty.

Importance of Academic Skills for Engineering Graduates



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The first few weeks after joining at university are an exciting time for the new comer. There is a lot going on in terms of getting to know the timetable, new subjects of study, meeting new class mates, lecturers, and students' and becoming familiar with the campus. From an employer's perspective, everything students do during the next three to four years counts. Employers expect graduates to not only have a strong academic background but also discipline based knowledge and a range of employability skills and attributes. Examples include being an effective communicator, team player, leader and possessing interpersonal skills.

Academic skills are the skills necessary to do well in an educational setting. They include reading, writing, mathematics, research, computer, and study skills basic in nature. Academic skills are collection of study habits, learning strategies, and time management tools that help students learn and absorb lectures and lessons. Academic skills are necessary for being successful in academic, and in many cases, in a professional career. Students, who experience poor academic achievement, not engage in and feel detached to their institutions likely to engage in problem behaviors and the delinquency associated with academic failure results from an unfilled desire to achieve conventional goals (e.g., academic success).

One of the greatest frustrations mentioned by many teachers is that their students are often not motivated to learn. Teachers quickly come to recognize the warning signs of poor motivation in their classroom: students put little effort into homework and class work assignments, slump in their seats and fail to participate in class discussion, or even become confrontational toward the teacher when asked about an overdue assignment

Let us consider "how to handle anxiety or fear" as an individual skill. This is the world of personal life, feelings and emotions towards psychological fitness. On other part let us think about "How to prepare for exams" as an academic skill. This is more on learning, education and career. Both skills are the world of action. Each one of them is interlinked and integrated for success. As such a student needs to develop skills and attitudes which help him to be more effective to find the fulfilment.

Academic Learning skills *further the competencies in academic skill development of* individual's academic success on his or her skills and abilities to attend to tasks and teachers and classroom expectations with minimal distraction, skill and abilities required to acquire necessary information, complete assignments, and participate in classroom activities and discussions, academic learning, study skills, memory techniques, etc...

For most students, learning is more than access to information. Academic skills build students as master in certain concepts. These skills not only benefit the students when it comes time to take tests, but can also help in the future. Concrete study skills are essential for college success, for instance, earning to balance multiple demands at once is valuable to many different career paths. Students without effective strategies for studying and time management often feel overwhelmed and anxious about tests and other demands. With the help of academic skills, students will master the concept and will carry out the task efficiently.

Again, academic skills are a collection of skill that helps students to learn and absorb new things. It enables individuals to be a more effective learner to perform better. Students often find it difficult to adjust to the rigors of the college curriculum. Many report that they did not find it necessary to apply themselves in institution to perform adequately. Additionally they recognize that parents and teachers often played a large role in helping them stay organized and managing their time. Consequently, they may have never developed effective study habits and their academic performance in college suffers.

Academic learning skills give highest importance to the thinking skill development of the individual. It encourages the individual to build a specific set of intellectual skills without focusing on the subject contents. The hard truth is that most of the individuals do not focus on the process of thinking at early days. This may be due to lack of proper guidance and stimulating activities. The focus is on students to practice thinking skills. The range includes on critical thinking, lateral thinking, reflective thinking and problem solving. The students will have the opportunities to analyse and evaluate arguments, numerical and graphical information, data handling, logic and reasoning.

Academic learning techniques are not the lone providence of individual learning activities. All thinking and dialogue requires some form of reflection if learning is to take place. Individuals need time and reconsideration of events to put facts and ideas into sequence and eventually into a better understanding as to what happened during a specific event. Everyone in his or her lifetime will be required to repeat this process endlessly. Nevertheless, institutions do little to prepare their students for reflection. Reflection activities allow students a sense of intellectual ownership and a better understanding of oneself and one's own abilities. Reflection is more than problem solving which has an excessive concern for right answers. It focuses on how questions arise. This always requires greater synthesis and creativity than does simple answers. Reflection is a skill, more accurately a cluster of skills, involving observation, asking questions and putting facts, ideas, and experiences together to add new meaning to them all. Learning to learn in this way, and instilling the practice as a habit, can allow program experiences to live on in the students' lives in new experiences and new learning.

Students and institutions have the major responsibility for developing the academic skills. However, they often need help. Academic skill helps students improving academic functions.

- One of the most visible problems for students is academic difficulty
- Academic problems can also be a precursor to more serious behavior problems
- To provide cross-curricular learning opportunities

- To provide necessary effective skills in learning, writing & presentation
- To develop cognitive (thinking), behavioral and psychomotor skills
- Through these skills, enhance proficiency in students leading to Academic Excellence
- To develop students understanding and retention of subjects/concepts learnt

Academic Skills focus on helping students to become effective learners and to developing skills needed to succeed in higher learning and professional environments such as research, problem-solving and technological skills. Academic skills are useful for helping students to adjust to new environments, to make informed decisions, to apply research skills, and to absorb new knowledge quickly. Students who lack academic skills suffer from low IQ, poor academic performance, drop out, which has been linked to criminal behaviour, early pregnancy, unemployment, and poverty.

The successful development of these skills depends on a student's exposure to people who role model the characteristics and the comfortable environments students are provided to practice using these skills such as in the home or classroom. Students should be provided with appropriate opportunities to develop, build on and practice these skills everyday so that they are able to effectively utilize these skills when they confront daily challenges throughout life.

Can engineers make a difference to the Indian society?

P. B. Varadharajan

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India has one of the largest numbers of engineers at professional level as well as in engineering colleges. What is the basic reason for this huge increase in numbers?

May be even 300 years back there was no word as engineer in India. Most of them were trade-smiths such as mason (for making buildings) or irrigation canals or roads. This was because the various other forms of engineering such as electrical or electronic or telecommunication are of recent vintage- just over 100 years old. The metals were used as tools and not as conduits of electricity. Even our mythical Vishwa-Karma was just a master mason!

Now with over one million engineers in India and with this number likely to increase at the rate higher than our GDP, are we a better-engineered society? Or framing this positively, what can we do to be recognized as a leading contributor to the growth of the economy and welfare of the people?

The most important engineering discovery or invention - call it what you wish - in the last 150 years is mass production, transmission and utilization of electricity. It led us to a different civilization and in turn helped us to enter into modern electronic and telecom world where knowledge is king!

However I wish to raise the query- Are Indian engineers conscious of this ability to change the world around them or – they just hold on to jobs so as to earn a 4 digit salary to start with and progressing to 5/6 digits?

Let us talk about one specific area- electrical power.

The generation and distribution of electrical power in India has seen a rapid increase since independence in 1947- a growth of 130 times in 65 years and still growing. The installed capacity as of now in May 2013 is just over 200 GW. While this number looks big because our base line in 1947 was bad, in comparison with other countries, our per capita consumption is much less than world average of 2,400 units per year (approx. 7 units per day). Even China that had only as much power generation capacity as India did in 1947 has now more than 4 times Indian capacity and generation!. Further, their losses in transmission and distribution at 6% is just one fourth of several state power utilities in India. They are creating now annually as much as what India does in 4 years.

Anyone who has been to China, knows too well that they are not better engineers than us. In fact, they learn their engineering – believe it or not – completely in Chinese. In fact, most Chinese engineers cannot write English. Still they have done a better job of building their country than we Indians.

The power shortage in India has been perennial. Total as country we are suffering from 10% shortage for more than 10 years. The distribution within various states is different. For example, Gujarat that had a power shortage of about 10% in 2000, has now a surplus and has no power cuts in 2012-13. On other hand, Tamil Nadu that had no power cuts in 2006, did not construct a single power plant in 11th five year plan while the rest of the country increased the capacity from 100 GW to 150 GW. As a direct consequence, the power shortage in Tamil Nadu is now over 20% with several hours of power cuts in most urban and rural centers except Chennai.

We in India have one resource that is much more than in China and it is FREE! - It is lot of sunshine for most of the year- more than 330 days a year.

Solar Energy Generation (SEG) is relatively an old technology. Chinese stormed the REG fort about 4 years back and brought down the international prices spectacularly, of panels and invertors. They have exported this to around the world.

The Indian manufacturing capacity to produce panels and invertors is adequate for the moment. However, we have a bottleneck in manufacture of batteries. This is hindering a fast expansion of the SEG sector. This is in spite of the fact that lead in batteries can be recycled up to 96%!

One MW of SEG requires just five acres of waste land- not even irrigated fertile land. One GW (1000 times one MW) requires just 5,000 acres or about 20 sq. kms = 4 x 5 kms size.

One MW can generate 5,000 units of electricity per day. Therefore, One GW can generate 5 million units per day. A metro like Chennai consumes 36 million units a day as per the article in The Hindu dt. 13th May 2013. This can be generated from 7.2 GW station of SEG that would require a total of 36,000 acres. This is approx. 146 Sq kms - approx. a square block of 12 kms. Pl. note that total size of Tamil Nadu is 130,000 Sq kms. So we are talking about just 0.11 % of the area of Tamil Nadu.

Chennai city (as per Wikipedia) an area of 171 Sq. kms consumes 20% of power generated in TN (as per The Hindu report referred to earlier). There is a lot of open space around Chennai city such as to the west in Kanchipuram and North in Tiruvallur and in South towards Mahabalipuram. With increasing urbanization and shortage of water for irrigation, about 50% of land area in villages is left fallow (without cultivation). There is no agricultural income and every farmer hopes to sell his land to developers!

To attend a Renewable Energy conference in Coimbatore, my friend and I drove by road from Chennai to Coimbatore - a distance of 500 kms. We did not spot one single solar panel. When we arrived in Coimbatore everyone was complaining that power cuts of over 10 hours every day.

How is this massive power shortage being handled? By installing diesel generator sets. In fact, Tamil Nadu has one of the highest diesel generator capacities at over 5 GW as per a diesel industry veteran I met in CII conference. Even if one were to assume that they consume just one liter (Rs. 50) of diesel per day, the annual consumption of diesel by such generators would be Rs 9,000 crores. This money if ploughed into making SEG (Solar Electric Generators) would create a capacity of 9 GW in 6 months that would not only produce power FREE but also wipe out the entire power deficit in Tamil Nadu and create a surplus that can be used for new industries apart from reducing the greenhouse gas emissions.

Will a good engineer come forward to plan & execute this?

In our opinion, various engineering associations and even colleges must study this aspect seriously and produce whitepapers. They must hold seminars and workshops on the subject regularly. They must create awareness for funds mobilization of Rs 9,000 crores that would save all future incremental power costs. It would also generate thousands of jobs for engineers and power technicians.

Does this info shock you - Well remember it is electricity - hence no surprise.



Prof. S. Sadagopan
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General

- Padma Awards (highest civilian awards in India) were distributed by the President Mukherjee on April 2
- Indian Railways carry 100 million tonnes of freight in the year 2012-13, a record, after 5 years
- Bihar government gets Rs 12,000 crores package of special Times of India celebrates 175th year on April 22
- Government decontrols sugar on April 5
- Novartis patent decision by Supreme Court on April 1 helps poor patients in India, but makes the huge investment in pharmaceuticals R & D difficult to justify economic assistance from Central government in April 2013
- Karnataka gets ready for the State Elections on May 5; B.PAC (organization founded by BIOCON Kiran Mazumdar and Mohandas Pai) starts direct funding of Rs 5 Lakhs to 14 candidates in Bangalore
- Globally price of gold crashes in much of April 2013
- A series of setbacks to Dr. Manmohan Singh led UPA government (in addition to slow economic growth and high inflation); Chinese incursion into India penetrating 19 KM inside the line of control in mid April, with no signs of Chinese going back by end April; Coalgate scam (scam in the allotment of coal mining licenses) causes embarrassment to Prime Minister, when CBI Chief tells Supreme Court on April 26 that CBI shared its Report with the Government; opposition expressing no confidence in Chairman Chacko (of Joint Parliamentary Committee probing 2G scam) on April 25; Indian prisoner in Pakistan Sarabjit Singh getting attacked in a jail in Pakistan on April 27 (who later died on May 1)
- West Bengal chit fund scam causes difficulty for Mamta Banerjee led West Bengal government
- Sahara continues to disobey SEBI action against its fraudulent practices involving fund collection without any banking license throughout April 2013
- There were many man-made and natural calamities in April 2013; Iran earthquake on 16th April; Malleswaram blast in Bangalore on 17th April; Boston shooting incident on 19th April; Chinese earthquake on 20th April; Texas fertilizer factory

blast on 22nd April and Bangladesh garment factory fire on 27th April

- Bubble burst on “bit coin” (the digital alternative to currency) on April 16

Markets

- Apple sees profit decline for the first time in ten years, as it announced its results for Jan - Mar 2013 quarter on April 24 (\$ 43.6 billion revenue and \$ 9.5 billion profit, with sales of 37.4 million iPhones, 19.5 million iPad and 4 million iMac)
- India's export target of \$ 350 billion off by 50 billion
- TCS acquires French IT services firm Alti for Rs 530 crores in April 9
- Infosys ties up with US-based IT Infra management software firm IPSoft (started by India-born NYU Professor Dubey that uses self-healing algorithms to automates IT infrastructure management) on April 29
- April is the time for last quarter and full year financial year results in India; TCS and HCL announce good results for the year 2012-13; Infosys & Wipro announce muted results for Jan-Mar quarter and the full year
- The annual revenue for the year 2012-13 of TCS, Infosys, Wipro and HCL Technologies stood at Rs 62,989 crores (\$ 11.6 billion), Rs 40,352 crores (\$7.4 billion), Rs 33,543 crores (\$ 6.21 billion) and Rs 24,435 crores (\$ 4.5 billion); the corresponding headcount stood at 276,196, 156,688, 145,812 and 84,403 respectively.
- Abu Dhabi based Etihad Airlines acquires 24% stake for Rs 2,058 crores in Jet Airways on April 23

Products

- Facebook Home launch on April 12
- Samsung Galaxy S 4 launched in India on April 26 (priced at Rs 41,500)
- Nokia launches three Windows 8 Mobile phones Nokia 520, 620 & 720 in India in April 2013

Indian IT companies

- Indian IT firms' fresher's recruitment likely to fall from 250,000 to 175,000 in year 2013-14

- India Posts signs deal with TCS April 2013 (it signed a deal with Infosys in March) for its ambitious transformation project to connect 130,000 post offices
- Infosys share price goes down 22% after the company reported slow growth for the year 2012-13
- NSE (National Stock Exchange) is the world's top stock exchange in terms of the number of equity shares traded in the Jan – Mar quarter with 366 million shares traded in the quarter
- Bharti (owner of Airtel brand) buys Uganda telecom Warid on April 23
- Tech Mahindra expands in Turkey; acquires Sony Mobile's Sweden-based "Type Approval" Lab on April 25
- TVS & BMW sign deal in Apr 2013
- Biocon to add 1,000 jobs in Bangalore in 2013

MNC IT companies in India

- Apple will be \$1 billion business in India in 2013
- Huawei talks of \$150 m investment in Bangalore R & D Center in Bangalore
- Akamai (Content Distribution Network major founded by MIT Maths Professor Tom Leighton) to add 400 people in India
- Yamaha opens its fifth R & D Center in Gurgaon in April 2013
- Kyocera plans Rs 100 crores R & D Center in Bangalore
- Honda to invest Rs 2,500 crores in India

People

- Infosys Founder Kris Gopalakrishnan is the new CII President
- Mindtree Founder Natarajan Krishnakumar is the NASSCOM Chairman from April 2013
- Sanjiv Keskar is the new IESA President
- Alok Ohrie is Dell India MD from April 2013
- Zynga founder in Bangalore in April 2013
- HP Chairman resigns on April 5
- Israel gets a new Prime Minister in April 2013
- Former Prime Minister of UK, Mrs. Margaret Thatcher, renowned Supreme Court judge J S Verma (author of anti-rape bill) and the well-known violinist Lalgudi Jayaraman passed away in April 2013

Education & Research

- Supreme Court rules that AICTE has no role in regulating MBA programs and Institutions affiliated to recognized universities on April 27
- Former IISc Director (Chemistry professor) CNR Rao has h-Index of 100 (thanks to 50,000+ citations for his papers), the first for an Indian researcher

Infrastructure

- Double-decker AC train between Bangalore and Chennai had inaugural run on April 25

Applications

- Free Wi-Fi for train passengers travelling in Rajdhani Express in Delhi –Kolkata sector from April 2013

Some interesting numbers

- Telecom subscriber base on February 28 stood at 892.02 million with 861.66 million mobile subscribers and 30.36 million wire-line subscribers (with net reduction of 0.96 million mobile subscribers and 0.16 million wire-line subscribers in February 2013) (TRAI Press Release No. 31/2013 dated April 18)
- India's Foreign Exchange on April 26 at \$ 296.37 billion (RBI)
- Indian Rupee stood at 53.68 against USD on April 30 (RBI)
- Sensex (India's stock market index) on March 31 stood at 19,519 (Reuters)
- Nokia handset sales hit 13-year low in 1Q2013
- Patent applications in 2011: China 526,412, USA 503,582, Japan 342,610; India way behind at 42,291; patents granted: Japan 236,323, USA 234,585, China 172,113, and India at 5,168. The Top 5 segments are: electrical machinery, digital communications, computer technology, medical technology and pharmaceuticals
- Indian mobile handset sales in 2012 stood at 172.2 million feature phones, 11.2 smart-phones. Nokia with 21.8% is still no 1 in overall sales, though Samsung with 13.7% sells more smart phones (43.1%)
- Public sector power equipment major BHEL turnover crosses Rs 50,000 crores for the first time in 2012-13
- Reliance Retail crosses Rs 10,000 crores business by March 2013

"Science fiction writers foresee the inevitable." -Isaac Asimov, science fiction author.
THE TAKEAWAY: Science fiction goes beyond entertainment, depicting many future innovations.

"(I'm) from another planet. Let's just say that we're neighbors." -Klaatu, The Day the Earth Stood Still.
THE TAKEAWAY: The universe is huge, but IT innovations help bring people, ideas and communities together

Bangalore Section

TIIEC-2013: Texas Instruments India Educators' Conference 2013

In order to provide an opportunity to universities to showcase their electronic design projects carried out using TI semiconductors, the TI India University Program organized the TI India Educators' Conference (TIIEC 2013) at NIMHANS Convention Center, Bangalore during April 4-5, 2013. TIIEC was technical co-sponsored by IEEE Bangalore Chapter & IEEE CAS Bangalore Section. The objective of the conference was also to promote industry academia interaction, innovation and knowledge sharing. The conference attracted over 700 participants, which included 300+ educators, 100+ industry professionals and 300+ students from Indian engineering institutions.



Dr. Bobby Mitra, President and Managing Director of TI India, inaugurated TIIEC 2013. Others participate in the inauguration include: Steve Lyle, Director of Diversity & Work Force Development, TI; Sanjay Bhan, Director of Human Resources, TI India; Brad Ruzicka, Director of University Marketing, TI; R. Madhu, Director of University Marketing, TI India; and Dr. K.R.K. Rao, Head, Analog Training, TI India. An electronic lamp designed by using the TI MSP430 microcontroller and analog ICS by the TI Center of Embedded Product Design at Netaji Subhas Institute of Technology was used in the inaugural ceremony. In his inaugural address, Dr. Bobby Mitra spoke on the importance to building systems and encouraged students to “soil their hands” building electronic systems using integrated circuits. Steve Lyle talked about TI university program activities worldwide, with an emphasis on the activities in India.

There was a performance of the following three *techno-skits* during the inauguration to demonstrate student projects using TI technologies. *Infinite Coffee Cup* (by students of IISc which showed the application of *Internet of things* technology), *Sherlock Holmes in the Modern Times* (by students of IISc which shows how technology can help detect the emotional state of an individual) and *Let there be light* (by employees of TI India which showed the applications of TI's Digital Light Processing Technology).

Steve Lyle inaugurated the *exhibit booths* that displayed 60+ student projects carried out in different engineering colleges in India. Brad Ruzicka inaugurated the *poster presentation*, where 40 projects were displayed. The projects and posters were classified according to application areas - *Automotive, Industrial, Medical, Robotics, Automation, Solar, Energy Conservation/Management*.

About 90 papers shortlisted after an extensive review of 400 received were presented in 16 technical sessions in four parallel tracks. While the CD proceedings containing these papers were distributed to the delegates, the online proceedings will be archived on IEEE Xplore. The complete technical program of the conference is available at www.tiiec.in

In the panel discussion on “Leveraging the opportunity of ESDM - The role of industry-academia interaction”, Prof. N.J. Rao (former Chairman of CEDT, IISc), Mr. Ashok Hattangady (Innovator), Mr. Sham Banerji (Founder, i2i Telesolutions), and Dr. Sarat Babu (Executive Director, CDAC, Bangalore) participated and talked about the importance of electronic system-level design and innovation in the current context. They also highlighted the need for innovation in the campuses and pointed out some of the opportunities available to students. A good Q&A discussion followed the presentations. Dr. C.P. Ravikumar Technical Director, University Relations TI India moderated the panel discussion.

In the colorful award ceremony held on 5th Apr, certificates and mementoes were distributed to paper presenters by Mr. Hitesh Mehta, Chairman, IEEE Bangalore Section. Brad Ruzicka distributed certificates and cash prizes to 39 winners of consolation prizes in the first phase of TI India Analog Design Contest (TIADC 2012-13). Steve Lyle presented certificates and cash prizes to 23 winners of the first phase of TIADC 2012-13. The award “TI India WIN Aspiring Tech-Talent Award” was presented to a team comprising of only girl students, to encourage their participation in the electronic design contests. K. S. Narahari, Director, Internal Communication, TI India, presented the awards for best video demonstrations.



Dr. Bobby Mitra gave away prizes to the winners in the final phase of TIADC 2012-2013. The second runner-up award and a cash prize of \$ 2000 was shared by Netaji Subhas Institute of Technology, New Delhi and Visvesvaraya National Institute of Technology, Nagpur. Teams from BMS College of Engineering, Bangalore, and BNM Institute of Technology, Bangalore, shared the first runner-up prize of \$5000. The “Tom Engibous Award” with a cash prize of \$10,000 was jointly won by NIT Surathkal and NIT Trichy.

On April 6-7, six post-conference tutorials with hands-on sessions were conducted on “DSP Using OMAP-L318”, “Internet of Things”, “Low Power Embedded Systems Using MSP430 Microcontroller”, “Embedded Android on Beagleboard” Introduction to Motor Control on C2000 MCU platform,” and “Designing Analog Systems using ASLK”. Tutorial drew good participation from educators and students.

The feedback for TIEEC 2013 was overwhelming. There was an outpour of positive feedback during the event as well as after the event through social media. Please read the blog “Innovation Premier League!” by Dr. C.P. Ravikumar on the TI University Program website to know more about the conference. The next edition of Texas Instruments

Innovation Challenge: India Analog Design Contest was also launched. For details, visit www.unity.in/adc

Report by: Dr. C.P. Ravikumar

IEEE Vehicular Technology Society India Council & CMR Institute of Technology, Bangalore: Distinguished Lecture

A Distinguished Lecture (DL) on the topic “Transportation Electrification Enabling a Paradigm Shift Moving Over from Auto 1.0 to Auto 2.0” was organized at CMR Institute of Technology, Bangalore by IEEE Vehicular Technology Society India Council Chapter on 4th Apr 2013. Dr. Sheldon S. Williamson, Member IEEE, Department of Electrical and Computer Engineering, Concordia University, Montreal, Quebec, Canada delivered the lecture in which the details on Electric and Plug-in Hybrid Electric Vehicles (EVs and PHEVs) were discussed along with ongoing development of electrification of vehicles, charging scenario, greenhouse gases. Around 100 people including graduate students from different colleges and IEEE members attended the DL and benefited.

Report by: Dr. Navin Kumar, navinkumar@ieee.org

Kolkata Section

Felicitation of Prof. Sankar K. Pal by IEEE Kolkata Section



audience in his own style indicating different issues of teaching, research, and associated social aspects. It was an enjoyable and pleasant evening for all, which eventually turned into a mood of get-together.

IIT Guwahati: Workshop on “Compressive Sensing & Technical writing”



About 160 participants from NIT Nagaland, NIT Meghalay, Tezpur University, Assam Engineering College, GIST-Guwahati, IST-Guwahati Univeristy, Don Bosco Engineering College and Royal Engineering College, attended this 2-day workshop held during 6-7, Apr 2013. At the inaugural, Prof. Debatosh Guha, Chairman of IEEE Kolkata Section addressed the audience indicating the rich heritage of IEEE and its impact on the professional engineers. Prof. Sukumar Nandi, Deputy Director, IIT Guwahati was present to encourage the participants. Dr. Angshul Mujumdar of IIIT-D and Dr. Amit Sethi of IIT Guwahati offered tutorials on Compressive Sensing. A panel discussion on 'why a career in research?' was organized on the second day.

IEEE Kolkata Section: Birth Centenary of Dr. Amiya Kr. Chatterjee



IEEE Kolkata Section felicitated Dr. Amiya Kr. Chatterjee, an eminent electrical engineer and educator of the country, on 3rd May 2013 on the occasion of his birth centenary being celebrated this year. Prof. Chatterjee, born on March 29, 1914 graduated with a diploma in electrical engineering in 1935 from National Council of Education, Jadavpur. He received his MS from Cornell University and PhD from University of Illinois in 1946 and 1948 respectively. Apart from various industries in India, UK, and USA, Prof. Chatterjee served Jadavpur University, Birla College of Engineering, Pilani and Birla Institute of Technology, Mesra in different capacities.

His felicitation ceremony was held at the Electrical Engineering Dept. of Jadavpur University. About 40 members and former students of Prof. Chatterjee participated in the function. Prof. Debatosh Guha, Chairman of the Section conducted the function. He was presented with a flower bouquet consisting of 100 red roses and a Plaque. Mr. K. K. Das Gupta, the senior most member of the section, presided over the function. Professors Sujoy Basu, Dipak Kumar Basu, Nirmal Kumumar Chatterjee, Nirmal Kumar Deb and Mr. K. K. Das Gupta spoke about their longstanding relations with Prof. Chatterjee and shared several reminiscences. Prof. Anjana Banerjee, daughter of Prof. Chatterjee shared some anecdotes about her father.

Finally, Prof. Chatterjee addressed the audience in a very well composed speech about his experience in educational institutions since early 1940s. Everyone, present at the occasion had a rare experience to meet a physically strong and mentally young centurion of our time and to celebrate his birth centenary.

UP Section

GLA University: IEEE International Conference on “Information Systems and Computer Networks: ISCON-2013”



An International Conference on “Information Systems and Computer Networks: ISCON-2013” was organized in GLA University, Mathura on 9-10 March 2013, in technical collaboration with IEEE UP Section and CSI Region-1. It was co-sponsored by Indian Oil Corporation Ltd (IOCL). The Chief Guest of the Conference was Prof. S. K. Koul, Deputy Director (Strategy and Planning), IIT Delhi.

Dr. Anoop Kumar Gupta, Director, Institute of Applied Science and Humanities, GLA University welcomed the gathering. Prof. Jai Prakash, Vice Chancellor, GLA University, speaking about the importance of the Conference, said that the Information Systems has emerged as a key source necessary to take vital decisions in all walks of life.

Prof. Krishna Kant, HoD/CEA, GLA University, emphasized the importance of Information Systems, which consists of components of collecting, storing and processing data and for delivering information, knowledge and digital products. He added

that some of the recent advancements in this field are Computer Clusters, Peer to Peer Systems, Grid Computing, Cloud Computing, to name a few.

Prof. S. K. Koul in his address said that the beginning of the career should not be taken in a small level, besides the student shall have patience and develop his skills in order to improve the quality of his career. He highlighted some points on being successful: "Think Big, Work together and innovatively, and, Give More and Take More". He also guided the participants on writing Technical Papers.

Mr. R. K. Vyas, VP, CSI Region I, said that Information System and Computer Networks are the burning topics of today's era. The Information System is always changing with time and the Computer Networks are always enhancing their capabilities. He highlighted that the researchers should collaborate with the Industry and should share their research in order to get good exposure.

Prof. S. V. Raghvan, President of CSI and Scientific Secretary, Office of the Principal Scientific Adviser to the Government of India, New Delhi, addressed the gathering through his recorded video in which he highlighted the advancements in the domain of Electricals and Electronics, Networking and Semiconductors. He also talked about the National Knowledge Network, which is a state-of-the-art multi-gigabit pan-India network for providing a unified high speed network backbone for all knowledge related institutions in the country. He said that the purpose of such a knowledge network goes to the very core of the country's quest for building quality institutions with requisite research facilities and creating a pool of highly trained professionals. In the coming future, the NKN will enable scientists, researchers and students from different backgrounds and diverse geographies to work closely for advancing human development in critical and emerging areas.

Prof. S. K. Gupta, in his keynote on Cyber Crime, focused on the cyber crimes being done by using plastic cards and emphasized on the need for a robust Identity Management System coupled with fraud detection capabilities.

Out of 233 papers recd. for the ISCON 2013, after a rigorous review process, 108 were accepted for presentation in tow tracks namely "Information System" and "Computer Networks" in seven sessions.

The IEEE UP Section Executive Committee also held a meeting during the two days Conference in GLA University, Mathura on March 10th, 2013. Some of the prominent members who were present in the meeting were Dr. S. N. Singh, IIT Kanpur, Dr. Y. N. Singh, IIT Kanpur, Dr. K. Vaibhav Srivastava, IIT Kanpur, Dr. Ramesh Negi, AIR, Dr. R. Gowri, GEHU, Dehradun, Dr. Ekram Khan, Aligarh Muslim University, Dr. Dilip Kumar Sharma, GLA University, Mathura, Dr. Bhavesh Kumar Chauhan, ABES IT Ghaziabad, Dr. D. Bhagwan Das, DEI, Agra, and Mr. Raghvendra Chaudhary, IIT Kanpur. The meeting discussed about various upcoming IEEE International Conferences in the UP Section, and the need to check and avoid plagiarism in the papers submitted in the Conference.

At the conference valedictory session on 10th March. Prof. S. N. Singh, Chairperson IEEE UP Section graced the occasion as the Chief Guest.

Report by: Dr. Dilip Kumar Sharma, dilip.sharma@gla.ac.in

IEEE OES, India Council

Presentations at 8th International Symposium on Underwater Technology 2013 at Japan



The 8th international symposium on Underwater Technology 2013 (UT13) was held in Tokyo, Japan during 5-8, Mar 2013. The symposium was organized by IEEE, OES Japan Chapter, Institute of Industrial Science (The University of Tokyo), Earthquake Research Institute (The University of Tokyo), Japan Agency for Marine-Earth Science and Technology (JAMSTEC). About 13 countries participated in the UT symposium and discussed the problems and potential long-term solutions that concern not only the Pacific Rim countries, but the world in general. The symposium

consisted of keynote talks, double-track technical sessions, a poster session and a technical tour on the first day. It featured the advanced underwater technology and scientific use of submarine cables & related technologies.

Dr. M. A. Atmanand, Director, National Institute of Ocean Technology (NIOT) and Chair, IEEE OES, India Council, Chennai was invited to deliver a talk at the plenary session of the Symposium. Mr. P. Muthuvel, Scientist, NIOT and Member IEEE, participated in the symposium.

Dr. M. A. Atmanand, delivered an invited talk on “Developments in Underwater Technologies – Indian Scenario” in which he briefed about the major activities being executed by NIOT, India, “Drinking Water to the Island Community, Climate and Disaster Management, Deep Ocean Technology for Non-Renewable Resources, Deep Sea Crawler, Remotely Operated Vehicle and AUV, Autonomous Coring System, Remotely Operated Vehicle (ROSUB 6000), Remotely Operable In-situ Soil Tester and Major Challenges in this areas.

Out of three research papers presented from India, Dr. M.A. Atmanand, presented two papers on “Challenges in realizing robust systems for deep water submersible ROSUB6000” and “Deep sea qualification of Remotely Operable Vehicle (ROSUB 6000)” and Mr. P. Muthuvel presented a paper on “Performance Qualification of Instrumentation, Telemetry & Data Acquisition System for Underwater Mining Machine with Manganese Nodule Collection and Crushing System”

A one day Under water technology workshop will be organized at NIOT, India on 21st October 2013 as a precursor of Sympol 2013 to be held at Cochin from the 23rd. October 2013. During banquet, it was officially informed that, the 9th International symposium on Underwater Technology 2015 (UT15) will be held at NIOT, India organized by IEEE, OES, India Council.

Madras Section

IEEE RAS Madras Chapter: Robotics Workshop



The IEEE RAS Madras chapter organized a one day workshop titled “Robot and its Techniques of Autonomous Vehicle Design”, with the technical coordination with Lema Labs on 15th Mar 2013 at IIT Madras. Mr. P A Manoharan, Robotic & Automation Society (Chair) welcomed the gathering. Dr. G V Rao, Managing Director Rowsons Marketing Pvt., Ltd., inaugurated the session and explained the ethics of robotics. Dr. K Sridharan, Robotics & FPGA based design, IIT, Madras, in his presidential address briefed about the evaluation of robots and its technology. In the keynote address, the chief guest T.S. Rangarajan, IEEE Madras Section (Chair) highlighted the current trends in robotics

and its applications in industries.

The workshop sessions started with the introduction of robotics by Mr. P A Manoharan, followed by Lema Labs hardware demos of simple robots, line follower robot, obstacle avoider robot and table top robot. Explanations and live demo was provided by Mr. Kedar Kulkarni, Mr. Gokul Chandra sekaran and Mr. Zaheer N of Lema Labs. Theoretical presentation and the concepts of serial communication, computer controlled robot, mobile controlled robot and applications of control systems were briefed. In the afternoon session, advanced technologies such as computer vision and its implications in the field of advertising, media and publishing were explained. At the valedictory function, Dr. L S Ganesh, Dean (Students) & Dept. of Management Studies, IIT, Madras spoke and Mr. K.V. Rupchand, Secretary of RAS proposed the vote of thanks.

VMKV Engineering College, Salem: National Level Project Competition and Paper Presentation



A national level Project Competition and Paper Presentation for Engineering and Polytechnic Students -“INOVOTECH’13” was conducted on 10th Apr 2013. After the welcome address by Dr. P. Senguttuvan, Vice Principal, Dr. A. Nagappan, Principal in his presidential address explained the importance of this event and advised the students to update their knowledge with available resources. In this event, 300 innovative projects were displayed and 150 papers were presented by the students from across the country. This competition provided a much needed platform for young students to exhibit their creative and innovative ideas and talents and facilitated a space to transform their dreams into reality.

The chief guest of the function was Dr. H. V. Batra, Director, Defence Food Research Laboratory, Mysore and guests of honour were Major V. V. Chandrasekharan, Secretary, IEEE, Madras Section & Secretary, IEEE India Council and Dr. K. Manivannan, Secretary, ISTE, Tamilnadu & Pondicherry Section. The guests visited each and every project and appreciated the creative talents of the students.

A jury committee evaluated the projects and papers presented and selected the best three in projects and papers besides eighteen projects, one for each discipline for awarding consolation prize. On impressing, the performance of students and their innovative projects Dr. H. V. Batra announced that the best selected three projects and the papers would be further evaluated at Defence Food Research Laboratory, Mysore for studying the commercial viability and technical feasibility.

The prizes worth Rs.1.25 Lakh were distributed to the winners by Major V. V. Chandrasekharan and Dr. K. Manivannan at the valedictory function. The event came to an end with the vote of thanks by Prof. T. Muthumanickam, Secretary IEEE –AESS.

Report by: Prof. T. Muthumanickam, hod_ece09@yahoo.com

Adhiparasakthi Engineering College: ICCSP-13: International Conference



An International conference on “Communication and Signal Processing” was organized by Dept. of ECE along with IEEE Madras Section during 3-5, Apr 2013. The conf. focused on research frontiers of communication and signal processing and provided a platform to exchange new ideas, methodologies and explore opportunities by collaboration between domestic and international scholars. The conference sessions had a series of invited presentations from leading researchers/academicians from IIT, NIT, and IIIT and from across the globe from China, USA, Malaysia, Singapore, Tunisia.

The conf. was inaugurated by Dr. Zhi Ning Chen, Professor, NUS, Singapore. Dr. Ashok Rao, Former Head, IISc, Bangalore and Managing Director Dr. G. B. Senthil Kumar, Principal Dr. S. Jayashree, Dean Dr. V. Ramasamy, Vice-Principal Dr. R. Rajasekaran, Convener Dr. V. Nagarajan and Co-ordinator, Mr. A. K. Gnanasekar participated.

At the valedictory session, Mr. T. S. Rangarajan, Chairman, IEEE Madras Section and Er. S. Ramakrishnan, Sr. Scientist DRDO, Bangalore participated.

Dr. V. Nagarajan, nagarajanece31@gmail.com

IEEE SIGHT Madras Section: Orientation Program



IEEE SIGHT Madras Section has initiated “SIGHT Camp” with a vision to encourage students to take up humanitarian projects. The SIGHT team consists of Mr. Anand B (Chairman), Mr. Antony Venus A.J (Vice Chairman), Mr. Arun Noel Victor (Secretary), Mr. Mukundhan S (coordinator), Ms. Madhuri Narayanan (coordinator) and few more volunteers. On 2nd Mar 2013, the orientation session was held in Easwari Engineering College. Mr. Mukundhan introduced the participants to SIGHT and need for humanitarian projects to resolve the issues of the downtrodden. Mr. Arun Noel Victor briefed about the structure of the SIGHT camp and its objectives. The participants formed teams under

various disciplines like Power and Energy, Health and Medicine and Education based on their field of interest. Mr. Anand enlightened the students on how to identify a social problem and find a technical solution for it. The participants had a discussion regarding their field of interests and shared their plans for humanitarian projects.

IEEE SIGHT Madras Section: Humanitarian Field Work



The participants of IEEE SIGHT Madras Section – SIGHT Camp set out to the field work on 3rd Mar 2013 at the village Oragadam near Chengelpet. The village has a population of 250 belonging to a tribal community. The participants made a study on their lifestyle along with their teams under their chosen disciplines. The participants analyzed various issues like sanitation, health, and power consumption through interaction with the locals. Following the visit the teams reported the issues and the data they have analyzed in the field work. The teams identified a social challenge of their choice and prepared a white paper on the project they would propose to solve the issues faced by the village inhabitants. The white papers were screened. 30 students from 13 institutions across Tamil Nadu participated in the camp and have started working on Humanitarian Projects to bring change in the lives of the

target village. Thus, the SIGHT camp will be a boon to the underprivileged village inhabitants.

Reported by: Arun Noel Victor

IEEE Madras Section Student Network: Face to Face Meeting – 2013



IEEE Madras Section Student Network and IEEE Student Branch, Amrita School of Engineering, Coimbatore collaboratively organized the IEEE Madras Section Student Network Face to Face Meeting – 2013, from 31st March to 2nd April, 2013. The three day event was conducted to bring together IEEE members from the madras section under one roof to interact with each other and gain awareness on various aspects of an IEEE membership such as its membership benefits, access to knowledge. It also enabled students to know about various technical and social activities that are being carried out by the Madras Section. Around 100 participants from around 17 colleges across Tamil Nadu had attended the event.

On Day 0 (31st March), the event started with the Ice Breaking session and setting of objectives for the meet conducted by Mr. Anand B, Vice Chair (Student Branch Networking), IEEE R10 SAC India Team and Mr. Hari Krishnan, Mentor, IEEE MSSN.

A session on IEEE – A Big Picture conducted by Ms. Harini Vasu, WIE, IEEE Madras Section Student Network Team, Analysis Manager, R10 WIE.

It was followed by a session on Cryptography by Dr. T. R. Padmanabhan, Professor Emeritus, Amrita School of Engineering. The session gave an idea to the students as to how security is being implemented in real time on websites that include online payment. The day ended with the screening of a movie.

Day 1 (1st April), commenced with inaugural ceremony with the chief guest being Dr. Ramalatha Marimuthu, Chairperson IEEE WIE. Prof. K. Gangadharan, Chairman IT Department, ASE, Prof. Prashant R. Nair, Vice-Chairman IT Dept, ASE and National Vice Chair, IEEE Educational Society, Prof. Arun Kumar, SB Counselor, IEEE Amrita Chapter, Mr. Hari Krishnan and Mr. Anand also participated in the inaugural session. Dr. Ramalatha Marimuthu, gave out an insight on the global picture of Women in

Engineering. After the presentation in a Video Conference session, Mr. T. S. Rangarajan, Chairman, IEEE Madras Section inspired the young students.

The post lunch sessions were observed back to back by Mr. Anand, on Leadership, Even Management and Membership Management and on the Importance of Technical Societies in SBs.

An Introduction to Student Network and formation of Hubs by Mr. Hari Krishnan and Mr. Anand guided the student volunteers towards a different perspective. It was followed by the Success Story of Madras Section Student Network – Chennai Hub by Ms. Fathima. The day ended with a session on Soft Skills and Impact of memberships in Technical Societies by Mr. Krishna Shastri, Joint Director, Corporate and International Relations, Amrita Vishwa Vidyapeetham.



Day 3 (2nd April), started with a video conference by Mr. Arjun R Pillai, IEEE R10 SAC on motivating factors followed by a presentation on IEEE Special Interest Group on Humanitarian Technology (SIGHT) by Mr. Arun Noel Victor, Secretary, IEEE SIGHT followed by a session on spreading the awareness of Solar Power by Mr. Ramesh, Co-founder, Solarillion. Finally, we had the future action plan being laid down by Mr. Anand which was followed by the valediction ceremony with Registrar of Amrita Vishwa Vidyapeetham as the chief guest, in which certificates were distributed to the participants and the volunteers.

Report by: Phalgun R. Lodaya, phalgunlodaya@ieee.org

PSNA College of Engineering and Technology: SDIP-2013: Fourth National Conference on “System Design and Information Processing”



The Department of Biomedical Engineering organized the fourth national conference on “System Design and Information Processing” on 22nd Mar 2013.

Dr. M. Mukunda Rao, Professor, Department of Medical Electronics, MS Ramaiah Institute of Technology, Bangalore (Former Professor- IIT, Madras was the chief guest and gave an informative talk on “Design and Development of cost effective Photoplethysmograph, Thermistor based Neonatal Apnea Detector”. He encouraged the students and faculty members to participate and organize conferences and seminars

and to establish Centers of Excellence. He motivated everyone to apply for Intellectual Property Rights and Patents and to produce realizable cost effective products.

The Guest of honor, Dr. V.N. Mani, Scientist-E, Center for Materials for Electronics Technology, Department of Electronics and Information Technology, Government of India, Hyderabad delivered a special lecture on “Advanced electronic nanomaterials and medicine”. He added a note on the threats on management of resources, electronic wastes and water which we are going to face in the future. Also explained and distinguished between what is science, engineering, technology, technology innovation, technology application and technology advancement. He emphasized on ‘Green and Clean Space’ and commented that India is strong in research and should improve in development and production fields also. He shared his views about the boons and banes of nano

electronics, nano biomedicine, and nano materials and also focused on the indigenous methods developed for the purification process.

The conference enjoyed a wide participation from many reputed institutions and received 340 papers, out of which 60 papers were selected for the presentation in eight different sessions. Few selected papers presented at the conference will be published in the “International Journal on System Design and Information Processing”. SDIP-2013 created a good portal for establishing research potentials to hog the limelight in their chosen domains.

Kalasalingam University: National conference on “Intelligent Techniques in Control, Optimization and Signal Processing”



The IEEE SB organized the 4th National Conference on “Intelligent Techniques in Control, Optimization and Signal Processing” on 11th April, 2013 which was sponsored by IEEE, Madras Section, Alumni Association of KLU and Parent Teacher Association of KLU.

At the inaugural session, Dr. D. Devaraj, SB Counselor and the convener of the conference welcomed the gathering. Mr T.S. Rangarajan, Chairman, IEEE Madras Section, in his inaugural address, advised the participants to follow the ethics while publishing their research work and mentioned that Madras Section encourages the SBs to organize conferences, seminars and workshops on latest topics. In his presidential address, Dr V. Kannappan, Vice Chancellor, highlighted the significance of optimization techniques in solving the industrial problems.

Dr S.S. Dash, HOD/EEE, SRM University released the conf. proceedings and the first copy was received by Mr R. Arunkumar, SB Chairman.

Research papers were presented by research scholars, post graduate students and faculty members from various institutions in the area of Signal Processing, Neural Networks, Power System, Network Technology, Intelligent Control and Image Processing.

The conf. had the following invited lectures.

- “Challenges and Issues in Mobile Cloud Computing” by Mr T.S. Rangarajan, Chairman, IEEE Madras Section.
- “Advanced Techniques in Image Analysis” by Dr R. Balasubramanian, Associate Prof, Dept. of CSE, Manonmaniam Sundaranar University, Tirunelveli
- “Image Processing and its Applications” by Dr A. Banumathi, Assistant Prof., Dept. of ECE, TCE, Madurai
- “Computational Intelligence in Smart Electric Power Grid” by Dr S.S. Dash, HOD/EEE, SRM University, Chennai.

At the valedictory, Dr S.S. Dash distributed the certificates to the participants and the award to the winner of the best paper -- Ms. Suriyanarayani, Dept of ECE, TCE, Madurai for her paper on “Advanced Pixel based Texture Classification of Hilly Terrain from Cartosat-1 Data”.

Velammal College of Engineering & Technology, Madurai: FDP on “Research Methodologies”



The IEEE SB organized a three day Faculty Development Programme on “Research Methodologies” during 12–14 March 2013. After the welcome address by Dr. A. Shunmugalatha, Professor & HOD/EEE, SB counselor Dr. N. Karpagam felicitated. Principal Dr. N. Sureshkumar inaugurated the FDP and released the Proceedings.

Around 80 participants from various engineering colleges in Tamil Nadu participated in the programme. The topics such as Research approach for engineering problems, Publishing in journals / conferences, Report preparation, Strategies in completing successful PhD, Document preparation system - LaTeX, MATLAB applications in engineering, ANN & its application in research, Ant Colony Optimization & its applications, Consultancy & Student’s projects, Getting project funding, Research at research Institutes like IISc & IIT, Usage of online resources for research, and Research in abroad (U.S) were discussed. The resource persons for the programme were: Dr. A. Shunmugalatha, Dr. N. Karpagam, Dr. R. Narmatha Banu, Dr. S. Dhanalakshmi, Dr. S.

Vasuki, Dr. P. Alli, Dr. G. Manikandan, Dr. S. Rajpandian, Dr. L. Andal, Dr. P. Rajeshkannan, Dr. G. Velmathi, Dr. M. Janakimeena & Mr. S. Gopalakrishnan, Librarian.

The Ph.D scholars from various attended the FDP found the sessions were useful in their research. Principal Dr. N. Suresh Kumar distributed the certificates to the participants and S. Senthil Rani, Programme coordinator proposed the vote of thanks.

Report by: Dr. N. Karpagam

Valliammai Engineering College, Chennai: 3rd National Conference on Emerging Technologies in Electrical and Electronics Engineering



The Dept. of EEE organized the IEEE Madras Section supported 3rd National Conference on “Emerging Technologies in Electrical & Electronics Engineering” on 26th April 2013. Out of 70 papers on diverse topics encompassing Power Systems, Power Electronics, Energy Management, Control Systems etc., received from reputed institutes across the country, the expert panel selected around 40 papers for presentation.

Prof. G. Madhusudanan, HoD/EEE welcomed the gathering. Dr. N. Senthil Kumar, Professor, EEE, Mepco Schlenk Engineering College, inaugurated the conf. and in his address, highlighted the importance of organizing such conferences for the benefit of student community as well as faculty. He pointed out that such conferences would ignite a spark in the minds of budding engineers and they would be triggered to explore more in the areas of their interest. Dr. B. Chidhambararajan, Principal delivered the presidential address in which he spoke about the appropriateness of the conference in a scenario of power crisis across the state.

A keynote address on “Smart Grid” by Dr. S. S. Dash, Professor and HoD/EEE SRM University, marked the beginning of the paper presentation session. Dr. Dash began his address explaining the problems associated with the traditional grid and went on to highlight the role of Smart Grid in ensuring quality power to the consumers. He then played a video to enlighten the audience regarding the functioning of the smart grid.

About 15 papers were presented in the paper presentation session and two papers “Estimation and Mitigation of VFTO in 420kV GIS” by Mr. S. Reuban, CEG, Anna University and “Measurement and Analysis of Partial Discharge signals in 420kV GIS” by Mr. T. Prabakaran, CEG, Anna University were adjudged best by the judging panel which consisted of Dr. S. S. Dash, and Prof. K. Vijayakumar, both from SRM University. Cash awards to the winners in the paper presentation session and certificates to the participants were distributed in the valedictory function.

Report by: Prof. G. Madhusudanan, gmadhuped@yahoo.com

Francis Xavier Engineering College: RACST-13: National Conference



RACST-13, the national level technical conference on Recent Advances in Communication Systems and Technologies was conducted on 8th Mar 2013. Out of 162 papers received from all over the country, 56 were selected for presentation under the themes of VLSI, Embedded Systems and Communication System. Dr. K. Rajagopal, principal in his address, highlighted the objectives and benefits of participating in conferences which includes bridging the gap between the academicians and research community. Mr. C. Thangavelu, Scientist-F, Dy. Project Director, DRDO, Bangalore inaugurated the conf. and released the conference proceedings. In his special address, he pointed out the

recent trends in DRDO and also on the advances in communication systems. He recalled various developmental stages of DRDO and emphasized the students to take the leadership to be innovative. At the valedictory function, certificates were distributed to the participants by the chairpersons.

Report by: G.S. Sankari, Shally Kennedy



IEEE Computer Society Madras Chapter, IEEE CS SB-AVIT and Dept. of IT organized 5th National Conference on Information and Software Engineering during 26-27, Apr 2013.

At the inauguration on 26th, Dr. A. Anthony Irudhayaraj, Sr. Professor (Research), welcome the gathering and briefed them the theme of Conference. Dr. J. Shanmugam, Principal, presided over the function and delivered the presidential address. Dr. M. A. Dorai Rangaswamy, Sr.

Professor & Head(CSE & IT) introduce the chief guest Dr. D. Damodharan, Scientist 'E', Additional Director, Software Reliability Centre, Chennai who in his inaugural address highlighted the importance of innovative ideas relating to Software Reliability. Mr. H. R. Mohan, Chairman, IEEE CS, Madras Chapter and Associate Vice President (Systems), The Hindu, delivered the keynote address explaining the trends in the ICT and released the conference proceedings.

Around 100 delegates including the research scholars, faculty members and students from all over the country participated in the two days conf. in which about 35 technical papers were presented. Dr. M. D. Selvaraj, Professor, Indian Institute of Information Technology Design & Manufacturing, Chennai delivered an invited talk on "Green Communications". Prof. C. Karthikeyan, Associate Professor (IT), delivered the Vote of Thanks.

In Lighter Sense

Jungle Lion and City Lion

"Two lions escape from a zoo.

One of the lions had been captured from the jungle, so he runs back to the jungle.

The other was born in the zoo itself - so is basically a city-slicker. He vanishes into the city.

Three days later the jungle-lion is recaptured - and returned to the zoo.

A month passes, then two, three..... but city-lion is not traceable!

Finally, after six months the city-lion is also recaptured and brought back to the zoo.

Jungle-lion is amazed to see his friend.

Jungle-lion: For God's sake, how were you able to evade these guys for 6 whole months?!

City-lion: Kuchh nahi, yaar! I just went to a government department, and hid behind a huge pile of dusty files that they have there.

Jungle-lion: But what did you eat there?

City-lion: Arrey, there was an unlimited supply of government servants. Whenever I ate one, they hired five more. Nobody did any work anyway, so nobody missed the ones I ate.

Jungle-lion: Wow! But, then how did you get caught?

City-lion: Galti ho gaya yaar... On the last day I ate the chai-walla. Now, everyone missed their chai-walla & their chai! They launched a massive hunt. And I got caught!"

Fine Financial Management

A beggar to another beggar: I had a grand dinner at Taj yesterday.

How? The other beggar asked.

First beggar: Someone gave me a Rs 100/- note yesterday. I went to Taj and ordered dinner worth Rs 1,000/-, and enjoyed the dinner. When the bill came, I said, I had no money. The Taj manager called the police man, and handed me over to him. I gave the Rs 100/- note to the police fellow, and he sent me free.

A wonderful example of financial management indeed!!!!

Information Resources



Compiled by
H.R. Mohan
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3D printing 'bigger than internet': Proponents of 3D printing say it has the potential to alter radically a number of industries. Peter Marsh, FT manufacturing editor, talks to one such supporter - Abe Reichental of US-based 3D Systems - to find out how it works and if it really is a 'disruptive technology'. Watch this 4m 59sec video at <http://goo.gl/u3X6A>

Specifying LEDs For Commercial Use: Every day, there are many revolutionary developments in lighting. Light-emitting diodes, or LEDs, are one. Semiconductor LEDs are solid state lighting (SSL) and, like glass fiber optics (GFO) functional architectural lighting, based on total internal reflection, they differ completely from conventional incandescent, fluorescent, halogen, and metal halide lamps. LEDs are no longer an evolving topic but are now becoming mainstream for commercial or retail use, such as colleges/universities, data centers, laboratories and research facilities, high-rise multipurpose buildings, offices, hospitals, hospitality, recreation, factory/storage facilities, theaters/assembly, museums, water features, landscapes, libraries, retail stores, and other nonresidential facilities. This article at <http://goo.gl/eZkfk> suggests using a thoughtful out-of-the-box mixture of art, science, and imagination to create and specify attractive, practical, and sustainable lighting for commercial/retail use with LEDs.

Now, just use a spoonful of water to charge your mobile phone: Swedish fuel cell pioneers have invented a clean source mobile charging solution in PowerTrekk, dubbed the world's first portable fuel cell charger that runs on ordinary water. Full story at <http://goo.gl/7oJTQ>

Managing Your Future: Many in our industry have suffered job loss or job insecurity associated with the downturn in the economy and the slowing of construction work in general. When these cyclic downturns occur and there is less work available, it affords us all the opportunity to think about the future and consider our career development. This article gives some hints as to how to proactively manage your future by looking at five things: Everyone is a free agent; You are as good as what you just did; Every uncertainty is an opportunity; Change the world or be changed by it; and Treat your work as a piece of your life. Read the full post at <http://goo.gl/5BV8D>

Master These 10 Common Graces: Take two incredible engineers; one is easy to work with, the other is not. Who would you hire or want on your team? The answer is pretty easy—you'll pick the person who has better communication skills, is more positive when challenges are encountered, and has other tangible or intangible qualities that make him or her "easy to work with." Defining "easy to work with" is not easy; doing so usually results in someone listing qualities or examples of behaviors, which gets mushy fast. But doing so is important. These behaviors, which I call "common graces," if practiced, can genuinely help your career. Read the full article at <http://goo.gl/FDWDY>

Tech Trends 2013: Elements of post digital: Deloitte's Annual Technology Trends Report examines the ever-evolving landscape of technology put to practical business use. Once again, we've selected 10 trends that we believe have the opportunity to impact business over the next 18 to 24 months. This year's theme, Elements of postdigital, looks more deeply into the five forces of postdigital enterprise that we introduced last year: analytics, mobile, social, cloud and cyber. As we have worked more deeply with these elements of postdigital, we've discovered that the formulae of these combined elements are likely to have the most significant impact on business. More at <http://goo.gl/A3udS>

National Programme on Technology Enhanced Learning aims to reach more students: With its new certification initiative, the National Programme on Technology Enhanced Learning (NPTEL) has come a long way from its humble beginnings as a repository of video lectures. On the cards are translations, sub-titling and original content in different languages so that the courses reach more people. NPTEL is also moving to a massive open online course (MOOC) platform to host the content. More at <http://goo.gl/fYvtV>

Documentary On The History Of Apple And Microsoft Show It Was All About Copying, Not Patents: We recently posted about an absolutely ridiculous NY Times op-ed piece in which Pat Choate argued both that patent laws have been getting weaker, and that if we had today's patent laws in the 1970s that Apple and Microsoft wouldn't have survived since bigger companies would just copy what they were doing and put them out of business. We noted that this was completely laughable to anyone who knew the actual history. A day or so ago, someone (and forgive me, because I can no longer find the tweet) pointed me on Twitter to a 45 minute excerpt from a documentary about the early days of Microsoft and Apple and it's worth watching just to show how laughably wrong Choate obviously is. Visit <http://goo.gl/Tk1bc>

Webinar: Technical Computing on Campus: A Curriculum View: In this 25 min webinar, MathWorks engineers discuss the significance and broad application of Technical Computing in engineering education. Technical Computing is defined as the union of math and programming, and by having these skills, engineering students are better prepared for upper level courses, research, and industry. We will present best practices that highlight introducing these skills in a fashion that promotes mastery over the full curriculum track with a product focus on MATLAB & Simulink. Pl. visit <http://goo.gl/LoL6Z>

Webinar: Learning Basic Mechatronics Concepts Using the Arduino Board and MATLAB: The Arduino is an open source, inexpensive, powerful and flexible microcontroller board that is quickly becoming the preferred choice for a considerable number of electronics and robotics hobbyists worldwide. These qualities make the Arduino very well suited to learn basic Mechatronics concepts, especially within an academic setting. In this 42 min webinar we introduce the ArduinoIO package, which allows the user to perform Analog and Digital Input and Output, as well as to control DC, Servo and Stepper Motors directly from the MATLAB command window. Using this package instead of (or in addition to) the native development environment allows the student to focus more on solving the Mechatronics problems related to the project or task at hand, versus spending more time in writing, compiling and debugging C programs. Pl. visit <http://goo.gl/o6yOz>

Mini Reconfigurable Robots powered by new kind of motor: Researchers at MIT's Center for Bits and Atoms have created a little device called a milli-motein - the name combines its millimeter-sized components and a motorized design inspired by proteins, which naturally fold themselves into complex shapes. The minuscule robot could lead to future devices that can fold themselves up into almost any shape imaginable. To build this tiny robot, the team had to invent a new kind of motor: small and strong, and able to hold its position firmly even with power switched off. They met these needs with a new system called an electropersistent motor. It involves two magnets designed so that their fields either add or cancel, depending on which way the switchable field points. The team is looking to expand their motor into aerospace and medical applications. Watch this 3 min 13 sec video at <http://goo.gl/j6bMj>

Interactive, Adaptive Robot helps children with Autism: A group of mechanical engineers and autism experts at Vanderbilt University have developed an elaborate system of cameras, sensors, and computers designed specifically to help children with autism spectrum disorder (ASD) learn how to coordinate their attention with other people and objects in their environment. This basic social skill is called joint attention. NAO, a two-foot tall humanoid robot, is the "front man" for their new system. NAO has been programmed with a series of verbal prompts, such as "look over here," and gestures, such as looking and pointing at flat panel displays. Cameras track the child's head movements, so the system can determine where he or she is looking. The researchers say that children with ASD paid more attention to the robot and followed its instructions almost as well as they did those of a human therapist in standard exercises used to develop joint attention skill. Watch this 2 min 41 sec video at <http://goo.gl/x4tWq>

Indian Engineering Students Design Anti-rape Lingerie: Rape has become one of the most frequently reported crimes against women in India. To battle this scourge, a group of engineering students from SRM Univ., in Chennai have designed lingerie that gives electric shocks to sexual offenders. Read the story at <http://goo.gl/tWA6D>

Video: Comprehensive Software Eases Air Traffic Management (3m 43s): The primary FACET features incorporated in the Flight Explorer software system alert airspace users to forecasted demand and capacity imbalances. By having advanced access to this information, dispatchers can anticipate congested sectors (airspace) and delays at airports and decide if they need to reroute flights. Overall, the FACET developers at Ames assert that airspace users can use this information to develop enhanced flightrouting strategies that save fuel, preserve airline schedules, and reduce passenger delays and missed connections. Watch it at <http://goo.gl/qb88A>

Book: Lucky Strikes...Again:(Feats and Foibles of Engineers): "Lucky's book...makes me laugh again and again..." --Bill Moyers, Public Affairs Television, Inc. Bob Lucky, author of the widely acclaimed "Reflections" column in Spectrum magazine, provides a humorous, nostalgic collection of ten years worth of his own reflections on typical situations engineers encounter during their careers. Spiced with 20% new anecdotes and personal experiences, LUCKY STRIKES...AGAIN takes good-natured gibes at corporate bureaucrats while offering some not-so-subtle advice on ways to circumvent the bureaucracy and gives the bureaucrats some hints on when to look the other way. IEEE members can access this book free at <http://goo.gl/5N8HB>

The Seven Management Hats

Making a transition to management requires understanding the basic functions of the manager. Figure 2-1 shows the manager's work from seven basic perspectives—the seven management hats. Three hats describe the indirect workload and include administration, direction, and leadership. Four other hats describe the direct workload and include the people hat, the action hat, the high-anxiety hat, and the business hat. On your first day as a manager, you'll have administrative work that must be completed, you will provide direction to some of your people, and you will probably be expected to take the lead on some issue. You will have interaction with different kinds of people behaviors, there will be some challenging work, you may need to resolve a serious conflict, and you may be involved in activities at the organizational level that require putting on the business hat. This situation will continue as long as you remain in a managing position. As you become involved in the managing process you will recognize that you may change these hats many times during a typical workday. So let's look at these seven hats that managers wear, the expectations that go with them, how the expectations change as the occasion demands, and how managers develop an appropriate balance.

Managers must change among these seven hats whenever required. Each requires a different approach depending on the issues under consideration. Balancing the use of these seven hats challenges not only the new but also the experienced manager.

- The Administration Hat: Managing the nuts and bolts of the administrative routines can be delegated and should not dominate the manager's focus. Administration is an important function but by itself does not add value. It detracts from performance when not managed effectively and efficiently.
- The Direction Hat: Managers provide direction by teaching, coaching, promoting, innovating, working, and being responsive to the needs of the organization and its people. Managers build a proactive organization by maximizing the participation of available talent and providing the competencies for the future.
- The Leadership Hat: Leadership must be kept in perspective at the levels; it is not corporate leadership, and that's why I've referred to it as taking the lead. You become the leader by being the pathfinder, the visionary, and the coalition builder, and by providing opportunities for your professional staff to meet the organization's objectives and their personal career objectives.
- The People Hat: People are the most important asset and must be treated as the most important asset. Managers without some minimal understanding of human behavior create their own problems. People are unique so treat them accordingly. What may motivate one may not motivate another. One dictum: treat everyone with respect.
- The Action Hat: The action hat involves developing and understanding the workload; knowing the people and their competencies and limitations; budgeting and forecasting the need for resources; focusing on the needs of internal (I prefer using the term "colleagues" or "partners" for internal contacts) and external customers; and managing the manager's work.
- The High-Anxiety Hat: Managers face situations that test their moral and philosophical grounding, those challenging tasks that deal with serious people problems that cannot be avoided. Delaying these decisions creates a disquieting environment that generates frustration and takes up valuable time.
- The Business Hat: You are part of the organization's management so now is the time to take on those management responsibilities. Although your primary concerns relate to your unit, you now have a further responsibility to take into account the impact that your decisions have on other organizational units.

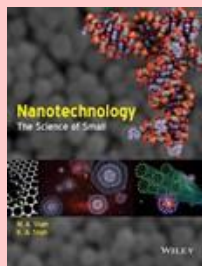
10 Things to Never Put on Your Resume

For job seekers, the resume may be the most important document they need. After all, what's on that simple piece of paper can mean the difference between landing an interview and landing in the circular file. While most job seekers concentrate on what they should include on their resume, few pay attention to what they shouldn't include. This article explores 10 things you should never put on your resume.

- A crazy objective
- Irrelevant job experience
- Achievements that aren't achievements
- Physical characteristics
- Strange hobbies
- Private matters
- Bad grammar and obscure words
- Unprofessional contact information
- Personal information
- Attention-getting tactics
- First impressions count a lot

Source: <http://www.salary.com/10-things-to-never-put-on-your-resume/>

Books



Nanotechnology: The Science of Small

Authors: M. A. Shah, K. A. Shah.
Published by: Wiley India Pvt. Ltd.
Pages: 204.
Price: Rs. 349/=

This book aims to create an interest for Nano science in the students so that they develop an appreciation for the wider aspects of sciences and technologies involved in it. While it is meant for the graduate and undergraduate students in Nanotechnology or Materials Science, it can also be used as a resource material for post graduate students and active researchers. The coverage includes, illustrative explanation of basic concepts, review of the history and evolution of Nanosciences and Nanotechnology, application aspects in major sectors such as medicine, energy, electronics, current research trends, experiments involving nanoparticles. The book also presents facts, activities, review questions for effective learning. More about the book at <http://goo.gl/JJwZz> Readers of CSI-eNL can get this book at 20% discount with free shipping. Contact: abbhardwaj@wiley.com (This book is being given as a prize to the TechQuiz Winners)



Know Your English (Vol. 2): Words Frequently Confused

Author: S. Upendran
Published by: Universities Press.
Pages: 416.
Price: Rs. 250/=

This book, 2nd in a four volume series is based on the popular column, Know Your English, which has been a regular feature in The Hindu since 1982. Teachers, students, and those who are keen on honing their speaking and writing skills will find the series useful. This volume contains about 480 pairs of words that are frequently confused. Each entry gives the meaning of the words and points out the difference between them. For eg. In the case of Gift & Present, A 'gift' is considered to be more valuable than a 'present'. Similarly, between Jail & Prison, one is sent to jail when commits a minor offense and is sent prison if has committed a major crime. Examples are also provided showing how the words can be used in everyday contexts. Some of the entries also contain information about the pronunciation and the etymology (origin) of the word. For more details including the list of 480 pairs discussed, pl. visit: <http://goo.gl/TJeEd> (This book is being given as a prize to the TechQuiz Winners)

TechQuiz – 2013-05

(Two Prizes to win – Books reviewed will be presented to the winners)

1. Twenty years back, in 1993, the Mosaic browser was released by Marc Andreessen and ----- of the National Center for Supercomputer Applications (NCSA) at the University of Illinois, Urbana-Champaign.
2. Windows 95 : Chicago = Windows 7 ; -----
3. “Give me six hours to chop down a tree and I will spend the first four sharpening the axe”. Who said this?
4. IEEE, is pronounced as -----
5. A six sigma process is one in which ----- % of the products manufactured are statistically expected to be free of defects

Email your answers by **10th Jun 2013** to ieee.techquiz@gmail.com with subject **“techquiz-2013-05”**. Please provide your name, designation, company/institution, full postal address (to send the prize) and the contact phone nos. after the answers.

There are TWO prizes to win. Two prizes will be in the form of books which are briefly reviewed in this edition of the newsletter. They are being offered by **Wiley India Pvt. Ltd** (www.wileyindia.com) and **Universities Press** (www.universitiespress.com). Answers along with the winners' info will be published in the next issue.

Answers & Winners of TechQuiz-2013-04

- Green House Gases, Bill Gates, U.R. Rao, 8, Steam Engine
- “Digital and Analog Communication Systems” from Wiley India to Shantanu Singh Chauhan (Goa)
- “Know Your English (Vol. 1): Idioms and their stories” from Universities Press to Sumit Kumar Manna (Kolkata)

IEEE India -- Forthcoming Events

- FDP on Embedded systems and its application to power system, power electronics: May 3-4, 2013 at Arunai College of Engineering, Tiruvannamalai, Tamil Nadu, India. Contact Dr. N. Kumarappan at kumarappan_n@hotmail.com or Dr. T. S. Sivakumaran at sivakumaran1969@gmail.com or Section Office at ieemas@airtelmail.in / ieemas@gmail.com
- ICACCI-2013: IEEE International Conference on Advances in Computing, Communications and Informatics. August 22-25, 2013 at Sri Jayachamarajendra College of Engineering (SJCE), Mysore. Last date for submission of papers for Main Tracks and Special Sessions: March 30, 2013 and for Workshops and Affiliated Symposiums: April 30, 2013. Contact: Dr. Manjunath Aradhya, Mobile: 09886896108 E-mail: aradhya.mysore@gmail.com Website: <http://icacci-conference.org/>
- RIPOC'13: National Conference on Recent Innovations in Power Systems Operation & Control. June 28 – 29, 2013 at Mohandas College of Engineering & Technology, Anad, Trivandrum. Last date for registration: April 29, 2013. Contact: Mr. Mahesh M, Email : ripoc13@gmail.com Mobile: 09544483250. Website: www.mcetonline.com/ripoc13
- ICHCI'13: IEEE International Conference on Human Computer Interactions. August 23-24, 2013 at Saveetha University, Chennai, India. Website: <http://www.ichci.in/>
- GHTEC SAS 2013: IEEE Global Humanitarian Technology Conference. August 23-24, 2013 at Technopark, Trivandrum, Kerala, India. Last date for paper submission: March 29, March 2013. Contact: sbabu@ieee.org Website: <http://www.ghetec-sas.org/>
- R10-HTC2013: IEEE Region10 Humanitarian Technology Conference 2013. August 26-29, 2013, at Tohoku University Kawauchi-North Campus , Sendai, Japan. Website: <http://www.r10-htc2013.org/>
- Project Management National Conference, India 2013. September 27-28, 2013 at The Leela Kempinski, Gurgaon, NCR - New Delhi. Theme: Project Management - Bringing Certainty in Uncertain Times. Last date for Abstract Submission: Apr. 15, 2013. Website: <http://www.pmi.org.in/conference2013/>
- C²SPCA 2013: International Conference on Emerging Trends in Communication, Control, Signal Processing and Computing Applications. October 10-11, 2013 at Oxford College of Engineering, Bengaluru, India. Website: <http://www.c2spca.com>
- LCN-2013: The 38th Annual IEEE Conference on Local Computer Networks (LCN). October 21-24, 2013 at Citigate Central, Sydney, Australia. Paper registration: April 5, 2013. Website: <http://www.ieeelcn.org>
- CCEM-2013: IEEE International Conference on Cloud Computing for Emerging Markets. October 16-18, 2013 at Bangalore, India. Website: <https://ewh.ieee.org/ieee/ccem/>
- SYMPOL-2013: International Symposium on Ocean Electronics. October 23-25, 2013 at Kochi, India. Contact: 1 Dr.P.R.S. Pillai, Email: prspillai@cusat.ac.in Mobile: +91 484 2576418 and Dr.M.H. Supriya, Email: supriya@cusat.ac.in Mobile: +91 484 2576418. Website: <http://sympol.cusat.ac.in/>
- IEEE CATCON 2013: IEEE International Conference on Condition Assessment Techniques in Electrical Systems December 6-8, 2013 at Jadavpur University, Kolkata, India. Last date for full paper submission: July 15, 2013. Contact: catcon2013@gmail.com Tel: +91 33 2414 6949 , +91 98300 92189, +91 90511 64988. Website: www.catcon2013.org
- ACC 2013: Second International Conference on Advances in Cloud Computing. 19-20, Sep 2013 at Bangalore. Contact: Dr. Anirban Basu at abasu@pqrsoftware.com
- ICICN-2013: International Conference on computational Intelligence and Communication Networks. September 27-29, 2013 at GLA University Mathura. Last date for paper submission: April 30, 2013. Contact: GS Tomar. Email: gstomar@ieee.org Ph: 09425744460. Website: www.cicn.in
- ISGT ASIA – 2013: Innovative Smart Grid Technologies Conference. November 10-13, 2013 at Bangalore, India. Last date for paper submission: 20th June 2013. Contact: pesbangalorechapter@gmail.com Phone: +91-80-42455555. Website: <http://ieee-isgt-2013.asia/>

- IMPACT-2013: International Conference on Multimedia, Signal Processing and Communication Technologies. November 23-25, 2013 at Dept. of Electronics Engineering, Aligarh Muslim University, Aligarh, India. Last date for paper submission: 31st May 2013. Contact: Prof. Ekram Khan, Ph: 09457110112, Email: ekhan67@gmail.com Website: <http://www.electronics-amu.com/impact-2013.html>
- ISED-2013: 4th International Symposium on Electronic System Design. December 12-13, 2013 at Nanyang Technological University, Singapore. Paper Submission Due on 31st May 2013. Website: <http://ised.seedsnet.org/>
- ICGCE-2013: International Conference on Green Computing, Communication and Conservation of Energy. December 12-14, 2013 at Chennai, India. Website: <http://www.rmd.ac.in/icgce2013/>
- INDICON 2013: Theme: “Impact of Engineering on Global Sustainability”. December 13-15, 2013 at Victor Menezes Convention Centre, IIT Bombay, India. Last date for manuscript submission: June 15, 2013. Contact: Prof. Suryanarayana Doolla, Publication Chair, suryad@iitb.ac.in (mobile: +91 96190 46767) or Mr. Ashok Jagatia, General Chair, ashok@acevin.com (mobile: +91 98212 42200). Website: <http://www.indicon2013.org>
- ANTS-2013: 2013 IEEE International Conference on Advanced Networks and Telecommunications Systems. December 15-18, 2013 at SRM University, Chennai, India. Contact: hod.itce@ktr.srmuniv.ac.in
- ICSISPD-2013: Sustainable Innovation and Successful Product Development for a Turbulent Global Market. December 16-18, 2013 & Special Workshop on Doctoral Research. December 17, 2013 at Chennai, India. Last date for submission of abstracts: 15th May 2013. Contact: Prof. Dr. K.Chandrasekaran. Email: kesavan.chandrasekaran@gmail.com Website: <http://icsispd2013.org/>
- ICMIRA-2013: International Conference on Machine Intelligence Research and Advancement. December 21, 2013 at Shri Mata Vaishno Devi University, Katra, Jammu and Kashmir. Contact: Email: icmira@icmira.com Mobile: +91-9419165834, Website: www.icmira.com
- ICSE-2014: 36th International Conference on Software Engineering. June 1-7, 2014 at Hyderabad International Convention Centre, Hyderabad. Deadline: June 15, 2013 for Mentoring program. Deadline: September 13, 2013 for Research papers. Deadline: January 14th, 2014 for Posters track. Website: <http://2014.icse-conferences.org/>

IEEE OU's organizing or supporting events, to get their events listed in the “Forthcoming Events” column in the IEEE India Council newsletter, may send the event details **THROUGH THE SECTION OFFICE BERAERS** by email to ieeeindiainfo@gmail.com **Pl. note that direct emails from the organisers will not be entertained.** This decision has been taken by India Council Execom to ensure that the events are authorized /approved by IEEE OUs.

Pl. provide the following details (to match the format of the listing)

Event name (short name: full name)
 Dates of the event (month dates, year)
 Place of the event (institute & city)
 Deadline for call for papers (if any)
 Contact details (name, phone, email id)
 Website

We request the details be provided with the above information in the format in which the events are listed above.

For example,

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INDICON 2013: Theme: “Impact of Engineering on Global Sustainability”. December 13-15, 2013 at Victor Menezes Convention Centre, IIT Bombay, India. Last date for manuscript submission: June 15, 2013. Contact: Prof. Suryanarayana Doolla, Publication Chair, suryad@iitb.ac.in (mobile: +91 96190 46767) or Mr. Ashok Jagatia, General Chair, ashok@acevin.com (mobile: +91 98212 42200). Website: <http://www.indicon2013.org>

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Please DO NOT send brochure files in pdf / jpg. The above details are adequate.

Announcements

IEEE India Info congratulates

- Prof. T. Thyagarajan, for his appointment to the position of 2013-2014 R10 Industry Relations Coordinator and to the 2013-2014 R10 Executive Committee.
- Mr. K.V. Rupchand, Chairman, IEEE Power and Energy Society, Madras Chapter for steering IEEE PES Madras Chapter to receive the Outstanding Chapter Runner-up Award for 2012 (with a cash award of \$250) for the third year running (2010, 2011 & now 2012).

Free IEEE COMSOC Tutorial on “The Big Shift to the IPv6 Internet”

This presentation covers The IPv6 Transition Models & Benefits, as well as IPv6 Drivers & Applications. Transition planning and adoption of IPv6 is critical to the on-going stability and growth of Internet Protocol based. Training, management, support, billing, security and applications development need to be engaged to allow you to be IPv6 ready. More at

<http://www.comsoc.org/form/tutorial-registration-big-shift-ipv6-internet>

Women in Engineering Resources

- IEEETV WIE Channel: <https://ieeetv.ieee.org/channels/wie>
- IEEE WIE short promo video: <https://ieeetv.ieee.org/player/html/viewer?dl=&channel=wie#changing-the-world-wie>
- IEEE WIE “I Change the World. I am an Engineer.” Video: <https://ieeetv.ieee.org/player/html/viewer?dl=&channel=wie#i-change-the-world-i-am-an-engineer>
- WIE Posters: http://www.ieee.org/membership_services/membership/women/poster.html
- WIE eResources – eBook and Apps for Apple and Droid devices: <http://www.ieee.org/ns/periodicals/WIE/issue1/index.html>

Contributions

IEEE India Info, the newsletter of the IEEE India Council welcomes contributions from Sections and members. The Section Chairs may pl. send brief reports on conferences, workshops and other major events held in the section along with info on news student & society branches added, honours & recognition to the members of the Section. Call for papers & participation in national & international conferences organized or supported by IEEE Sections or Societies are also welcome in the standard format. While sending the matter, pl. ensure that they are in MS WORD doc / rft format. Pl. avoid matter in pdf / jpg format. For guidelines on submitting matter pl. visit <http://goo.gl/dzSIJ> Pl. send the matter by email to ieeeindiainfo@gmail.com or before 7th of each month for getting published in the same month issue of the newsletter.

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