

Message from Chairman



Dear Members,

As you probably know Mr. Wai-Choong (Lawrence) Wong (R10), Singapore has been elected as the 2015 IEEE Vice President-Member and Geographic Activities. On behalf of the IEEE India Council I extend a warm greetings to Mr. Wai-Choong (Lawrence) Wong for his election as the IEEE Vice President-Member and Geographic Activities for the year 2015.

I am happy to inform you that Dr. Roberto De Marca, IEEE President 2014 and Mr. Ramakrishnan, IEEE R10 Director Elect 2015 participated in the face-to-face meeting of the India Council held on 30th October 2014 in Bangalore. Dr. Roberto expressed his pleasure to be with the India Council during its EC meeting. He said that India is performing well and being a Big Country it has a great potential and this should be used by all members for the development of IEEE. He further added that India being the second largest membership holding country with most of the young brains, should leverage for further development. He appreciated the Humanitarian technology activities taken in India and to restrict from social media like Face book, Twitter, LinkedIn etc., since all these are threat to professional organizations. He insisted that all the members should work on the leverage that India gets for the enrolment of student membership fee which is US \$27 only, when compared with other countries. The young students should be motivated for retention. The MGA should work more on beneficial values for the members, push for more value addition for the membership enrolment and propose change in business model in the years to come. One like Microsoft Open access should be worked on for membership development. The New members can discuss with the experienced members and workout strategy for membership developments. The members should be aware that the available free access to information, participation facilities in meeting will result in network development and career management. He concluded with his remarks that the sections can approach Region Directors for support for development activities.

Mr. Ramakrishnan, IEEE R10 Director Elect 2015, thanked the Chairman IC and the members of Execom for inviting him for the EC meeting. He added that after detailed discussion with the past R10 directors on the various issues and after open call for volunteers he is about to finalize the Execom list for R10; He was confident that R10 will take over the other regions if all the members work with dedication, commitment, determination and without any discrimination. He extended his support to all the sections that he shall do his best and assured to have one more IEEE Metro Area Workshop next year in India

similar to the one organized by Bangalore section. He also recalled his experiences in the HTC 2014 conference recently held in Chennai hosted by IEEE Madras section and informed that the next HTC 2015 will be hosted by Philippines. He thanked the Chairman IC for accepting to hold the INDICON from 2015 in third week of December, since it clashes with GLOBECOM. He finally requested the support of all members for success of R10 Activities.

The highlights of the Membership Development Report, October 2014 shows that the total IEEE membership ended the month down by -4,237 members, or -1.0% and the total Society memberships are down by -3,919 or -1.2% from the Membership statistics of October 2013. However, the happy news is that there is an increase in the IEEE Membership and Society Membership by 2.3% and 1.6% respectively from the September 2014 statistics. I think as pointed out by Dr. Roberto we should work hard to achieve more in the Membership development and Retention.

I want to place on record, the successful conduct of the IEEE Metro area workshop by Bangalore Section. It was good to know that the program had 300 plus participants and the schedule of program was with only hands on training on BIGDATA and IOT DATA and not like regular paper presentations. The workshop was highly priced with intention to have value for the presentations. The feedback was excellent and around 100 members from the industries were inducted to IEEE. The workshop materials were homemade and it was a great successful event. As encouraged by Mr. Ramakrishna, the IEEE R10 Director Elect 2015, we should try have a similar event in India next year.

It was an interesting development in the meeting that two of the newly inducted Vice-Chairs of India Council proposed different activities to organize. Dr. R. Hariprakash, Vice-Chair (Professional Activity) informed that a lecture series program/training program are planned to be organized and Mr. Sabarinath Pillai, Vice Chair (Young professionals) has planned for section chairs of Young professionals to interact and find avenues to work. Further, Dr. Rajesh Ingle, Member at Large informed that a two day SIGHT Camp is planned. I congratulate these volunteers for their commitments to organize events on behalf of the India Council.

Nominations for the 2014 IEEE Region 10 Young Professionals Volunteer Award has been called for. Each year, IEEE R10 Young Professionals Volunteer Award recognizes an individual volunteer whose substantive projects or achievement of a relatively short nature (one to three years) have left an undeniable imprint on the fabric of YP operations within Region 10. The award will be based on a selection that recognizes individuals involved with YP activities who are recognized for singular achievement in the development and completion of a project(s) or activity(ies) which are directed to the fulfillment of one or more of the Region's goals and/or objectives. The individuals nominated must be YP members at the time of nomination. The Nomination Deadline is **11th December 2014**. I would like encourage the deserving individuals to file their nominations on time.

As I wrote in my message in the last month news letter, R10 has called for proposals to host 2016 TENCON. Deadline for submission of proposals is **10 December 2014**. The Sections chairs are advised to make use of this opportunity.

I would like to appreciate the members for their volunteer contributions so far to the growth of IEEE in India. I am looking forward for your support and inputs for the growth of IEEE in India in future.

M. Ponnavaikko

Chair, IEEE India Council



NT Nair, Editor, writes,



Recently I have been inducted as a member of the IEEE Life Members Committee (LMC), a Joint Committee of IEEE and the IEEE Foundation, which provides leadership in the identification of, and support to, the interests of Life members (including future Life members) in activities of IEEE. The Life Members Committee is also responsible for the administration of the Life Members Fund in support of activities that are of professional concern and interest to Life members.

I presume, most of the members know that the IEEE “Life” status is an automatic process based on an individual’s membership record. To qualify for Life Member status, a member must be at least 65 years of age and have been a member of IEEE or one of its predecessor societies for such a period that the sum of his/her age and his/her years of membership equals or exceeds 100 years. ([IEEE Bylaw I-102.2](#)).

I bring up this life member topic now to impress upon the IEEE fraternity that the life members are not a *spent force* and, in fact, a rich repository of ‘*Experiential Knowledge*’ accrued over decades of hands-on working in one’s own chosen field of activity. There is no short cut to acquire such experience, and one has to slog through the hard terrains of work-landscape for years to add value to this experience. On the part of the life member, it is not a static condition or the time to call it a day and take rest for the rest of the life. This knowledge needs to be applied for the benefit of the society - as an obligation or indebtedness to it, because society definitely would have subsidized education utilizing tax-payers’ money and also thrown open its assets to create an environment for the person to carry out his professional activities.

To remain relevant to the profession and wanting by the society, sitting on the laurels of yester-years is not the way to be followed by life members. Technologies and management practices are ever-changing and that applies to life members too, who should continue the learning spree as before to remain up-to-date. That is, to continue as a student all through and learn the emerging trends regularly, dovetailing them into the knowledge-base built over the decades. That will make the life member a sought after person among the professionals, a gratifying situation for the elders. It is not difficult and let us continue to work hard as in the past to ensure this status.

Best wishes.

N T Nair



Words of Wisdom

The very least you can do in your life is figure out what you hope for. And the most you can do is live inside that hope. Not admire it from a distance but live right in it, under its roof.

- Barbara Kingsolver

IT in October 2014

Prof. S. Sadagopan Director, IIIT-Bangalore s.sadagopan@gmail.com



General

- In economic news, India set to become \$ 2 trillion economy this year; Government bites the bullet - **Diesel pricing** is freed - moves to market pricing on October 19, 2014; **FDI in realty sector** opened up in October 2014; India joins 20 Asian countries to launch **Asia Infrastructure Investment Bank** on October 24, 2014; India clears ₹ 80,000 crores defence deals on October 27, 2014; Coal Reform announced on Oct 30, 2014; Crude oil prices globally slip below \$ 93 in early October, helping India (that depends heavily on imported crude) significantly in trade balance; Japan's **Softbank** invests \$ 10 billion in India in October 2014
- In political news, BJP shows **impressive victory in Haryana and Maharashtra Elections** (results announced on October 19, 2014); **Haryana, Maharashtra get new Chief Ministers** on October 27, 2014; Election Commission announces **polls in J&K and Jharkhand in November** - December with results to be announced on December 25, 2014; Prime Minister's "**Swachh Bharat**" (Clean India) Mission was launched on October 2, 2014; hopes to improve cleanliness across the country in the next five years; Prime Minister launches **model village scheme** where every MP will be funded to help create 5 model villages over the next 5 years on October 12, 2014; launches **Shrameva Jayate** program of **Labour Reform** on October 16, 2014 and EPFO UAN Scheme that allows workers to take their Provident Fund savings with them when they shift jobs; Prime Minister creates history by **celebrating Diwali with the Jawans** in Siachen border on October 23, 2014; Sardar Patel birthday celebrated across the Nation as **National Integration Day** on October 31, 2014
- **Stampede in Patna** (Gandhi Maidan) kills 33 people on October 4, 2014; **Cyclone Hudhud** causes extensive damage to coastal towns in Andhra Pradesh and Orissa on October 12, 2014; disaster management teams did a wonderful job with minimal loss of life; **Canadian Parliament shooting** accident claims a life on October 23, 2014; **Ebola** threat increases further in October 2014; **Hong King violence** continues in October 2014

Technology

- Samsung talks of a new 60 GHz technology for high speed Wi-Fi on October 12, 2014
- The much talked about Sapphire for display for smartphones fizzles out as Apple supplier GT shuts door in October 2014
- Bionic eye successful on October 13, 2014
- ISRO successfully launches 3rd navigation satellite on October 16, 2014 (major step in its 7-satellite GPS alternative)
- Japan rolls out its new passenger aircraft on October 19, 2014
- Government sets up IP think tank in October 2014
- NASA unmanned rocket that was to supply International Space Shuttle (ISS) exploded within 6 seconds of launch on October 29, 2014

Markets

- **Amazon** launches huge “sale” during October 4-6, 2014; **Flipkart** talks of “**Big Billion Day**” sale on October 6, 2014; sells □ 600 crores (\$100 million) within a day! There were some pricing, technology glitches and fulfillment problems too!!
- **Facebook** completes \$ 19 billion acquisition of **WhatsApp** on October 6, 2014
- **Cognizant** acquires Digital Marketing company **Cadient** for \$ 30 million on October 6, 2014
- **TrueCaller** with maximum customers in India get \$ 60 million funding in October 8, 2014
- Wipro founder **Azim Premji** buys into Chennai-based **FSS** (Financial Software & Systems) that has been running ATM switches, for □ 350 crores on October 12, 2014
- **Muhurt** trading on Day 1 of Samvat 2071 (Start of new Calendar for the Indian trading community on Diwali Day) saw NSE going past 8,000 on October 23, 2014
- UK-based **New Telecom** buys **Nimbuzz** (VikasSaxena founded Messenger service and VoIP Service out of India with 200 million users) for \$ 250 million on October 27, 2014
- **Softbank** invests \$ 10 billion in India with **OlaCabs** and **SnapDeal** getting funded in October 2014
- **Lenovo** completes purchase of **Motorola mobile** division from Google in October 2014

Products

- **Microsoft** announces the launch (in 2015) of next generation **Windows 10** for mobile, Tablet and PC (possibly a free update) on October 1, 2014
- **Microsoft** launches **NokiaLumia730**, 830 and 930 in India priced □ 15,299, □28,799 and □ 38,699 respectively on October 1, 2013 in India
- **AppleiPhone 6** and **6 Plus** launched in India on October 17, 2014; pre-booking starts on October 7, 2014; priced at same level as iPhone 5S; launches **iPad Mini 3**, **iPad Air 2** and **5K iMac**with superior resolution
- **OnePlus** from China ready to launch low cost smartphone (around \$ 200) in October 2014
- **Samsung** launches **Galaxy 4G** and **Galaxy Alpha** in India in October 2014
- **Google** launches **Android 5.0** (Lollipop) and new **Nexus Phones** and **Tablets** on October 15, 2014
- **Apple** launches new **OS X** for **Mac (Yosemite)** for free download from October 17, 2014
- **Apple Pay** goes on stream on October 20, 2014
- **Philips** launches Senior Citizen’s Phone priced at □ 3,800 on October 20, 2014
- **Apple** iOS 8.1 ready for free download on October 21, 2014
- **Google** starts “Invitation only” **Inbox** as a better alternative to Gmail on October 23, 2014 (tenth anniversary of Gmail)
- **Samsung** debuts **Nook tablet** on October 23, 2014
- **Microsoft** Devices launch **Nokia 130** for □ 1,649 on October 27, 2014
- **Microsoft** launches fitness device “**Microsoft Band**” for \$ 199 on October 30, 2014

Indian IT companies

- **TCS, Infosys** post good results for July - September 2014 quarter
- **Flipkart** manages to sell □ 600 crores worth sales on their e-Com site within 10 hours on October 6, 2014 though such an effort leads to problems for consumers forcing the founders (Bansal brothers) to write an Apology letter to Lakhs of customers!
- **Flipkart** has Alexa traffic ranking of 7 in October 2014 with 26 million registered users, 14,000 strong, 20 million products, 6 million visits per day, 5 million shipments per month in 300 cities in India of 20 million products in 70 categories!
- Vinay Agarwal's **Unicel** delivers 50 million SMS every day on behalf of its clients (IBM, Flipkart and HDFC Bank) and targets □ 85 Crores in FY 2015
- With expected SoftBank investment of \$ 200 million **OlaCabs** is a billion dollars baby (market capitalization) and has 33,000 taxis signed up in 18 cities in India; talks of presence in 100 cities by March 2016
- Udupi-based Rohit Bhat founded **Robosoft's Camera 4 App** in Apple "featured App" in October 2014
- Goonjan Mall founded **Online Prasad** set to expand to 100 temple network in 2015, a concept unique to India
- **Indigo Air** orders 250 Airbus A 320 planes in October 2014, a record in recent aviation history
- **Flipkart** signs up 3 million square feet space at □ 300 crores per year in October 2014
- **HearingPlus**, a startup that sells hearing aids has 70 clinics in 3 years; manages 100% growth for 3 years
- **Wipro** plans 10,000-strong **Open Source team**
- Bangalore-based startup **iViz** got acquired by US company **Cigital** on October 30, 2014

MNC companies in India

- HP splits into two **HP Enterprise** (Software services) and **HP Inc.** (PC, Printer division) on October 6, 2014
- UK telecom major **Vodafone** wins □ 3,200 crores tax dispute on October 10, 2014
- **Google** puts a Doodle on **Mars Orbiter Mission (MOM)** on October 29, 2014 (30 days of MoM)
- **IBM** that used to be No 2 in headcount among IT Services company is not growing in India
- **Yahoo** India cuts 300 jobs in Bangalore and moves develops back to USA in October 2014
- **Nokia** plant in *Sriperumbudur* in Chennai (iconic large plant from the global major of yesterday with capacity to produce 500,000 handsets a day) shuts down on October 31, 2014

Education & Research

- **Nobel Prize for Medicine** goes to John O'Keefe (USA) and May-Britt Moser and Edvard Moser ((Norwegian) (announced on October 6, 2014)
- **Nobel Prize for Physics** goes to Japanese trio Isamu Akasaki, Hiroshi Amano and Shuji Nakamura for their invention of Blue LED announced on October 7, 2014)

- **Nobel Prize for Chemistry** goes to American and German scientists Eric Betzig of Howard Medical Institute and William Moerner of Stanford University in USA and Stefan Hell of Max Planck Germany for their invention of super microscope (announced on October 8, 2014)
- **Nobel Prize for Literature** goes to French author Patrick Modiano (announced on October 9, 2014)
- **Nobel Peace Prize** goes to Indian activist Kailash Satyarti and Pakistan child activist Mala (announced on October 10, 2014)
- **Nobel Prize in Economics** goes to French economist Jean Tirole (announced on October 12, 2014)
- **PhD students get increased stipend of ₹ 25,000**(from current ₹ 16,000)effective from October 2014
- **Ben Nelson** launches **Minerva Project** (online-based College education that follows new model) in October 2014 targeting Indian students

People

- **Amazon CEO** Jeff Bezos visits India on October 1, 2014
- **Infosys Finacle head** Haragopal quits on October 1, 2014
- **TCS former CEO** (1996 - 2009) S Ramadorai retires from Tata Sons on October 6, 2014
- **Facebook CEO** visits India and meets Prime Minister Modi on October 8, 2014
- **Infosys cofounders all log out** of Infosys on October 8, 2014 with Kris Gopalakrishnan stepping down; NR Narayana Murthy, Nandan Nilekani, Shibulal, NS Raghavan and Dinesh stepped down earlier; it was a historic milestone in the history of Indian industry where there was smooth transition from founders to professional management after 33 years history with the company's market capitalization moving from ₹ 28.5 Crores on the day of listing on 1993 to ₹ 2,00,000 crores in 2014 with annual business of \$ 8 billion in 2013-14
- Four Indians in "**Fortune October 2014 list of 40 of under 40**"
- Arvind Subramanian is the new **Chief Economic Advisor** for the Indian government (appointed on October 16, 2014)
- **President Pranab Mukherjee** visits Santa Claus official home in Arctic Circle on October 16, 2014
- **India-born Mexican scientist Sajaya Rajaram** wins **World Food Prize 2014** for contributions to record wheat production
- **Alan Eustace**, Google executive jumped from altitude of 1,35,890 feet (edge of space) and descended in 15 minutes at peak speed of 822 miles per hour on October 25, 2014, setting the world record for free fall jump; the balloon used in the feat was manufactured by TIFR Balloon facility in Hyderabad!
- Vietnam Prime Minister, SoftBank CEO and IEEE President visit India in October 2014
- India remembers **Sardar Valabhbbhai Patel** on his birthday by way of celebrating it as National Integration Day on October 31, 2014

Infrastructure

- India helps Sri Lanka rebuild **Colombo Jaffna Rail link**, 339 KM long link, with \$ 800 million credit and 4,000 people working for four years and executed through IRCON (Indian Railway Subsidiary); the link was opened on October 13, 2014 (closed in 1990)
- The **world's largest terry towel plant** by **Trident** Group in Budni, Madhya Pradesh inaugurated by Chief Minister Shivraj Singh Chouhan on October 7, 2014
- **Saint-Gobain** inaugurates one of the largest float glass complex with 1000 tons per day capacity at Bhiwadi, Rajasthan on October 27, 2014
- **L & T Bags** □ 2,979 crore order for building “Statue of Unity” in Gujarat on October 27, 2014
- **Sun Edison** bags 150 MW solar power plant order from Government of Karnataka in October 2014

Telecom

- **Skype** to discontinue calls to phone lines in India from November

Interesting Applications

- NPCI (National Payment Corporation of India) launches **NUUP** (National Unified USSD Platform) for mobile payments across India (it works on any mobile phone including feature phones) in October 2014
- Bangalore **Namma Metro** announces top up through mobile in October 2014
- **IRCTC** App on Android launched on October 12, 2014
- **AADHAR** to become eKYC, paving the way for widespread use (as per October 16, 2014 (Home ministry decision))
- **Apple Pay** (contact less credit / debit card payment system that uses NFC (Near Field Communication)) goes on stream on October 20, 2014
- **Corporation Bank** launches e-Mandate service in October 2014
- Government of India to announce **eVisa** by October end
- Amazon, Flipkart and Jet Airways tie up with **RuPay card** on October 23, 2014
- **State Bank** launches mPassbook on October 23, 2014
- **Electronic Toll collection FASTag** starts on Delhi Mumbai corridor on October 31, 2014

Interesting numbers

- **Telecom subscriber** base on August 31, 2014 stood at 951.84 million with 924.32 million mobile subscribers and 27.52 million wire-line subscribers (with net addition of 5.60 million mobile subscribers and net reduction of 0.16 million wire-line subscribers in August 2014) (TRAI Press Release No. 66/2014 dated October 14, 2014)
- **India's Foreign Exchange** on October 31, 2014 was at \$ 315.9 billion (RBI)
- **Indian Rupee** stood at 61.44 against USD on October 31, 2014 (RBI)
- On October 31, 2014 **BSE Sensex** and **NSE NIFTY 50** (Indian stock market indices) were at 27,894 and 8,300 respectively (Reuters)

- World has **more mobile phones than people** (7.19 billion as the tipping point) in October 2014
- The **Top 3 global brands** today are **Apple** (\$ 118 billion), **Google** (\$ 107 billion) and **Coca Cola** (\$ 81 billion) as per Interbrand, UK
- **Apple India** revenue jumps from ₹450 Crores in 2010 to ₹ **4500 crores in 2014**; **Google Ad revenue** in India set to cross **\$ 1 billion** in 2014!
- With \$ 511 million profit (33% increase) and \$ 2,201 million revenues for June - September quarter **Infosys** pleasantly surprises the market when Vishal Sikka announced the results for the first time in October 10, 2014
- **TCS** to hire 35,000 in 2014-15, **Infosys** to hire 15,000 in 2014-15
- India improves its position from 63 to 55 in the global hunger index
- **Petrol is ₹ 1 cheaper** from October 13, 2014 thanks to falling crude oil prices globally (\$83 on October 16, 2014)
- Indian government launches **3,000 MW Solar power** norms on October 16, 2014
- **TTD** feeds 5,00,000 devotees in Tirumala during Garuda Seva on October 1, 2014 with free food!
- **India** has over **6,00,000 taxis in Top 10** cities with 35,000 Radio Cabs and 30,000 with taxi aggregators (Apps based services like Uber, Ola and TaxiForSure)



Words of Wisdom

*Still round the corner there may wait,
a new road or a secret gate.*

- J. R. R. Tolkien

*Happiness is not the absence of problems,
it's the ability to deal with them.*

- Steve Maraboli

*Try to make at least one person happy every day. If you
cannot do a kind deed, speak a kind word. If you cannot
speak a kind word, think a kind thought.*

- Lawrence G. Lovasik

*Great things are not accomplished by
those who yield to trends and fads and popular opinion.*

- Jack Kerouac

Information Resources

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44 Engineering Management Lessons: Welcome to engineering management. It's fun, it's exhausting, it's rewarding — but most importantly it's new! What worked for you before won't work now. You'll have to acquire a new set of skills, and shed some bad habits in the process. Here is a short guide to get you started. <http://goo.gl/a76jbq>

IEEE Code of Ethics: We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree: <http://goo.gl/Hq3Rnf>

IEEE - The Advanced Learning Workshop: A resource for IEEE-HKN chapter and IEEE student branch leaders: The Advanced Learning Workshop (ALW) is a “self-contained” kit to enable IEEE-HKN student chapters and IEEE student branches to organize and conduct programs and workshops focused on student learning and academic success. <http://goo.gl/GWFtNY>

What Is Digital Signal Processing?: If you watch television, connect to the Internet, use a digital camera, make a cell phone call, drive a car, type on the keyboard of a home computer, or use a charge or debit card, you are taking advantage of Digital Signal Processing. This introduction to The Essential Guide to Digital Signal Processing explains what Digital Signal Processing is, starting with an explanation of signals. <http://goo.gl/RBDxIE>

MITRE Systems Engineering Guide: The primary purpose of the MITRE Systems Engineering Guide, or SEG, is to convey The MITRE Corporation's accumulated wisdom on a wide range of systems engineering subjects—sufficient for understanding the essentials of the discipline and for translating this wisdom into practice in your own work environment. This edition of the SEG has more than 600 pages of content and covers more than 100 subjects. It has been developed by MITRE systems engineers for MITRE systems engineers. Systems engineering is a team sport, so although the SEG is written “to” a MITRE systems engineer, most of the best practices and lessons learned are applicable to all members of a government acquisition program team, whatever their particular role or specialty. <http://goo.gl/jmDqZ2>

25 Microchips That Shook the World: A list of some of the most innovative, intriguing, and inspiring integrated circuits. In microchip design, as in life, small things sometimes add up to big things. Dream up a clever microcircuit, get it sculpted in a sliver of silicon, and your little creation may unleash a technological revolution. It happened with the Intel 8088 microprocessor. And the Mostek MK4096 4-kilobit DRAM. And the Texas Instruments TMS32010 digital signal processor. Among the many great chips that have emerged from fabs during the half-century reign of the integrated circuit, a small group stands out. Their designs proved so cutting-edge, so out of the box, so ahead of their time, that we are left groping for more technology clichés to describe them. Suffice it to say that they gave us the technology that made our brief, otherwise tedious existence in this universe worth living. We've compiled here a list of 25 ICs that we think deserve the best spot on the mantelpiece of the house that Jack Kilby and Robert Noyce built. <http://goo.gl/vvkZCT>

Postmortem on Last Year's Predictions: One way to win the predictions game is to make a lot of guesses and remember just the winners. Here at IEEE Spectrum, we play a harder game. We told you

what to expect in 2013, and now we are ‘fessing up to our misses, as well as bragging about our hits. Truth be told, we’re a bit proud of the misses as well. After all, it’s not our fault if reality fails to meet our high standards! <http://goo.gl/krn2NZ>

We Will End Disability by Becoming Cyborgs: Neural interfaces and prosthetics will do away with biology’s failings. Hugh Herr is a living exemplar of the maxim that the best way to predict the future is to invent it. At the age of 17, Herr was already an accomplished mountaineer, but during an ice-climbing expedition he lost his way in a blizzard and was stranded on a mountainside for three days. By the time rescuers found him, both of his legs were doomed by frostbite and had to be amputated below the knee. Once his scars healed, Herr spent months in rehab rooms trying out prosthetic legs, but he found them unacceptable: How could he climb with such clunky things? Surely, he thought, medical technologists could build replacement parts that wouldn’t slow him down. “Fifty years out, I think we will have largely eliminated disability”. <http://goo.gl/XvEAdN>

Can Computing Keep up With the Neuroscience Data Deluge?: Today’s neuroscientists have some magnificent tools at their disposal. They can, for example, examine the entire brain of a live zebrafish larva and record the activation patterns of nearly all of its 100,000 neurons in a process that takes only 1.5 seconds. The only problem: One such imaging run yields about 1 terabyte of data, making analysis the real bottleneck as researchers seek to understand the brain. To address this issue, scientists at Janelia Farm Research Campus have come up with a set of analytical tools designed for neuroscience and built on a distributed computing platform called Apache Spark. <http://goo.gl/xUgzst>

Becoming Bionic: Engineering Beyond Biology: Transmuting nature to hardware that can repair or strengthen human capabilities. “Becoming Bionic” explores how engineers and scientists transmute nature to engineering. Adapting what they observe in the living world, they create useful products or processes, going beyond the simple imitation of biological structures. Part of the “Engineers of the New Millennium” series, this program is a co-production of the Directorate for Engineering of the National Science Foundation, and IEEE Spectrum Magazine. <http://goo.gl/bn67oC>

Europe Wants a Supercomputer Made From Smartphones: A European private-public consortium wants to make supercomputers using smartphone and tablet CPUs. And not just any supercomputers. They’re shooting for the moon—aiming for exaflops (10¹⁸ or quintillions of floating-point operations per second), some thousandfold faster than the top of today’s high-performance heap. <http://goo.gl/79OsgD>

10 Ways the Internet and Psychology Are Intersecting: Computers, the Internet, mobile phones, and massive computing power have fundamentally changed how people live, view themselves, interact with others, and spend their time. The context of human life has been changed dramatically by digital technology, and it’s critical to understand how all this influences human psychology, development, and perhaps even the brain. Cyberpsychology is the branch of psychology dedicated to the study of the intersection of psychology and all facets of technology, particularly digital and computer technology. Read on to see how technology is impacting people socially, how computers and related technology might be changing human cognition, and the less positive sides of technology such as cyberbullying. <http://goo.gl/ugZZHO>

Ten Ways to Live Sustainably: Environmental science is all about finding ways to live more sustainably, which means using resources today in a way that maintains their supplies for the future. Environmental sustainability doesn’t mean living without luxuries but rather being aware of your resource consumption and reducing unnecessary waste. <http://goo.gl/Hgt28N>

10 things you need to know about Google’s Project Ara modular smartphones: The build-it-yourself modular Google smartphone is one step closer to giving you the chance to build your perfect phone. It’s not going to be available this year. But, 2015 could be the beginning of a significant shift in the smartphone landscape. Project Ara is part of the Advanced Technology and Projects (ATAP) group. The group is what Google retained in its sale of Motorola Mobility to Lenovo. The project is a bold plan

to create an open-source smartphone hardware platform. Users would start with a piece of base hardware known as an Endo. Features would be added to the Endo as plug-and-play modules. <http://goo.gl/L0I78H>

Six innovations revolutionising farming: Agricultural production has tripled in half a century.

To find out how, we crowdsourced new technology in smallholder farming. In 1798, economist Thomas Malthus predicted that the world would exceed its food supply by the late 20th century. While he was right to identify the challenges of feeding a growing population with a finite amount of land, in the last half a century agricultural production has tripled. So, how did this happen? The answer: innovations in farming technology. Smallholder farmers in particular have seen a rise in productivity over the last decade. So what are the innovations making the difference? We asked our community and crowdsourced the answers. <http://goo.gl/v6bVkf>

Why graduates should take advantage of the rail industry's skills gap: As train travel increases, so does the need for talented graduates to join the sector. This is why it's a great career option. The UK is currently seeing unprecedented public investment in rail with huge projects set to transform our aging network for the future. Yet as the workload increases the industry is facing a shortage of skilled workers to deliver on the investment. <http://goo.gl/jyNWzo>

What is it like to start a graduate career in transport?: An engineering degree doesn't necessarily mean you will become an engineer. It's a vast industry with roles at all levels and stages of project delivery. Recent engineering graduate, Melina Christina, explains how a degree in engineering has led to a career in transport planning and modelling. <http://goo.gl/DTq4Mw>

How to find valuable work experience while you study: Gaining work experience while studying is one of the best ways to improve your job hunt prospects. Potential employers like to see evidence that you're actively developing core work skills and building your CV. A variety of work experience also allows you to test out possible careers and learn about a particular job, organisation or sector, as well as make useful contacts. Additionally, if you've got your heart set on a graduate scheme with a particular organisation, previous work experience with them can often open the door. <http://goo.gl/3b7I6A>

The rise of crowdfunding: 10 things to know: Crowdfunding platforms are changing the way we finance projects and services, but the laws surrounding them are still ambiguous. Crowdfunding is a tool that allows anyone -- be it startup founders, musicians, artists, students, children, or even someone in a developing country who lacks basic electricity -- to attract a pool of people via the internet to invest in their business idea. A funding target is established, and rewards to backers are offered. This new type of startup business model has the opportunity to disrupt industries and change the way we determine success and let the best ideas flourish, rather than the best access to capital. It's exciting, because the venture capital model that powers Silicon Valley and the global startup scene is inherently biased based on geography and connections. According to the Small Business Administration, about 600,000 new businesses are started in the US every year. The number of startups funded by VCs? 300. That means 99.95% of entrepreneurs won't get funded. To affect real change, we have to understand the basics: what defines crowdfunding, how it works best, and how the current laws shape what's possible. We also need to look at the ways the law is changing and what it means for the future of crowdfunding. Here is a list of the 10 most important things to know about this important new buzzword. Know them at <http://goo.gl/W7UIpz>

4-D Printing Turns Carbon Fiber, Wood Into Shapeshifting Programmable Materials: Just as 3-D printers create objects that have three-dimensional characteristics, 4-D printers create objects that have four-dimensional characteristics, in that they include a dynamic component that causes their structure to change over time—relying on water, heat, or light to activate them. Using a multi-material printer, it's possible to generate objects with these properties all in one go. Such “programmable materials” may one day mean that you can buy flat-pack furniture at Ikea, take it home, and hit it with a garden hose while you watch it slowly assemble itself. We don't even have to speculate: MIT is working on this exact thing. <http://goo.gl/uYPSkW>

Innovations in mobile phone recycling: biomining to dissolving circuit boards: More than 1.8bn mobile phones were purchased in 2013 and only 3% will be recycled. Can emerging technologies boost these low rates? <http://goo.gl/G5FScp>

10 things you should know about Bitcoin and digital currencies: Bitcoin and other digital currencies have emerged as potential disruptors to the financial system, but fear, theft, and illegal activity still hang over them. Bitcoin has injected itself into a lot of conversations about the future of technology, economics, and the internet. The future of digital currencies remains a controversial topic. After reading these 10 things to know about the confusing world of digital currencies, you'll feel confident joining the conversation. Full post at <http://goo.gl/W928t3>

Indians on open source honour roll: Sayan Chowdhury couldn't believe his name would be etched on the wall of fame along with other Mozillians. The Mozilla Monument outside the company's office in San Francisco recognizes contributors who've helped the maker of the Firefox browser and other products keep the internet alive, open and accessible. Chowdhury is one among the 5,000-odd Mozilla volunteers doing his bit for the love of code. <http://goo.gl/x9PQ2q>

Six lessons for digital public services from across the world: From chat rooms for victims of sexual violence in South Africa, to trendsetting initiatives in the US, we explore the insights from six digital successes and failures. The ubiquitous presence of the internet in our lives has encouraged the UK government to think seriously about how technology could reconfigure, and improve, the provision of public services. What lessons can be learned from what other countries are doing with digital public services? We asked six professionals from around the world to share their stories. <http://goo.gl/eANkOC>

Missing Maps: nothing less than a human genome project for cities: A huge number of the world's most vulnerable human settlements have remained unmapped ... until now. Enter an unprecedented plan to map the world's forgotten places. <http://goo.gl/dxf3wL>

Five Common Causes of Organizational Dysfunction: Regardless of size, all human groups are subject to the same dynamics. Factors that hamper a small group can also cause a much larger structure to falter. In business, managers and employees alike suffer when an organization doesn't function optimally. Pat Brans points out what dysfunctional organizations have in common and how to spot the five biggest problems. Learn what you can do to turn your organization around. <http://goo.gl/89IMAE>

Words of Wisdom from the Movies: For all you movie lovers, here's a compilation of words of wisdom from some of our favorite movies. From Yoda to Robin Williams to Professor Dumbledore and even Will Smith, here are all the uplifting quotes you need. Watch at <http://goo.gl/JEPfMV>

How To Create Your Future: Here's an inspirational video with 48 life lessons from the free ebook "How To Create Your Future," which includes training from 16 world-class authors and teachers on topics such as setting goals, manifesting money, creating a magnetic personality, increasing your brain power, and simply being happy, no matter what. Watch at <http://goo.gl/m6pTMW>

Inside Steve Jobs schools: swapping books for iPads: Schools in the Netherlands have shunned textbooks and only use Apple tablets for teaching and learning. A year in, journalist Sarah Marsh investigates how pupils and teachers are faring. <http://goo.gl/Bo5RPo>

Leadership For Dummies: Great leaders have certain qualities that motivate those around them. But beyond leadership qualities, you have to develop your mission as a leader and then continuously examine your strengths, weaknesses, opportunities, and threats (shortened to SWOT) to keep yourself and your team at the top of your game. <http://goo.gl/Qs2Vc0>

25 Images You Won't Believe Weren't Photoshopped: With more and more people becoming proficient at using image editing software like Photoshop it can be hard to tell whether what you see on the internet is real or fake. While most of the time your skepticism is probably going to serve you well, every once in a while you may be in for a bit of a shock. These 25 images you won't believe weren't Photoshopped will probably do just that. Watch at <http://goo.gl/aHwkfU>



IEEE NEWS

From Around India

IEEE U P Section

Activity Report

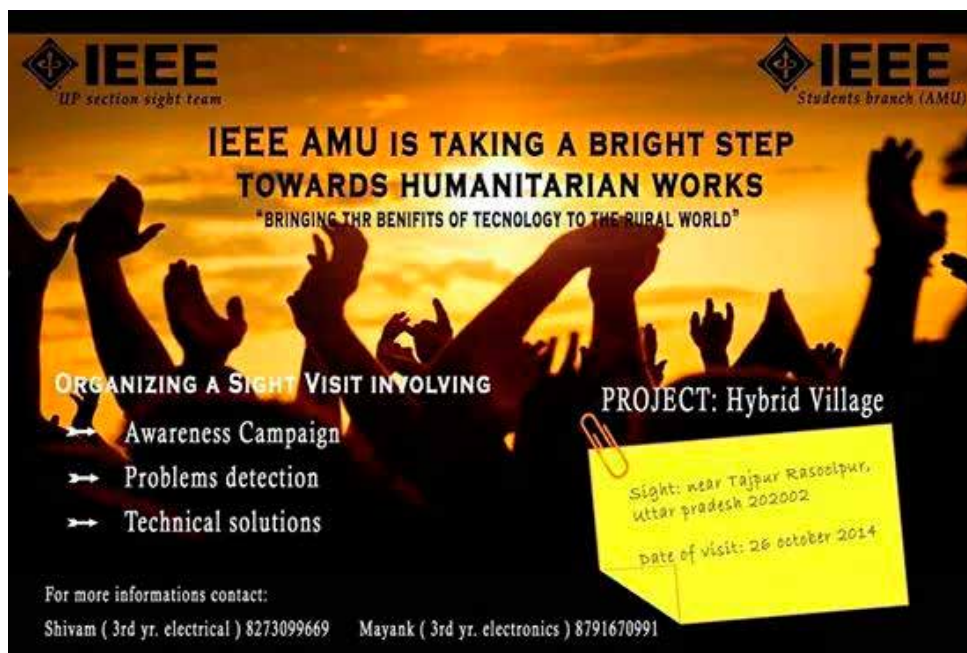
SIGHT CAMP

26th October 2014, Sunday, 9:00 am to 3:30 pm

SURVEY REPORT ON VILLAGE PROBLEMS

A Team of 21 IEEE Aligarh Muslim University Students Conducted a Sight Visit in RASOOLPUR VILLAGE to identify the problems in the village and suggest some Models and solutions for that.

Team is working under the guidance of Dr Mohd Rihan(Counselor-IEEE AMU)



REPORT

1. EDUCATION

PROBLEM:-

- Lack of curiosity or interested of Education in children.
- Due to **Lack of Money** parents are not able to send their children to private school, hence depend on government school.

- Only **ONE** Government school.
- No education after **EIGHT**.
- Teachers are irresponsible.
- Approximately 50% of teachers are absents.
- Those teachers are available are interested in **GOSSIPING** not in teaching.
- Negligence of education by parents.
- When the students get their allowances (e.g. Dress, stationary etc.) then they did not attend their classes.
- Instead of going to school children went to the farmland in the season of sowing and reaping of crop.
- Most of the 8th pass students are not able to read Simple Sentences of HINDI.

SOLUTION:-

- A **compulsory schemes** should be made by Government that “the students and teachers of Good Institutions from urban area should spend some times in teaching to student of rural background by using **Audio and Video tools**. So that, Maximum number children could be attracted towards joining the school.
- Government should launch certain schemes where children are awarded with **some sort like money** or any other things, to make them attract towards education.



2. ELECTRICITY

PROBLEM:-

- No Electric Meter Connection.
- Total availability of electricity is nearly about **5 to 6 hours per day** with a frequent cut in these hours.

- Due to **High cost of Solar Panel Setup**, people are not able to install it in their houses.

SOLUTION:-

- Make people aware about **Bio Gas plant, Solar phone Chargers, Solar Lanterns... etc.**
- Reduce the taxes on Solar Energy equipment. So that, it can be reached to everyone limit.



Making the People Aware of the rightful ways for Sanitation

3. SANITATION

PROBLEM:-

- No proper Draining System.
- Lack of toilets due to which women have to defecate in the open, which threatens their dignity and their safety.
- The discharge of untreated wastes in water system.
- No proper supply of fresh water.
- In rainy season water is filled on road which is the main reason of causing diseases.

SOLUTION:-

- Provision of potable water sources and latrines.

4. AGRICULTURE

PROBLEM:-

- Lack of awareness of material resources, which cause of **depletion of Fertile Soil.**

- Lack of storage of food grains.
- Inadequate **Irrigation Facility**.



Testing the Education Status of the Village

5. Other Problems

PROBLEM:-

- Lack of medical facility.
- Many **BPL** people have no **RASION CARD**.

So Students are now planning to develop some projects and Models based on the survey report to benefit the humanity.

In future Students are planning to hold two more SIGHT Camps in nearby villages to prepare a better model by linking Government policies to the people, Making aware and creating simple technological projects and models.



Team SIGHT IEEE UP Section



Report on IEEE Sponsored Leadership Workshop

On Nov 01, 2014 Indian Institute of Information Technology Allahabad organized a one day IEEE Sponsored Leadership Workshop. The workshop was coordinated by Dr. Satish Kumar



Singh, IIIT Allahabad and sponsored by IEEE Uttar Pradesh Section. This type of event is first time conducted by the section. About 100 participants including IEEE Student branch office bearer and faculty counselors from Uttar Pradesh section were registered and attended the workshop.



The workshop started with the welcome address by Prof. Somenath Biswas (Director, IIIT Allahabad) followed by lamp lighting and bucket presentation to invited speakers and guests. Dr. S. N. Singh (Chairperson IEEE UP Section) IITK, Dr. S. C. Srivastava (Executive Committee Member, IEEE UP Section) IITK, Dr. Dilip K Sharma (Joint Sec. IEEE UP Section) Dr. G. C.



Nandi IIITA, Dr. U. S. Tiwary IIITA, Dr. Madhvendra Mishra IIITA were in the list of few eminent invited resource persons.

Professor S. C.



Srivastava delivered a talk on Smart Grid Technology: Merging of Electricity and ICT Infrastructure while Prof. S. N. Singh highlighted the Role & Responsibilities of Professional Societies like IEEE in Enhancing the Technical Education. He also discussed how to get good publication in various journals of repute. Prof. G. C. Nandi presented a popular lecture on Role of Engineering and Technology for Humanity: A

Vision for Next Decade. Prof. U. S. Tiwary delivered an interesting lecture on 50 Years of Indian Technical education: The Gain and Loss? Dr. Dilip Kumar Sharma highlighted about the various resources for students provided by IEEE. He enlightened the students how to get the maximum benefits by joining IEEE. Last but not the least Dr. Madhvendra Mishra involved the participants through his very creative and interactive deliverance.



He nicely presented about the Leadership-Analyzing Entrepreneurial Behavior. All the participants enjoyed the workshop and became quite motivated to take the role of a real leaders in their field of choice. All the participants were awarded the participation certificate and the workshop concluded with

vote of thanks by Mr. Avinash Kumar Singh Chairperson, IEEE-SB-IIITA.



As per the feedback recieved by the participants the event was big success and Uttar Pradesh section desired to organize similar workshops in future.

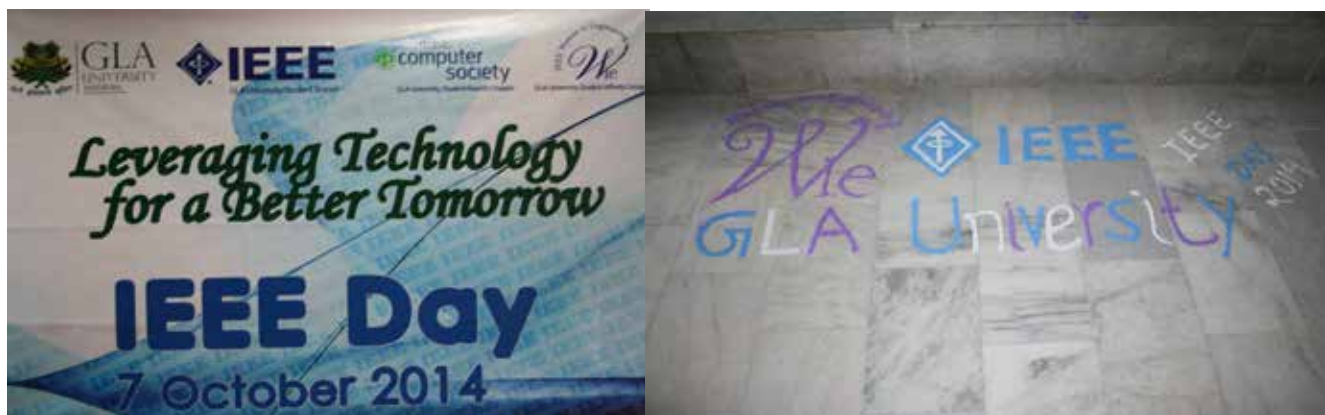


Words of Wisdom

*Choose your pleasures for yourself, and
do not let them be imposed upon you.*

- Lord Chesterfield

IEEE Uttar Pradesh Section: IEEE Day Celebration at GLA University, Mathura (October 7, 2014)



IEEE Student Branch GLA University Mathura, IEEE Computer Society GLA University Student Branch Chapter & IEEE Women in Engineering GLA University Student Affinity Group celebrated the IEEE Day on 7th October, 2014 with great zeal and enthusiasm. Being the member of such great association it was an honor for us to celebrate this day. Many senior members of IEEE were part of this celebration. We organized many competitions on this day among the students. The students created a very fascinating color Rangoli depicting the logo of IEEE and IEEE Women in Engineering.

Celebration started with the Online Poster Making Competition related to IEEE. Next to this, IT Quiz Competition was held with lot many students participated in it.



After all these competitions the Convener of IEEE Day 2014 Celebration Dr. Dilip Kumar Sharma told the importance of being the member of this huge association and advantages of being part of this professional body and explaining this year's theme of IEEE Day "Leveraging Technology for a Better Tomorrow" followed by speech of Head of Department, Prof. A S Jalal to contribute our innovative ideas for welfare of the society. Then Director- IET, Prof. Krishna kant gave a very informative expert lecture on "Multi-Core Architecture" to all the students.



The celebration was ended up by giving the prizes to the winner of the competitions and honoring the members of IEEE at GLA University, Mathura.



Words of Wisdom

*My wish isn't to mean everything to everyone
but something to someone.*

– Oscar Wilde

IEEE CAS Society Student Branch Chapter IIT Roorkee

1. **Title of the initiative/event:** Workshop on “Advanced Topics in VLSI Circuit Design” & Student Poster Session on “Microelectronic Circuits”
2. **Total number of participants:** 102 registered participants +4 Speakers
3. **Brief description of the event:**

IEEE CAS Society Student Branch Chapter Organized a 2 day workshop on “Advanced Topics in VLSI Circuit Design” and student poster session on “Microelectronic Circuits”. In this event, 97 participants, 6 guests and 4 speakers are attended. Especially, we have invited two speakers from IISC Bangalore and IIT Madras to talk on their area of expertise.

On the first day, inauguration was graced by Prof. M. V. Kartikeyan Head of Department Electronics and Communication Engineering, IIT Roorkee. After that Prof. Amrutur Bradwaj from IISC Bangalore delivered 3 hours talk on Ultra Low Voltage Design: Challenges and Opportunities. This talk is primarily focus on the following aspects: fundamental limits of voltage scaling; minimum energy point; practical limits of voltage scaling; circuit design for ultra low voltage; methodology; and adaptivity. In the afternoon session, Prof. Nagendra Krishnapura from IIT Madras delivered 3 hours talk on synthesis of opamp and phase-locked loop topologies from first principles. This talk is targeted on the following points: Negative feedback with integrator as the central element; Synthesis of opamp topologies and Synthesis of phase locked loop topologies. After this talk, we have arranged a plenary talk by the Prof. Amrutur Bradwaj, Prof. Nagendra Krishnapura and Prof. Bishnu Prasad Das on the topic of recent trends in VLSI circuit design. In the evening session, the selected posters are displayed and the participants are lively interacted with the presenters. At the same time, the evaluation committee assessed the best poster award.

On the second day, Prof. Bishnu Prasad Das from IIT Roorkee delivered 1 and 1/2 hour talk on warning flipflop for dynamic voltage and frequency scaling in ASICS. The talk is focus on warning prediction sequential for transient error prevention. After that, Prof. Nagendra Prasad Pathak from IIT Roorkee delivered 1 and 1/2 hour talk on RFIC design. The talk is mainly focused on the following points: Design & Characterization Tools; RF Transceiver Fundamentals; Essential Concepts in RF Design; Design of On–Chip Passive RF Circuits; Design of RF Circuits using Semiconductor Solid state Devices and Example of RF/Microwave Wireless Systems. The closing ceremony was graced by Prof. A. K. Saxena, Convenor of Microelectronics and VLSI group, ECE Department, IIT Roorkee and Vote of Thanks is given by Prof. Anand Bulusu Faculty Advisor, IEEE CAS Society SBC IIT Roorkee. After that certificates of participation were given to all participants.

Acknowledgement: The IEEE CAS Society Student Branch Chapter IIT Roorkee wholeheartedly thank the IEEE CAS Society for their financial support. This event was funded through CAS Outreach Initiative 2014.



M V Chauhan Paper Contest: A brief report

M V Chauhan All India Student Paper Contest 2014 tried to bring together all IEEE students members of India to discuss the latest advancements and future directions in the areas of IEEE. The contest invited full paper submissions from undergraduate and postgraduate students and doctoral students in all areas of interest to IEEE in the Engineering, Technology and Science. This year it was floated by IEEE India SAC Team under the leadership of IEEE India Council -Vice Chair (student's activities) Dr Preeti Bajaj and online submission system by easy chair was made available to the students for submission of papers. Three prizes were declared as First: Rs. 6000; Second: Rs. 4000; Third: Rs. 3000.

Total 13 high quality papers from 34 authors were submitted right from DA-IICT, Indira Gandhi Technical University for Women, Delhi, PICT, SPIT, Kolkata, Medicaps and many other reputed institutions. The seven papers are in doctoral , one PG and five were in undergraduate category. Based on reviewers remarks, originality of the work, organization, Literature review, concept, top three have been shortlisted as prize winners. Around 12 reviewers have reviewed all papers and based on the committees' recommendations, finally following have been declared as winners for the paper title indicated against their names

1. First Prize-Paper id 1, Sanket Patel from DA-IICT Ahmadabad (IEEE Student no 92799734) entitled as ' Design & Analysis of Low Noise Amplifier at Ku-Band' in doctoral category
2. Second Prize-paper id no 8, Dhawani Panchal from SPIT Mumbai, (IEEE student membership no) entitled as 'Complex event processing for evolving cities' from Postgraduate category.
3. Third Prize-paper id 9, Sohum Mishra from Heritage Institute of technology Kolkata from (IEEE student membership no 93138307) entitled as ' PiRover: A Novel Low cost Design and Implementation of remote controlled Surveillance System' from undergraduate category.

Above three winners are invited to present their papers in INDICON 2014 to be held in December 2014 at Pune. The expenses, prize money, scroll and certificates are sponsored by IEEE India Council. Many congratulations to winners.



IEEE Madras Section



IEEE Computer Society, Madras Chapter
and
Computer Society of India, Chennai Chapter



Professional Development Program

on

Internet of Things (IoT): Technology, Applications, and Impact

How you can capitalize on the next big thing in IT

on Friday, 21st November 2014

CSI Education Directorate, Taramani, Chennai - 600113

Words of Wisdom

*We have two choices: continue to blame the world
for our stress or take responsibility for own reactions
and deliberately change our emotional climate.*

- Doc Childre and Howard Martin

*Do more than belong: participate
Do more than care: help
Do more than believe: practice
Do more than be fair: be kind
Do more than forgive: forget
Do more than dream: work*

- William Arthur Ward

Technical Workshop on “Concepts and Design of PWM Controller and Data Logger Using Embedded System”



The IEEE Robotics and Automation Society's (RAS) objectives are to promote and impart knowledge to the scientific, literary and educational activities pertaining to UG courses. Industries tie-up activities with OEMs for the project design implementation to the education institutes was focused during this workshop. On 30th Oct 2014, RAS organized a one day technical workshop with intent to teach the concepts of embedded system with hands on training.

At the inaugural session, Dr. P.A. Manoharan, Chairman, RAS, Madras Chapter welcomed the gathering and briefed about the workshop and then introduced Dr. Jonathan Joshi, Chief Executive Officer, Eduvance (Vanmat Tech. Pvt. Ltd.) the key resource person for the workshop. Mr. H.R. Mohan, Chairman, IEEE Computer Society & Professional Communication Society, delivered the keynote address highlighting some of the trends in technology. To encourage the participants, he had announced two cash awards of Rs. 3000/= and Rs. 2000/= to two best teams who will come out with a working model of a project based on their learning in the workshop.

The lecture sessions and hands-on-training were provided by Dr. Jonathan Joshi. Dr. P.A. Manoharan extended support during the hands-on.

The workshop sessions covered: Programmable System on Chip (PSoC) & its configuration in designing the PWM generator and a data logger; Design Implementation of a data logger using a chip programmable Analog to Digital Converter (ADC); and Use of PSoC Creator IDE and embed the program on chip.

A batch of five students and one faculty from six colleges participated in this workshop. They include: JPR College of Engineering; Dhanalakshmi Engineering College; Sairam Engineering College; St. Joseph's College of Engineering; Hindustan University and MGR University.

Assessments were done based on the interest of the students in setting up a lab setup and the faculty's participation. 18 nos. of PSoC4 Development Kit hardware were donated to Dhanalakshmi Engineering College; Hindustan University and MGR University for setting up an embedded system lab in their institute.



Report by: Dr P.A. Manoharan, Chair, IEEE RAS Madras

Student Essay Contest

Harnessing the Power of ICT for our New Initiatives

Computer Society of India, Chennai Chapter, in association with the IEEE Computer Society, Madras and IEEE Professional Communication Society, is pleased to announce an Essay Contest on the role of Information & Communication Technology (ICT) in India for school and college students. The contest will be in two streams:

- Stream 1: Open to School Students (from 8th Standard to Plus 2)
- Stream 2: Open to College Students (UG students of all disciplines)

Now ICT has ubiquitous presence in India and other parts of the world, and it is being applied in various fields such as Manufacturing, Banking & Finance, Telecom, Healthcare, Hospitality, Transportation, Education, Agriculture, Environment, eGovernance, eCommerce, and Defence for quality and productivity improvements. India is a major force in the global IT landscape. ICT is a key driver of our economic development and accounts for about 6.5% of our GDP and provides employments to over 3 million people. The Government of India has recently launched three major initiatives – Digital India, Make in India, and Clean India, in which ICT can – and should - play significant roles. Through this contest, we seek your thoughts, innovative ideas and solutions on how ICT could support and help these initiatives. We propose to share ideas from the young minds to PMO and DeitY.

An eligible participant is required to submit his/her essay on any one of the following topics by **31st Dec 2014**:

1. **ICT for Digital India**
2. **ICT for Make in India**
3. **ICT for Clean India**

Submissions will be assessed by a panel of experts on criteria such as originality, novelty, applicability, potential value of the proposed idea(s) and clarity and style of presentation.

The contest winners in EACH stream will be awarded the following prizes & certificates:

- One 1st Prize: Rs. 10000
- Two 2nd Prizes: Rs. 5000 of each
- Four 3rd Prizes: Rs. 2500 of each
- Ten Consolation Prizes: Amazon gift voucher of Rs. 1000 each
- Certificate of Merit: For 25 short listed essays over and the above prize winning essays

For more details & complete brochure, please visit the website: <http://goo.gl/FziCmK>

For clarifications / queries if any, please email us at essay.csi@gmail.com

The essay contest is supported by: Dynamic Group, Anjana Software Solutions Pvt. Ltd, HP Networking, Cognitive Platform Solutions (CPS) Pvt Ltd, Orbit Innovations and CloudReign Technologies.

Please feel free to share this information to all your contacts and encourage participation in this contest.



**ARULMIGU MEENAKSHI AMMAN COLLEGE OF ENGINEERING,
Vadamavandal-604410. Tiruvanamali DISTRICT
TAMILNADU**

AMACE IEEE STUDENT BRANCH ACTIVITIES

Special Lecture on “ POWER COMPUTING FOR TODAY’S WORLD”

(16-09-2014)

The AMACE Student’s chapter CSI/ IEEE/ SAE/ISTE/ organized this Special Lecture “Power Computing for Today’s World” on 16-09-2014 at 1.30pm onwards at Seminar Hall (AMACE) for the Final Year students at AMACE college campus, Vadmavandal,Tamilnadu.

The program started with the Principal Dr..M.R.Mohan delivering the welcome addresses and he also honored the speaker.

DR.R.Hariprakash Dean – AMACE, highlighted the contributions of Hewlett Packard (HP) and reiterated the importance of industry academia linkage for the betterment of student’s community. He further added that these kinds of industry technical expert lectures shall make the students to be turn-key for industrial needs at the end of the course of study.

The speaker representing Hewlett Packard (HP) **Mr. Kaushik Shaw, Marketing Development Manager, Hewlett Packard India Sales Pvt Ltd.** addressed the 200 plus final year students. He spoke about his journey till date. He invoked the students to have a second thought always to choose their career as entrepreneur.

The speaker started his address with the demographic advantage of our country in the future and requested the youngsters to think of innovations. He briefed the developments of HP and the advantages of their products like Remote sensing application, Geo Spatial Application with HP Z workstations etc., He also highlighted the compatibility for professional graphics from AMD and NVIDIA. He added that HP workstations are widely used by almost all automobile giants like Ford, Nissan, Hyundai etc., Hewlett Packard (HP) empowers students especially in education (like e-campus etc). He explained the lure features about the esteemed HP computers that provide the real-time, top visual fidelity of remote workstation access with HP RGS standards. He highlighted the high end technical products of HP like Moon Shot printer’s efficiency, Latest Launch Workstations, Notebooks etc.,

The program ended with Question and Answers section.

Dr.Nalini Joseph, Dean CSE proposed Vote of Thanks and Mr. Arumugham organized the Logistics support for organizing this event.



In photo, Dr.R.HariPrakash, Dean AMACE and Student Branch Counselor, IEEE Student Chapter, Mr.Kaushik Shaw Marketing Development Manager, Hewlett Packard, Dr.M.R.Mohan, Principal & Dr Nalini Joseph, Dean CSE .

Report by: Dr.R.HariPrakash, Student Branch Counselor, IEEE- AMACE.



Words of Wisdom

*Renew, release, let go. Yesterday's gone.
There's nothing you can do to bring it back.
You can't 'should've' done something.
You can only DO something. Renew yourself.
Release that attachment. Today is a new day!"*

- Steve Maraboli

IEEE Kerala Section

Technical Talk on Key Issues and Challenges in Smart Grid Implementation

IEEE Kerala Section in association with CDAC Trivandrum organized a Technical Talk on Key Issues and Challenges in Smart Grid Implementation by **Dr. S N Singh**, Professor, IIT Kanpur and Chairman, IEEE UP Section at Amphitheatre, C-DAC, Thiruvananthapuram on 17 November 2014.

The talk elaborated on the issues and challenges in the power system complexity due to the increased interconnections and loading of the network. “Innovative Smart grid initiatives provide remedial measures to these problems by computational intelligence, automation, advanced measurements, and application of information and communication technology (ICT)” says Dr. S N Singh.



Inauguration of Engineering in Medicine and Biology Society Chapter

The EMBS Chapter of Kerala Section was inaugurated on the 6th of November, 2014 by Dr. B. Ekbal, Neurosurgeon and Former Vice Chancellor, University of Kerala. The inaugural ceremony was attended by Doctors, Engineers and other professionals working in the bio medical domain. Mr. C V Muraleedharan, Associate Head, BMT Division, Sree Chitra Tirunal Institute of Medical Science and Technology delivered the Keynote address.



Forthcoming Events

- WIE Affinity Group of IEEE Kerala Section in association with the IEEE Malabar subsection shall organize WIE Malabar subsection meet and WIE 20th Anniversary Celebration on 29th and 30th November 2014
- IEEE Kerala LINK CAMP shall be held during December 20 – 22 at KMCT College of Engineering, Calicut.
- Inauguration of SPS Chapter on 17th December by Dr K S Dasgupta, Director IIST Trivandrum.
- Inauguration of Consultants Networks Affinity Group.
- Inauguration of Life Member Affinity Group.



Bluetooth 4.0

Low Energy Wireless Technology

We know that *Bluetooth* is a short-range wireless communications technology, which is very simple, secure, and commonly available everywhere. A lot of *Bluetooth* enabled devices ranging from mobile phones to home entertainment products are available and connections between these devices allow them to communicate wirelessly. The ability of *Bluetooth* technology to handle data and voice simultaneously leads to the introduction of several innovative products.

But in spite of all these advantages, it is doubtful whether people really love this technology. Their main problem is the pairing difficulty that exists among *Bluetooth* devices. Constant pairing and re-pairing of connected devices is really a challenge. Another problem is the huge power consumption. This is especially true for simple devices such as a *Bluetooth* headset or a *Bluetooth* mouse.

In order to overcome these difficulties, new specification using improved technology has been introduced. This specification is called *Bluetooth 4.0* or *Bluetooth Smart*, which includes low energy features enabling to bring out new *Bluetooth Smart* devices. These *Smart* devices are capable of keeping paired for a longer period using less power and find applications in the field of sports, health care, security, automobile and home entertainment.

Bluetooth Smart devices are more intelligent especially when it comes to conserving energy. When two *Bluetooth Smart* devices are paired, data will be shared only when it is actually required and put the connection in to sleep mode during inactive period. This is the reason for low battery consumption. It is estimated that up to 2 years of battery life is possible for *Bluetooth Smart* devices.

Under *Bluetooth 4.0* specification, there are two groups of devices – *Bluetooth Smart* and *Bluetooth Smart Ready* devices. Devices like Smartphones, notebooks, tablets, TVs and game consoles that can receive and share *Bluetooth* signals from accessories such as speakers, headphones, fitness accessories, heart-rate monitors, electronic thermometers etc., are called *Bluetooth Smart Ready* devices. These devices are always ready to send and receive data from any *Bluetooth* device. That means *Bluetooth Smart Ready* devices can communicate with both *Bluetooth Smart* devices and old generation (Classic) *Bluetooth* devices. But *Bluetooth Smart* devices that use *Bluetooth 4.0* specification can communicate only with *Bluetooth Smart Ready* devices. *Bluetooth Smart* devices are intended for receiving specific type information and send it to a *Bluetooth Smart Ready* device. Such devices include heart rate monitors, blood glucose

meters, *Smart* watches and security gadgets.

Bluetooth Core Specification Version 4.0 including low energy technology has been released in July 2010 and development of new *Bluetooth Smart* and *Smart Ready* products based on this specification has been initiated. Apple, Microsoft, Motorola and Samsung have successfully introduced *Bluetooth Smart* devices in 2012.

Many *Bluetooth Smart* devices will be released this year, including wireless 3D glasses, home entertainment remote controls, and medical devices. Google announced Android support to *Bluetooth Smart* devices and it will come through by this year end. The *Bluetooth* Special Interest Group (SIG) will have plan to expand *Bluetooth* into ovens, refrigerators, thermostats, and lighting systems. If that happens, a lot of interesting and useful applications using mobile phone will come out making our daily life more comfortable.

[T S Ajayghosh, Centre for Development of Advanced Computing, Trivandrum]



2015 MGA Committee Rosters – as of 22 November 2014

** Click on a Committee name to be directed to that Roster. **

[IEEE Admission and Advancement Committee](#)
[MGA Awards and Recognition Committee](#)
[IEEE Center for Leadership Excellence Committee](#)
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IEEE Admission and Advancement Committee

Position	Name	Years Served
Chair	Forrest (Don) Wright (R3) - Lexington, KY, USA	2014-15 Chair 2011-2013 R3 Member
Region 1	Sandy Mazzola (R1) - West Sayville, NY, USA	2014-2015
Region 2	Leo Mayoral (R2) - Center Valley, PA, USA	2015
Region 3	Sean Haynes (R3) - Charlottesville, VA, USA	2014-2015
Region 4	Jim Riess (R4) - Anoka, MN, USA	2013-2015
Region 5	Steve Watkins (R5) - Rolla, MO, USA	2014-2015
Region 6	Randy Britto (R6) - Sierra Vista, AZ, USA	2014-2015
Region 7	Sreeraman Rajan (R7) - Kanata, ON, Canada	2015
Region 8	Dirk Van Hertem (R8) - Heverlee, Belgium	2014-2015
Region 9	Ruben Barrera-Michel (R9) - Zapopan, JAL, Mexico	2014-2015
Region 10	Anthony Lobo (R10) - Mumbai, Maharashtra, India	2015

MGA Awards and Recognition Committee

Position	Name	Years Served
Chair	John Johnson (R4) - Moline, IL, USA	2015 Chair 2014 Member
Past Chair	Adam Skorek (R7) - Trois-Rivières, QC, Canada	2015 Past Chair 2013-2014 Chair
Member R1-6; Young Prof	Aisha Yousuf (R1) - Niskayuna, NY, USA	2014-2015
Member R1-6	Tim Worboys (R6) - Sunnyvale, CA, USA	2015
Member R1-6; DE	Katherine Duncan (R2) - Newark, DE, USA	2015
Member R7-10; RD	Tania Quiel (R9) - Panama, Panama	2015
Member R7-10; DE	Kukjin Chun (R10) - Seoul, South Korea	2015
Member R7-10	Arjun Pillai (R10) - Thiruvalla, Kerala, India	2015

IEEE Center for Leadership Excellence Committee

Position	Name	Years Served
Chair	Loretta Arellano (R6) - Sun Valley, CA, USA	2015
Member	Diane Collier (R5) - Arlington, TX, USA	2014-2015
Member	Kimball Williams (R4) - Dearborn, MI, USA	2014-2015
Member	Eva Lang (R8) - Passau, Germany	2015
Member	Eduardo Palacio (R1) - Saint James, NY, USA	2015
Member	Eleanor Baum (R1) - Great Neck, NY, USA	2015
Member	TBD	2015
Member	TBD	2015
Member	TBD	2015
Member	TBD	2015
Member	TBD	2015

MGA Finance Committee

Position	Name	Years Served
Chair	Dane Watson (R5) - Plano, TX, USA	2015
Past Chair	Don Bramlett (R4) - Livonia, MI, USA	2015 Past Chair 2013-2014 Chair
Current Region Director	Vince Socci (R1) - Endicott, NY, USA	2014-2015
Current Region Director	Amir Aghdam (R7) - Montreal, QC, Canada	2015
Secretary	Cecelia Jankowski (Staff) - Piscataway, NJ, USA	

MGA Geographic Unit Operations Support Committee

Position	Name	Years Served
Chair	Martin Bastiaans (R8) - Mierlo, Netherlands	2015 Chair
Past Chair	Murty Polavarapu (R2) - Manassas, VA, USA	2015 Past Chair 2014 Chair
Transnational Representative	Pilar Molina Guado (R8) - Zaragoza, Spain	2014-2015
Section Representative	Ali Abedi (R1) - Orono, ME, USA	2014-2015
Affinity Group Representative	Jill Gostin (R3) - Smyrna, GA, USA	2015
Student Representative	Andreas Koltes (R8) - Uberlingen, Baden-Wuerttemberg, Germany	2015
Region Representative	Karen Pedersen (R4) - Cedar Falls, IA, USA	2015
Technical Chapter Representative	Norliza Mohd Noor (R10) - Sentul, Kuala Lumpur, Malaysia	2015
Society Representative (TA)	TBD – TA Appointment	
Technical Chapter Representative (TA)	TBD – TA Appointment	

MGA ieee.tv Advisory Committee

Position	Name	Years Served
Chair	Urmet Janes (R8) - Tallinn, Estonia	2014-2015 Chair 2011-2013 Member
Member-At-Large	Vijay Paul (R10) - Kochi, Kerala, India	2015
Member-At-Large	Ralph Hogan (R6) - Tempe, AZ, USA	2015
Member-At-Large	Rui Costa (R8) - Fontanelas - Sintra, Portugal	2015
Non-IEEE Member, Voting	TBD	

MGA IT Coordination and Oversight Committee

Position	Name	Years Served
Chair	Francisco Martinez (R9) - Guadalajara, JAL, Mexico	2015 Chair 2014 Member
Past Chair	S. Gopakumar (R10) - Trivandrum, India	2015 Past Chair 2014 Chair
Member	Lakshmi Narasimhan (R10) - Kancheepuram, Tamil Nadu, India	2014-2015
Member	Stefano Zanero (R8) - Milano, Italy	2014-2015
Member	Michael Lamoureux (R7) - Halifax, NS, Canada	2015
Member	Daria Burminova (R8) - Milano, Italy	2015
vTools Chair	Wole Akpose (R6) - Portland, OR, USA	2015

IEEE Life Members Committee

Position	Name	Years Served
Chair	Jose Cruz (R10) - Silang, Cavite, Philippines	2014-2015 Chair 2012-2013 Member
Past Chair	Lou Luceri (R1) - Lindenhurst, NY, USA	2014-2015 Past Chair 2012-2013 Chair
Member	V Prasad Kodali (R10) - Hyderabad, India	2013-2015
Member	Roland Saam (R8) - London, United Kingdom	2015
Member	Kurt Richter (R8) - Graz, Austria	2015
Member	Juan Miguez (R9) - Montevideo, Uruguay	2015
Member	N. Thankappan Nair (R10) - Trivandrum, Kerala, India	2015
Member	Charles Husbands (R3) - Port Orange, FL, USA	2015
Foundation Appointment	Lyle Feisel (R2) - Chestertown, MD, USA	2015

MGA Member Benefits Portfolio Advisory Committee

Position	Name	Years Served
Chair	James Look (R5) - Boulder, CO, USA	2014-2015 2014-2015 Past Chair
Past Chair	Joe Lillie (R5) - Lafayette, LA, USA	2012-2013 Chair 2011 Member
Member	Eduardo Palacio (R1) - Saint James, NY, USA	2014-2015
Member	Michael Ong (R10) - Singapore, Singapore	2014-2015
Member	Dave Kemp (R7) - Winnipeg, MB, Canada	2014-2015
Member	Dirk Van Hertem (R8) - Heverlee, Belgium	2014-2015
Member	Arjun Pillai (R10) - Thiruvalla, Kerala, India	2015
Member	Scott Tamashiro (R6) - Cerritos, CA, USA	2015
Member	Mario Aleman (R9) - Leon, Nicaragua	2015

MGA Member Engagement and Life Cycle Committee

Position	Name	Years Served
Chair	Ron Jensen (R4) - Rochester, MN, USA	2014-2015
Past Chair	Babak Beheshti (R1) - Bethpage, NY, USA	2014-2015 Past Chair 2012-2013 Chair
A&A Chair or Designee MGA	Forrest (Don) Wright (R3) - Lexington, KY, USA	2014-2015
Life Members Chair or Designee MGA	Jose Cruz (R10) - Silang, Cavite, Philippines	2014-2015
SAC Chair or Designee MGA	Pablo Herrero (R8) - Neubiberg, Bayern, Germany	2015

WIE Chair or Designee MGA	Takako Hashimoto (R10) - Chiba, Japan	2015
Young Prof Chair or Designee MGA	Mario Milicevic (R7) - Richmond Hill, ON, Canada	2015
Awards and Recognition Chair MGA	John Johnson (R4) - Moline, IL, USA	2015
Society Representative TA	TBD – TA Appointment	
Educational Activities Representative EA	TBD – EA Appointment	

MGA Membership Recruitment and Recovery Committee

Position	Name	Years Served
Chair	Antonio Luque (R8) - Sevilla, Spain	2015
Past Chair	Ed Perkins (R6) - Tualatin, OR, USA	2015 Past Chair 2013-2014 Chair
TA Rep (voting)	TBD – TA Appointment	
TA Rep (voting)	TBD – TA Appointment	
Region MD Coordinators – TBD		

MGA Nominations and Appointments Committee

* N&A Committee members serve a two year term

Position	Name	Years Served
Chair	Ralph Ford (R2) - Erie, PA, USA	2015
Member R1-6	John Vig (R1) - Colts Neck, NJ, USA	2014-2015
Member R1-6	Marc Apter (R2) - Alexandria, VA, USA	2014-2015
Member R1-6	Bill Ratcliff (R3) - Savannah, GA, USA	2014-2015
Member R1-6	Joe Lillie (R5) - Lafayette, LA, USA	2015 Member 2014 Chair
Member R7-10 (Young Prof)	Eva Lang (R8) - Passau, Germany	2015-2016
Member R7-10	Marko Delimar (R8) - Zagreb, Croatia	2015-2016
Member R7-10	Janina Mazierska (R10) - Townsville, QLD, Australia	2015-2016

MGA Operations Committee

Position	Name	Years Served
MGA Chair	Wai-Choong (Lawrence) Wong (R10) – Singapore, Singapore	2015 Chair
Past Chair	Ralph Ford (R2) - Erie, PA, USA	2015 Past Chair 2013-2014 Chair

VC-Geographic Unit Operations	Martin Bastiaans (R8) - Mierlo, Netherlands	2015 VC-GUO 2013-2014 R8 Director
VC-Information Management	Francisco Martinez (R9) - Guadalajara, JAL, Mexico	2015
VC-Member Development	Ron Jensen (R4) - Rochester, MN, USA	2014-2015
VC-Strategic Mgmt & Analysis	Toshio Fukuda (R10) - Nagoya, Japan	2015
MGA Treasurer	Dane Watson (R5) - Plano, TX, USA	2015
Past MGA Treasurer	Don Bramlett (R4) - 2015 Past Chair; 2013-2014 Chair	2015 Past Chair 2013-2014 Chair
Region Director R1-6	Bob Parro (R4) - Rockford, IL, USA	2015
Region Director R7-10	Norberto Lerendegui (R9) - Buenos Aires, Argentina	2015
Secretary	Cecelia Jankowski (Staff) - Piscataway, NJ, USA	

MGA Potentials Editorial Board

* Associate Editors serve a three year term

Position	Name	Years Served
Potentials Editor	David Tian (R2) - Cleveland, OH, USA	2014-2015 Editor in Chief 2011-2013 Associate Editor 2009-2010 Student Editor
Associate Editor	Lyle Feisel (R2) - Chestertown, MD, USA	2015-2017
Associate Editor	Athanasios Kakarountas (R8) - Patras, Greece	2015-2017
Associate Editor	Elizabeth Johnston (R6) - Fairbanks, AK, USA	2014-2016 Assoc Editor 2011-2013 Editor in Chief 2009-2010 Assoc Editor 2006-2008 Student Editor
Associate Editor	Vaughan Clarkson (R10) - Queensland, Australia	2014-2016
Associate Editor	Sachin Seth (R5) - Dallas, TX, USA	2013-2015
Associate Editor	Kim Tracy (R4) - Naperville, IL, USA	2013-2015; 2010-2012; 2006-2008
Student Editor	Davis George Moye (R3) - Tallahassee, FL, USA	2015
Student Activities Committee Chair	Pablo Herrero (R8) - Neubiberg, Bayern, Germany	2015

MGA Strategic Direction and Environmental Assessment Committee

Position	Name	Years Served
Chair	Toshio Fukuda (R10) - Nagoya, Japan	2015
Past Chair	Lawrence Wong (R10) - Singapore, Singapore	2015 Past Chair 2013-2014 Chair
Member	Maike Luiken (R7) - Sarnia, ON, Canada	2014-2015
Member	Deepak Mathur (R10) - Ahmedabad, Gujarat, India	2014-2015
Member	Toshitaka Tsuda (R10) - Tokyo, Japan	2015

Member	Costas Stasopoulos (R8) - Nicosia, Cyprus	2015
Member	Sreeraman Rajan (R7) - Kanata, ON, Canada	2015
Member	TBD - TA	
Secretary	Cecelia Jankowski (Staff) - Piscataway, NJ, USA	

MGA Student Activities Committee

Position	Name	Years Served
Chair	Pablo Herrero (R8) - Neubiberg, Bayern, Germany	2015
Past Chair	John Paserba (R2) - Warrendale, PA, USA	2015 Past Chair 2013-2014 Chair Industrial Rep
Branch Chapter Representative	Enrique Tejera (R9) - Panama, Panama	2014-2015
Member	Ruben Barrera-Michel (R9) - Zapopan, JAL, Mexico	2015
Member	Basak Yuksel (R8) - Kartal, Istanbul, Turkey	2015
Member	Simay Akar (R8) - Istanbul, Istanbul, Turkey	2015
IEEE Potentials Editor	David Tian (R2) - Pittsburgh, PA, USA	2014-2015
IEEE Potentials Student Editor	Davis George Moye (R3) - Tallahassee, FL, USA	2015
Young Prof Committee Representative	TBD	
TAB Representative	TBD – TA appointment	
IEEE-USA SPAC Committee Chair	TBD – IEEE-USA appointment	
Industrial Representatives	TBD	
Regional Student Activities Committee (RSAC) Chairs TBD		
Regional Student Representatives (RSR) TBD		

MGA vTools Committee

Position	Name	Years Served
Chair	Wole Akpose (R6) - Portland, OR, USA	2015
Past Chair	John Prohovsky (R6) - Salem, OR, USA	2015 Past Chair 2013-2014 Chair 2012 Member
Member	Hidenori Nakazato (R10) - Shinjuku-ku, Tokyo, Japan	2014-2015
Member	Adriaan van Wijngaarden (R1) - New Providence, NJ, USA	2014-2015
Member	Michael Fallenstein (R4) - Rochester, MN, USA	2015
Member	Ademola Peter Adejokun (R5) - Arlington, TX, USA	2015
Member	Gowtham Prasad (R10) - Bangalore, Karnataka, India	2015

IEEE Women in Engineering Committee

Position	Name	Years Served
Chair	Takako Hashimoto (R10) - Chiba, Japan	2015 Chair 2014 Member
Past Chair	Nita Patel (R1) - Bedford, NH, USA	2015 Past Chair 2013-2014 Chair
Member	Jennifer Ng-Ain-Kin (R7) - Nepean, ON, Canada	2015-2017
Member	Joyce Mwangama (R8) - Cape Town, Western Cape, South Africa	2015-2017
Member	Bozenna Pasik-Duncan (R5) - Lawrence, KS, USA	2014-2016
Member (Young Professional)	Nury Ramirez Cely (R9) - Guadalajara, JAL, Mexico	2013-2015
WIE Affinity Group of the Year Award	Clarissa Loureiro (R9) - Campinas, Sao Paulo, Brazil	2015
WIE Student Branch of the Year Award	Sareh Fotuhi Piraghaj (R10) - Melbourne, VIC, Australia	July 2014 - June 2015
TA Representative	TBD – TA Appointment	

IEEE Young Professionals Committee (GOLD)

Position	Name	Years Served
Chair	Mario Milicevic (R7) - Richmond Hill, ON, Canada	2015 Chair 2014 Member
Past Chair	Timothy Wong (R10) - Waterford, WA, Australia	2015 Past Chair 2013-2014 Chair 2011-2012 R10
Member MGA - R1-6	Elie Rosen (R1) - Piscataway, NJ, USA	2015
Member MGA - R7-10	Rafal Sliz (R8) - Oulu, Oulun, Finland	2015 Member 2013-2014 R8
Member MGA - RD or DE	Francis Grosz (R5) - Pearl River, LA, USA	2015
Member TA	TBD – TA Appointment	
Member TA	TBD – TA Appointment	
Member TA	TBD – TA Appointment	
Regions 1-10 Young Professionals Coordinators TBD		



3D Printing Goes to Space

Zero-gravity Not a Deterrent

3D printing will unleash the next industrial revolution, it is predicted. And it is not going to be confined to Earth - it is poised to invade the outer space also.

Made in Space, a space manufacturing company from California, has now partnered with NASA's Marshall Space Flight Center to launch the first 3D printer into the International Space Station (ISS) in 2014 as part of demonstration to show the potential of the technology. It is based on the standard principle of *extrusion additive manufacturing* that creates objects by adding layers of polymers, ceramics, metals or other materials.

All space missions today are completely dependent on Earth and the launch vehicles that send equipment to space. The greater the distance from Earth and the longer the duration, the more difficult it will be to carry materials to space.

"Imagine an astronaut needing to make a life-or-death repair on the ISS," said Aaron Kemmer, CEO of Made in Space. "Rather than hoping that the necessary parts and tools are on the station already, what if the parts could be 3D printed when they needed them?" Made in

Space's customized 3D printer will be the first device to manufacture parts away from planet Earth. The 3D Printing in Zero-G Experiment will validate the capability of *additive manufacturing* - the principle behind 3D printing- in zero-gravity.

Aaron Kemmer, CEO of Made in Space, says. "The ability to 3D print parts and tools on demand greatly increases the reliability and safety of space missions while also dropping the cost by orders of magnitude. The first printers will start by building test items, such as computer component boards, and will then build a broad range of parts, such as tools and science equipment."

3D Printer is currently undergoing certification and is scheduled to be shipped to the ISS on a US commercial resupply mission next year. The technology demonstration is aimed at confirming tests carried out on a series of *parabolic flights* (See Box item) in 2011 under NASA's

Flight Opportunities Program, which used aerodynamic maneuver to briefly produce conditions of zero gravity inside a cargo plane.

"As NASA ventures further into space, whether redirecting an a steroid or sending humans to Mars, we'll need transformative technology to reduce cargo weight and volume," NASA Administrator Charles Bolden said "In the future, perhaps astronauts will be able to print the

tools or components they need while in space." The Made in Space and NASA team envision a future where space missions can be virtually self-sufficient and manufacture most of what they need in space, say, things such as consumables, common tools, and replacements for lost or broken parts and eventually even such things as CubeSats (small, deployable satellites).

Both Made in Space and NASA view the space station as the place to initiate the journey of *in-space manufacturing*.

"Taking advantage of our orbiting national laboratory, we'll be able to test new manufacturing techniques that benefit our astronauts and America's technology development pipeline" says Michael Gazarik, NASA's associate administrator for space technology in Washington.

The hardware is scheduled to be certified and ready for launch in 2014 to the International Space Station, a fully operating National Laboratory where commercial, international, and academic partnerships take place. In preparation for the 2014 launch, Made in Space tested a diverse array of 3D printing technologies in zero-gravity in 2011 and is conducting further tests.

"The public has been hearing about what this 3D printing technology can do, but most people haven't seen a genuine impact on their lives yet," said Kemmer. "Space is one of the key places where humanity will see the first impact of this incredible technology."

[For details: <http://www.madeinspace.us>, <http://www.msfc.nasa.gov>, www.esa.int]





INDICON 2014

Emerging trends and innovation in Technology

11th-13th December 2014, Yashada, Pune, India



IEEE INDICON 2014 organized by IEEE Pune Section will be held at YASHADA, MDC, Pune, Maharashtra, India from December 11-13, 2014.

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The paper submission deadline is June 25, 2014.

For Call for papers, please visit <http://www.indicon2014.in/CFP.pdf>.

For more details and contact information, please visit <http://www.indicon2014.in>

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Chair, IEEE Pune Section
General Chair INDICON 2014
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Artificial Adhesive Inspiration from Lizards

The capability to stick objects to a wide range of surfaces, upside down or vertical, and made of wood, metal or glass with a single adhesive has been the elusive goal of many research teams across the world.

Now, a team of researchers, from Stanford University in California, led by engineer [Mark Cutkosky](#), has applied biomimicry concepts learned from geckos or small lizards, who effortlessly climb up any vertical surface, to the envy of humans. Of course, geckos have one major advantage over humans: their bodies are small and light, so their natural adhesive just has to be good, not great.

Gecko toes are incredibly sticky because they are covered with groups of long, thin spatula-shaped structures called setae that increase surface area and amplify weak electrical attractions between the toes and a surface.

Geckos run up walls and scurry across ceilings with the help of tiny rows of hairs, in thousands, on their feet. The hairs, known as setae, generate a multitude of weak attractions between molecules on the two surfaces that add up to a secure foothold. Moreover, making and breaking the bonds that hold individual setae to a surface is easy.

The Stanford researchers have created hand-grippable pads with geckolike adhesion capabilities using silicone, plastics, carbon nanotubes, and other materials, which are stronger than gecko toes, as their synthetic adhesive retains its strength over a larger surface area

The researchers also hope to use the adhesives in manufacturing equipment, making grippers for manipulating huge solar panels, displays, and other objects without the need for suction power or chemical glues. The team is now working with NASA's Jet Propulsion Laboratory to create adhesive-equipped robots that can catch space junk such as defunct satellites.

On the commercialization side, Jeffrey Karp, a bioengineer at Brigham and Women's Hospital in Boston, has cofounded a company to commercialize a bio-inspired surgical adhesive. Karp says the Stanford researchers will need to show that their system works in less ideal environments. In real world, a climbing system is liable to be exposed to humidity, rain, pollen, dust, and other contaminants, he notes.

The Stanford group hopes to test the adhesive in especially extreme conditions, as they have done in a zero-gravity airplane with NASA and found that it still worked.



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