



**IEEE**  
HYDERABAD SECTION

**SYNAPSE**  
The Newsletter of IEEE Hyderabad Section

May 2016

[www.ieeehyd.org](http://www.ieeehyd.org)

Special Conference Edition

Editor-in-Chief: Mr. Kannan Rajagopalan

Editor: Dr. Mohammed Arifuddin Sohel

### **Message from Dr. Lakshminarayana Merugu, Chair, IEEE Hyderabad Section**

Dear Esteemed Members,

At the outset, on behalf of slate-2016 Executive Committee, I extend "Seasons Greetings and Best Wishes" to all members of IEEE Hyderabad Section. The good efforts of our outgoing Editor-in-Chief Laxminarayana Karre, incoming Editor-in-Chief Kannan Rajagopalan, and Editor Dr. Mohammed Arifuddin Sohel have resulted in releasing this special conference issue of our section newsletter "Synapse" as Edition III, second volume. The first volume covered regular features and activities of the Section and was released in January 2016. As the Section organized two international conferences, and technically co-sponsored three international conferences with IEEE and its societies, this special conference edition aptly covers details on these conferences.

IEEE PES/PELS/IAS joint chapter of IEEE Hyderabad Section organized the "2015 IEEE IAS Joint Industrial and Commercial Power Systems Petroleum and Chemical Industry Conference" (ICSPCIC 2015) at HICC Kondapur, Hyderabad from 19 to 21 Nov 2015. The objective of the conference was to help to provide productive, reliable, safe, and economical industrial electrical systems.

IEEE CAS/EDS Chapter, Hyderabad Section has organized PrimeAsia 2015 during 27-29 November 2015, at Vasavi College of Engineering, Hyderabad. This IEEE Asia-Pacific Conference focuses on Post-graduate Research in Microelectronics & Electronics and mainly targeted at Master's and Doctorate students carrying out research in frontier areas of microelectronics and electronics.

G. Pulla Reddy Engineering College, Kurnool organized "2015 Conference on Power, Control, Communication and Computational Technologies for Sustainable Growth (PCCCTSG)" with IEEE Hyderabad Section as Technical co-sponsor at Kurnool on Dec 11-12, 2015.

Computational Intelligence Society (CIS) Chapter of IEEE Hyderabad Section technically co-sponsored "2015 Fuzzy and Neural Computing Conference" (FANCCO 2015), held at Hyderabad during 16 -19 December 2015.

IEEE Hyderabad Section technically cosponsored IEEE MTT-S International Microwave and RF Conference (IMaRC2015) at Novotel Hotel, Airport, Hyderabad during 10-12 December 2015. The Conference was hosted by the IEEE Microwave Theory and Techniques Society (IEEE MTT-S), USA.

Special thanks are due to general co-chairs of all conferences for choosing Hyderabad as the venue. We have had a galaxy of eminent scholars, fellows of IEEE who delivered many tutorials and keynote addresses on futuristic trend setting topics. Given the high quality of papers that have been accepted and presented, the need of the hour is to have more opportunities for research scholars and practicing professionals to exchange their ideas. I thank all committees, conference organizers, industry, faculty members, staff and managements of the many academic institutions and the student volunteers who have worked very hard to make these conferences a grand success.

With warm regards and best wishes  
Merugu Lakshminarayana

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## International Conferences Organized / Technical Co-Sponsored by IEEE Hyderabad Section

### Report on ICSPCIC 2015

The joint chapter of IEEE PES/PELS/IAS of IEEE Hyderabad Section organized the "2015 IEEE IAS Joint Industrial and Commercial Power Systems Petroleum and Chemical Industry Conference" (ICSPCIC 2015) at HICC Kondapur, Hyderabad from 19 to 21 Nov 2015. The conference program included four tutorial sessions, three invited talks and 39 paper presentations. The total number of attendees was 85 for tutorials and 120 for conference. 80% attendees to conference were from industry, 90% tutorials attendees were from industry and 40% papers are from industry. This is rare for IEEE conferences in India. An exhibition was arranged on 20-21 Nov 2015 with about 17 stalls. All the invitees from abroad expressed high satisfaction at the quality of the presentations, organization and hospitality. There was good interaction between authors / speakers and attendees.



John Nelson, IEEE Past Chair IAS PCIC



Sang B Lee, DL from Korea, C. Sateesh, General Chair, Daleep C Mohla, FIEEE and others during the conference.

## Report on PCCCTSG 2015 Conference of GPR Engineering College, Kurnool

G. Pulla Reddy Engineering College, Kurnool organized "2015 Conference on Power, Control, Communication and Computational Technologies for Sustainable Growth (PCCCTSG)" with IEEE Hyderabad Section as Technical co-sponsor at Kurnool on Dec 11-12, 2015.

Out of 116 accepted papers, only 73 papers were presented by authors in four different tracks during two days. Three keynote talks were delivered during the conference. On the first day of the conference the first keynote address on "**Power Electronics - Challenges and Trends**" was given by Prof. M.H Rashid, Professor & Fellow IEEE, University of West Florida, USA. Another keynote address on "**Technology Advances, Applications and Trends of Power Electronics and Motor Drives**" was delivered by Prof. Bimal K. Bose, IEEE Life Fellow, Emeritus Professor, University of Tennessee, Knoxville, USA. A Parallel Keynote address was given on "**Innovative Solutions in Cloud Computing for Big data Applications**" by Prof. Raj Kumar Buyya, Director, Cloud Computing and Distributed Systems (CLOUDS) Lab, The University of Melbourne, Australia. Four tutorial sessions were also held during the conference. Prof. M. H. Rashid Best paper awards were given for the best paper presentations selected by the session chairs in each track, which is initiated by Prof. M H Rashid.



Prof. Mohammed H. Rasheed Presenting the best paper award to a delegate



Prof Bimal K Bose, Life FIEEE, USA giving keynote talk on Power Electronics

## IEEE PrimeAsia 2015 – International Conference organized by Joint Chapter IEEE CAS/EDS, Hyderabad Section

PRIMEASIA is a sister conference of PRIME (EUROPE) that is technically sponsored by IEEE Circuits and Systems Society and held every year in countries of Asia-Pacific. IEEE CAS/EDS Chapter, Hyderabad Section has organized this year's conference, PrimeAsia 2015 during 27-29 November 2015, at Vasavi College of Engineering, Hyderabad.

In this year's PRIMEASIA a total of 126 papers were submitted by authors from India, Australia, China and Japan. These were peer reviewed and finally 29 papers were selected for presentation at the conference. The acceptance ratio is 23%. Papers submitted to the conference are from diverse areas such as Digital Design, Analog and Mixed Signal Design, VLSI Process Technology, Nano-Technology, VLSI Routing, DSP Building Blocks, Video Coding and Power Electronics.

The pre-conference tutorials held on 27<sup>th</sup> November 2015 were a huge attraction with over 150 registrations. It comprised of four half day sessions by Dr. Sudeb Dasgupta from IIR Roorkee, Mr. A.G. Krishnakanth and team from Austria Microsystems, Hyderabad, Mr. Saravanan S. and Diyanesh B. from IBM, Bangalore, and Mr. Prasath S. from AMS India Pvt. Ltd. The topics covered during tutorials included CMOS Temperature Sensors; FinFET based Analog Circuits, Memory Subsystem Architecture, and Semiconductor ATE role in testing Integrated Circuits.



Clockwise: Tutorial Speakers with Prof. K Subbarangiah, Tutorial Co Chair, Dr. RavinderDahiya, Plenary Speaker, A section of audience

The conference was inaugurated by Dr. Pramod Kumar Meher, NTU, Singapore, Chief Guest. Dr. Ravinder Dahiya, Glasgow University, Guest of Honour, released the conference proceedings and CD on 28<sup>th</sup> November 2015. The plenary talk by Dr. Pramod Meher, on Connected Component Timing Model for Efficient Pipelining of Digital Circuits and by Dr. Ravinder Dahiya on Electronic Skin to help Robots Feel were the hallmark of this conference. Gold, Silver and Bronze leaf certificates to the authors of best papers were presented during the Banquet Dinner on the first day held at the Historic site of Taramati Baradari.

The second day witnessed a keynote talks on "Research in Avionics for Defence Applications" by B. H. V. S. Narayana Murthy, Outstanding Scientist, RCI, DRDO. The topic "Technology – Safe Society" was delivered by Mr. Rajesh Kumar, IPS. The second day was concluded by valedictory session in which Dr. P.A. Govindacharyulu, General Chair, PrimeAsia 2015 thanked the organizing committee and volunteers for their untiring efforts towards making the conference a very successful one. The conference was sponsored by Vasavi College of Engineering who offered Venue and F&B. Others sponsors were ECIL, RCI, ams semiconductors india pvt. Ltd.



Clockwise: Release of conference proceedings during inaugural session. Award of best paper to one of the participants by Dr. P.A. Govindacharyulu, General Chair and Dr. P.V. Ananda Mohan, TPC Chair, during banquet dinner.

## 5th International Conference on Fuzzy and Neural Computing (FANCCO 2015)

Computational Intelligence Society (CIS) Chapter of IEEE Hyderabad Section was a technical co-sponsor for FANCCO 2015, The conference was held from 16<sup>th</sup> to 19<sup>th</sup> December 2015. Prof. Atul Negi, UOH, Chair CIS chapter and Dr. M. Naresh Kumar, NRSC, Secretary CIS chapter were members of technical Program Committee. Out of 67 papers submitted to the conference, 25 papers were selected for presentation.

A pre-conference tutorial was organized on 16<sup>th</sup> December 2015. In the morning session, Prof. Yagnanarayana, IIIT Hyderabad delivered a talk on "Evolution of architectures of ANN from learning to deep learning". The speaker beautifully crafted the talk in such a way that audience were given a gist of various learning paradigms right from perception, feed forward, feedback and Boltzmann machine before culminating it with deep learning Neural networks. In the afternoon session Prof. M. Narasimha Murty, IISc., Bangalore has delivered a talk on "Classification based on Support Vector Machines". The talk focused on successful applications of Support Vector machines (SVM) in pattern classification and some examples in social network analysis were used to demonstrate the effectiveness of SVM classifiers.

The Conference was flagged off on December 17, 2015 by Prof. Tadihiko Murata, Kansai University, Japan; Prof. Dipankar Dasgupta, University of Memphis, USA; Dr. Raghuram Krishnapuram, Xerox Innovation Group, India; and Prof. B. K. Panigrahi, Indian Institute of Technology, Delhi. The inaugural was followed by Keynote address titled "Evolutionary Fuzzy Systems- History and Recent Developments" was delivered Prof. Tadihiko Murata, Kansai University, Japan. He presented techniques for minimizing errors and complexity in fuzzy systems using evolutionary computational approaches. The afternoon session Keynote address was delivered by Prof. Deepankar Dasgupta, University of Memphis USA.

The day 2 proceedings were started with the keynote address titled "uncertainty handling using neural networks-based prediction intervals " Prof. Dipti Srinivasan, NUS, Singapore. The speaker has showcased construction of a neural network based on prediction intervals obtained using LUBE method for handling uncertainties and its applications to smart power grids. The afternoon session keynote address titled "A Fuzzy Approach to Big Data Analytics Problems" was delivered by Prof. Raghuram Krishnapuram, Xerox Innovation Group, India. The speaker dwelled upon issues related to the "four v's" in clustering as well as other combinatorial optimization problems such as graph matching.

The final day of the conference started with the keynote address titled "Understanding Global Change: Opportunities and Challenges for Data Driven Research" by Prof. Vipin Kumar, University of Minnesota, USA. The focus of the talk was on how to integrate physics based models into automatic learning based systems for Earth eco-system modeling. The afternoon session started with the keynote address titled "Spiking Neural Networks for On-Line Temporal Stream Data Modelling and Prediction" by Prof. N. Kasabov, Auckland University of Technology, New Zealand. The speaker has given an excellent insight into the spiking neural network architecture and explained how spatio-temporal patterns can be captured by such systems. The entire session was through videoconference mode through skype.



A few glimpses from the conference – FANCCO 2015

## IEEE MTT-S International Microwave and RF Conference (IMaRC-2015)

Organized by IEEE MTT-S , Technical Co-sponsored by IEEE Hyderabad Section

It was a matter of great privilege and pride that the IEEE MTT-S International Microwave and RF Conference (IMaRC2015) was hosted by the vibrant and dynamic IEEE Microwave Theory and Techniques Society (IEEE MTT-S), USA, for the third time in India and for the first time in Hyderabad, during 10 – 12 December 2015. The Conference was supported by the top level associations in Microwave Theory and Techniques with technical co-sponsorship from Institute of Electronics and Telecommunication Engineers (IETE) India and the IEEE Hyderabad Section. The conference was conceived to serve as a platform for the exchange of scientific and technical information, both at academic and industrial levels, and fosters collaboration and cooperation in the Microwave and RF domain both at India and global levels by maintaining high technical standards.

The first IMaRC conference hosted in India, which was held in Delhi, 2013 followed by its progressive event in 2014 in Bangalore. This has been made possible by great efforts and the untiring hard work put up by the volunteer members of various committees of this conference. Keeping in view, increasing role of technology in everyday life, Special Interest Group in Humanitarian Technologies (SIGHT) events was empanelled in the conference technical program. IMaRC2015 technical program featured core technologies for the next generation microwave and RF devices, circuits, and systems by presenting latest achievements in the areas of, but not limited to, Low-Noise/High-Power Amplifier Techniques, RF Building Block Circuits and Components, Signal Generation and Frequency Conversion, Receiver/Transmitter/Transceiver Techniques, Filters, Transmission Lines/Couplers, Microwave/Millimeter-wave/THz Systems, Microwave Semiconductor Device and Modeling, Active Antennas/MIMO Techniques/Phased Arrays, and Numerical Methods and Optimization. The Technical Program Committee received 288 papers including 9 invited from 19 countries (5 continents) worldwide, indicating the vitality of this conference and promise for further future growth. Based on TPC recommendation, 96 regular and invited papers were presented – corresponding to an overall acceptance rate of 33% – scheduled for 18 podium sessions and 3 poster sessions over 2 days covering the complete range of IMaRC technical interests. Adding to this festivities, there were interesting Special Sessions on Microwave Industry in India, Microwave Industry in China, and a Forum on Women in Microwave Engineering. In addition to our technical podium/poster sessions, conference also offered six workshops on GaN Technology, Microwave Filter Design, Design and Development of High Power Microwave Sources, HBT Power amplifiers, Emerging Trends in PA design: Device fabrication, Modeling and Linearization, and RF Testing for Active Devices and Sensors for in-depth discussions on device, circuit, and system aspects of microwave and RF technologies.

IMaRC was inaugurated by NITIE Aayog member and former Scientific Adviser to Raksha Mantri, Dr VK Saraswat on 10<sup>th</sup> Dec 2015. The conference was attended by over 400 delegates from 19 countries for three days. The conference highlighted the engineering advances in microwaves and RF, devices, circuits, antennas, transmitters and receivers that are integral part of futuristic mobile communications electronics, defense and communication electronics, that goes in missile, radars, 5G electronics, high power electromagnetics systems. The conference is organised by the Microwave Theory and Techniques society of Institute of Electrical and Electronics Engineers, a USA based professional organization. The host city Hyderabad, had sizable number of R&D labs, public sectors and industries that were part of organizing this international gathering. Vijay Nair, Chief scientist from Intel Corporation, USA was keynote speaker. The conference was also aimed to give boost to Digital India initiative as well as Make in India Initiative that are trillion dollar business opportunity, resulting in jobs and prosperity. In parallel, the conference also hosted SIGHT, special Interest Group on Humanitarian Technologies, IEEE initiative, trying to highlight role of HAM radio and other technologies in recent Chennai-type flood situations and natural disasters like Kedarnath tragedy. 27 Exhibitors displayed their products. Exhibition has attracted most of the delegates.



From Left: SmritiDagur, President IETE, Lakshminarayana Merugu, General Co-chair, Dr V K Saraswat, Member NITI Ayog, Chief Guest, Vijay Nair, Keynote Speaker, Tim Lee, President MTT-S, Alaa Abunjaileh, General Co-chair



A view of delegates on inaugural session of SIGHT (left); inaugural session of IMArc Conference (right)



A view of the IMArc Organizing Team with Dr V K Saraswat, Chief Guest, and Dr Vijay Nair, Keynote Speaker

# Slate Members 2016

## Section Executive Committee

| Designations  | Name                    | Organisation           | Membership No |
|---------------|-------------------------|------------------------|---------------|
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## Computational Intelligence Society Chapter

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