

### FROM THE SECRETARY'S DESK

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It is my pleasure to bring out the first edition of E-MONITOR, the newsletter of Calcutta Section. The e-newsletter which was in the offing for the past 6 months has ultimately seen the light of the day. In our effort to save paper & thus our environment, we had no other option but to go for e-newsletter. I, however, sincerely apologize for the delay in bringing out the first issue. Once the logistics are put in place, I presume there won't be any delay for future issues. I always feel that this newsletter is an effective medium of communication between Section Execom and the members and all efforts should be made to bring out the issues in time.

This year the executive committee has inducted three new faces, all of them young. Prof. Kalyan K. Mallik has demit the office of the Section Chair and in his place the nomination committee has nominated Prof. Sivaji Chakravorti. The outgoing executive committee has placed on records its appreciation for the honorary services rendered by Prof. Mallik during his two year term.

From this year onward the Calcutta Section has instituted two awards to given annually from amongst the Chapters under the Section. The awards will be given in two categories: firstly Chapter with highest membership growth, secondly Chapter with highest number of members from the industry. The object is to encourage the chapters to recruit new members with emphasis from the industry. We intend to institute more such awards to encourage members' participation in the activities of the IEEE.

I would urge upon the members to send in their comments for improvement both in contents & look without hesitation to the undersigned. We shall work upon further, based on your feedback to make the E-MONITOR more lively and interesting.

Lastly I wish all the members and their family a very happy New Year.

With fraternal greetings,  
Sanjay Kar Chowdhury.

### 2010 AT A GLANCE

- ✓ INDICON-2010 organised jointly with IEEE India Council from 17<sup>th</sup>. To 19<sup>th</sup>. December, 2010 at Jadavpur University Campus.
- ✓ **Mini-colloquium**: EDS Chapter organised a series of 5 mini colloquiums between 29<sup>th</sup>. March to 9<sup>th</sup>. April, 2010 jointly with a) Siliguri Institute of Technology, Siliguri, b) IIT, Guwahati, c) North Eastern Hill University, Shillong, d) NIT, Silchar & e) Heritage Institute of Technology, Kolkata.
- ✓ IAS chapter received 'Outstanding Small Chapter' Award for 2009 from the IEEE IAS headquarters.
- ✓ IAS Chapter organized short term training courses on Power Electronics jointly with Department of Electrical Engineering, BESU.
- ✓ PES Chapter received 'Outstanding Small Chapter' Award for 2009 from IEEE PES headquarters.
- ✓ PES Chapter bagged High Performance Chapter Award (HPCA) for tenth time in a row
- ✓ PES Chapter was the technical sponsor for 'International Conference on Future Power and Energy Engineering' organized by Shenzhen University, China from 26<sup>th</sup>. To 27<sup>th</sup>. June, 2010.
- ✓ PES Chapter organized a one week workshop on 'LabVIEW™ and PIC Microcontroller Applications' from 28<sup>th</sup>. To 3<sup>rd</sup>. July, 2010 at Jadavpur University, Kolkata.
- ✓ Mr. Sankaralingam S, who has made a mark as a volunteer during INDICON-2010 has been nominated for felicitation for advancing the cause of IEEE in Kolkata. He will be awarded a plaque in the 32<sup>nd</sup>. AGM.
- ✓ New Chapter 'Computational Intelligence Society' formed in the last quarter of 2010.
- ✓ APMTT chapter organized 'India Antenna Week' – a week long workshop on Advanced Antenna Technology at Mayfair Resorts, Puri, Odisha from 31<sup>st</sup>. May to 4<sup>th</sup>. June, 2010.
- ✓ Photonics(formerly LEOS) chapter organized 3 Week long Summer School on PhotoSMART from 1<sup>st</sup>. to 18<sup>th</sup>. June, 2010.
- ✓ Computer Chapter organized a 3-day workshop on 'Mobile Computing' jointly with MCKV Institute of Technology & School of Mobile Computing & Communication, Jadavpur University.

- ✓ CAS Chapter organized CASEDCOM-2010 jointly with EDS Chapter & ComSoc Chapter.
- ✓ CAS Chapter organized CASCOM – **Post Graduate Students' Paper Conference**-2010 jointly with ComSoc Chapter.
- ✓ Calcutta Section has registered a membership growth of 7%.
- ✓ Two new student branches opened at Bengal Institute of Technology & Management, Santiniketan and at Calcutta Institute of Engineering & Management, Kolkata.
- ✓ **Students' Tech Fest by NIT Rourkela and ISM Dhanbad Branches.**
- ✓ WIE AG celebrated '**International Womens' Day' on 8<sup>th</sup>**. March, 2010 at Birla Institute of Technological Museum'.
- ✓ **WIE AG organized two day conference on 'Microwave & Communiaction'** jointly with CoMSoc Calcutta at BIET, Suri on 19<sup>th</sup>. & 20<sup>th</sup>. February, 2010.
- ✓ A joint meeting of WIE & GOLD AGs were held on the wings of INDICON-2010 on 17<sup>th</sup>. December, 2010 at J.U. Campus.
- ✓ Annual Social was organized on 7<sup>th</sup>. March, 2010 at Nirala Resort, Deulti

## SECTION DETAILS

**Total Member: 1564 AS ON 31<sup>st</sup> DECEMBER, 2010**

**Total Active Chapters: 09**

**One Chapter – Computational Intelligence Society formed in the current Year**

**Total Affinity Groups: 02**

**Number of Active Student Branches: 18**

**Number of Student Branches Formed in the Year: 02**

**Total Active Student Member: 658**

**Total Active Graduate Student Member: 141**

## MEMBERSHIP DEVELOPMENT ACTIVITY

- This Year Calcutta Section has recognised the efforts made by Mr. Sankaralingam S., a senior member by awarding a personalized plaque. The award will be given away during the AGM.
- In the current year Calcutta Section has instituted two awards as a part of membership development program. The awards will be given in the following category:
  - a) Chapter with highest membership growth &
  - b) Chapter with highest percentage of member from industry.This year the recipient chapters are a) Power & Energy Chapter & b) Computer Society. The current Chapter Chairs will be given the award during the AGM.
- PES Chapter has awarded Mr. Dipankar Sengupta a very senior member from the industry, a personalized plaque recognizing his efforts for growth & sustenance of the chapter.
- PES Chapter has conferred upon Prof. Suparna Kar Chowdhury, one of its active senior members, the **title of 'Outstanding Chapter Engineer' for the year 2010. The award will be given away during 32<sup>nd</sup>. AGM.**
- PES has recommended elevation of two of its members to Senior Member grade. Both the members have been duly elevated.
- IAS Chapter has recommended elevation of one of its members to Senior Members grade. The member has been duly elevated.
- Photonics Chapter has recommended elevation of two of its members to Senior Member grade. Both the members have been duly elevated.
- PES has reported 33% whereas Photonics chapter has reported about 8% rise in membership in the year 2010.
- **Evidence of retention of members:** Each default member is contacted through email / mobile phone and persuaded to renew his / her membership. Attrition rate has come down corresponding to last year.

## INDICON-2010

Calcutta Section organized INDICON-2010 the flagship conference of IEEE India Council. The entire program was arranged within the campus of Jadavpur University with support from BESU, WBUT, Tata Consultancy Services. The conference was held on three days from 17<sup>th</sup>. To 19<sup>th</sup>. December, 2010. The

conference was inaugurated by Prof. Debesh Das, Hon'ble minister in charge of IT, Govt. of West Bengal. Section Chair Prof. K.K. Mallik delivered the welcome address. On the Inaugural day, keynote lecture was delivered by Prof. Ashok Barua, Emeritus Professor BESU & former Director, IACS. On day 2, three lectures were delivered in Plenary session. Lectures were delivered by notable speakers like Prof. Partha Pratim Chakraborti of IIT Kharagpur, who spoke on 'Design Verification of Hardware & Embedded Systems: Challenges & Trends'; Dr. Sudhir Dixit of HP Lab, Bangalore spoke on 'Simplified User Interaction Accelerated ICT Adoption'; while Prof. Venugopal Rao of IIT Bombay spoke on 'Convergence of Bio-Nano Information Technologies in more than Moore Era'. Approximately 440 technical papers were received, out of which 204 papers were selected after scrutiny. Conference was organized on three tracks viz. Computation, Communication and Power & Energy. Invited Lectures on three tracks were delivered by Dr. Ranabir Bose of Fujitsu Network Communication, Texas; Prof. Sanghamitra Bandyopadhyay of ISI, Calcutta and Prof. Sudip Mazumdar of University of Illinois, Chicago. On the conference day six parallel sessions were held in tracks I & II while 5 parallel sessions were held in track III.

### a. Technical Lecture

<u>Sl.</u>	<u>Speaker &amp; Affiliation</u>	<u>Topic</u>	<u>Venue</u>	<u>Attnd.</u>	<u>Date</u>
1	Prof. Prasad N. Shastry, Bradley University, USA	'Wireless Blood Pressure Monitoring'	Seminar Room, ETCE, J.U., Kolkata  (Jointly with ETCE Deptt. J.U.)	18	4th. August, 2010
2	Dr. Manas Kr. Roy of Rockwell Collins, USA	'Frequency Agile Filters for Software Defined Radios'	Committee Room, ETCE, J.U. Kolkata  (Jointly with ETCE Deptt. J.U.)	20	12 <sup>th</sup> . February, 2010
3	Prof. Adrish Banerjee of IIT Kanpur	'Spectrum Sensing for Cognitive Radio'	Seminar Room, Electrical Engg. J.U., Kolkata	23	29 <sup>th</sup> . January, 2010
4	Dr. M. Radhakrishnan	'Engineering Evolution in Electronics – Micro to Nano'	Seminar Hall, TEQIP Bldg. J.U.	43	7 <sup>th</sup> . April, 2010

		(DL Program)			
5	Prof. Ashoke Kr. Barua, Emeritus Professor, Indian Association for Cultivation of Science	'Climate Changes & role of Green Energy'	Gandhi Bhavan, Jadavpur University	102	17 <sup>th</sup> . December, 2010
6	Prof. Partha Pratim Chakrabarti, Professor, IIT Kharagpur.	Design Verification of Hardware & Embedded Systems: Challenges & Trends	Gandhi Bhavan Jadavpur University	88	18 <sup>th</sup> . December, 2010
7	Dr. Sudhir Dixit, Scientist HP Lab., Bangalore	Simplified User Interaction Accelerated ICT Adoption	Gandhi Bhavan, Jadavpur University	89	18 <sup>th</sup> . December, 2010
8	Prof. V. Ramgopal Rao, Professor, IIT Bombay	Convergence of Bio-Nano Information Technologies in more than Moore Era	TEQIP Building, Jadavpur University	90	18 <sup>th</sup> . December, 2010
9	Prof. Sanghamitra Bandyopadhyay, Professor, ISI Calcutta.	Advances & Challenges in Computational Biology	TEQIP Building, Jadavpur University	89	18 <sup>th</sup> . December, 2010
10	Dr. Ranavir Bose, Scientist, FUJITSU Network Communication, Texas, USA	Energy Sustainability for Telecom Service Providers	TEQIP Building, Jadavpur University	93	18 <sup>th</sup> . December, 2010
11	Prof. Sudip Mazumder, Professor,	Advanced Power electronics for Green Energy Systems	TEQIP Building, Jadavpur	95	18 <sup>th</sup> . December, 2010

	University of Illinois, Chicago, USA		University		
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## OUTREACH ACTIVITIES DURING THE YEAR

EDS Chapter organized one-day mini-colloquia at the following locations as a part of its outreach activities during the period 29<sup>th</sup>. March to 9<sup>th</sup>. April, 2010:

- Siliguri Institute of Technology, Siliguri
- IIT, Guwahati
- North Eastern Hill University, Shillong.
- NIT, Silchar.

The objective of these mini-colloquiums was to expose the academia to the recent developments in the area of nano-electronics. The program was attended by nearly 100 participants in each of these institutes

EDS chapter also organized a mini-colloquium at Bhubaneswar & Berhampore on 29<sup>th</sup>. & 30<sup>th</sup>. December, 2010 jointly with EDS chapter Bhubaneswar & EDS chapter NIST Berhampore.

**Power & Energy Chapter was the technical sponsor for 'ICFPEE 2010: International Conference on Future Power & Energy Engineering' organized by Shenzen University, China, on 26<sup>th</sup>. & 27<sup>th</sup>. June, 2010. Prof. Sivaji Chakravorti delivered the Keynote address.**

**Power & Energy Chapter organized a technical lecture session on 'Leveraging OPC for Dovetailing PLC Communication' at BIT Mesra Ranchi on 21<sup>st</sup>. August, 2010. Mr. Somnath Mitra AGM of SAIL Ranchi, deliberated on the subject. 95 participants participated in the lecture meet.**

**APMTT Chapter organized 'India Antenna Week' – a workshop on 'Advanced Antenna Technology' at Mayfair Beach Resort, Puri, Odisha, during the period 31<sup>st</sup>. May to 4<sup>th</sup>. June, 2010. The programme was organized in association with Institute of Radio Physics & Electronics, Calcutta University.**

The week long residential workshop was aimed to give exposure to the young antenna researchers / scientists to the advanced state of the art technology. The workshop was attended by 55 delegates out of which 40 were below 35 years of age. Notable participants included senior scientists from ISRO & DRDO. The entire programme was technically & financially supported by IEEE AP Society.

Photonics Chapter organized a programme on Science & Technology for students of MCKV School, Liluah. The programme was held on 9<sup>th</sup>. April, 2010. at MCKV School. The students were exposed to the basics of Lasers, display devices, infra-red laser of remote controls of TVs. Models were demonstrated before the students.

WIE organized a national conference on 'Microwave & Communication NCMicroCom-2010' at Birbhum Institute of Technology, Suri, Birbhum, West Bengal on 19<sup>th</sup>. & 20<sup>th</sup>. February, 2010. The programme was jointly organized in association with Calcutta Section & ComSoc Chapter. 147 participants took part in the two day conference.

As a part of CSR, IEEE Calcutta Section organised a one-day program at Birla Industrial & Technological Museum, Kolkata for under privileged children of Pratyush, Barasat. WIE AG, Calcutta was the lead partner in this noble venture.

## STUDENTS' ACTIVITIES

- NIT Rourkela Branch Organised Students' Tech Fest.
- ISM Dhanbad Branch organized Students' Tech Fest with participation from Industry & Academia.

- **Recruitment of student members**

Students from all branches have been recruited as Student Member all over the year. Present strength of Student Member stands at 658

- **Lecture Meet:**

Jadavpur University Branch organized a Lecture meeting on 'Cell Cycle Phase Identification' by Prof. K. Palaniappan.

Jadavpur University Branch organized MEET-2011, a one day workshop jointly with Computer & ComSoc Chapters on 17<sup>th</sup>. December, 2011.

- **Formation of New Student Branch**

Two new student branches opened at a) Bengal Institute of Technology& Management, Santiniketan



b) Calcutta Institute of Engineering & Management, Kolkata.

Petition for formation new IEEE Student Branch at IIT Bhubaneswar has been forwarded to the IEEE Headquarters.

## AWARDS & ACCOLADES

- ✓ PES Chapter received 'Outstanding Small Chapter' Award for 2009 from IEEE PES headquarters.
- ✓ IAS Chapter received 'Outstanding Small Chapter' Award for 2009 from IEEE IAS headquarters.
- ✓ PES Chapter bagged High Performance Chapter Award for 10<sup>th</sup>. year in row.
- ✓ ComSoc Chapter bagged the Chapter Activity Award for 2009.
- ✓ Student Member Mr. Sayantan Dhar received the second best paper award in MV Chauhan PG Paper contest.

## CHAPTER ACTIVITIES DURING THE 4<sup>th</sup>. QTR.

- A One day Seminar on 'Ultra wideband Antennas & High Speed Mobile Communication and Some **Related Aspects**' was organized very recently on November 22, 2010 under IEEE AP-S Distinguished Lecturer Program by IEEE AP-MTT Calcutta Chapter. Prof. Werner Wiesbeck, *Institut für Höchstfrequenztechnik und Elektronik, Germany* delivered two lectures each of one and half hour duration. In prelaunch session, he talked on '**Ultra wideband Antennas**' and in post-lunch session, on 'High Speed Mobile Communication and Some Related Aspects'. During the Seminar, four APMTT volunteers viz. Mr. Chinmoy Saha, Mr S. Sankarlingam, Mr. Sujoy Biswas and Mr. Sudhakar Sahu were felicitated by awarding certificate of appreciation and token gift for their outstanding contributions to successfully organizing Applied Electromagnetics Conference AEMC 2009 and Indian Antenna Week 2010.
- AP-MTT Chapter organized Lecture meeting on:
  - a) '**Monolithic Microwave Integrated Circuits: Design & Interconnects**' Mr. Arijit Majumdar of SAMEER delivered the lecture. The meet was held at Heritage Institute of Technology on 23<sup>rd</sup>. September, 2010.

- PES jointly with Dept of Applied Physics C.U. organized a two day National Workshop on 'Wavelet Transform in Electrical Engineering' on 27<sup>th</sup>. & 28<sup>th</sup>. September, 2010 at C.U. campus. Academicians from various engineering institutes conducted various sessions.
- PES organized Distinguished Lecture Programme on 'Switching Surges in Power Systems' on 24<sup>th</sup>. September, 2010 at J.U. Dr. Herman Dommel PES Distinguished Lecturer & IEEE Life Fellow conducted two sessions on the topic. The first session was on 'Overview of Computer Simulation Methods for Electromagnetic Transients in Power Systems' while the second session was on 'Switching Studies in Power Systems'. The workshop was attended by over 160 participants from academia & industry.
- IAS Chapter organized Technical Lecture sessions on:
  - a) 'Electrical Power Distribution of a large Thermal Power Plant: Present Trend' by Jiban K. Choudhury of DCL, Kolkata on 29<sup>th</sup>. September, 2010 at BESU. The programme was attended by 61 participants.
  - b) 'Special DC Power Supplies for Atomic Physics Experiments' by Dr. Suvarun Dalapati of Stesalit Ltd., Kolkata on 24<sup>th</sup>. November, 2010 at BESU. The programme was attended by 18 participants.
- Computer Chapter organized a three day technical workshop on 'Mobile Computing' jointly with MCKV Institute of Technology & School of mobile Computing & communications, J.U, from 8<sup>th</sup>. To 10<sup>th</sup>. September, 2010. Around 30 participants attended the workshop. Prof. Sipra Das Bit, Dr. Sarmistha Neogy, Dr. Sarbani Roy, Prof. Nandini Mukherjee, Sm. Chandreyee Chowdhury delivered lectures.
- Computer Chapter organized a one day Seminar on 'Cloud Computing' on 13<sup>th</sup>. December, 2010. Sri. Sunirmal Khatua of C.U. Sri. Joydeep Biswas of KAVO spoke on related topics. The seminar was followed by a Cultural Programme. 55 participants took part in the day long programme.
- Computer Chapter organized technical lectures on:
  - a) Secure Personal: Health Vaults: A new vision in Electronic Health **Data Management' by Dr. Indrakshi Ray & Dr. Indrajit Ray of Colorado University, USA on 15<sup>th</sup>. December, 2010 at J.U. The programme was attended by 51 participants.**
  - b) 'Cell Cycle Phase Identification Using Time-lapse Fluorescence Microscopy' by Dr. Kannappan Palaniappan of University of Missouri-Columbia USA on 27<sup>th</sup>. December, 2010 at J.U. The programme was attended by 42 participants.
- CAS chapter organized a one day conference 'CASCOM Post Graduate Students' Paper Conference 2010' jointly with ComSoc Chapter. The event was held at Dr. K.P. Basu Memorial Hall, J.U. on 27<sup>th</sup>. November, 2010.
- CAS Chapter organised technical lecture on :
  - a) 'Optical Networks and its Components' by Prof. P.P. Sahu of Tezpur University on 28<sup>th</sup>. September, 2010 at at ETCE Deptt. J.U
- Photonics Chapter organized technical lectures on:
  - a) 'A compact Overview of Surface Plasmon waves' by J. Sarma on 2<sup>nd</sup>. February, 2010 at IRPE, C.U. The programme was attended by 26 participants.
  - b) 'Relativity for Everyone' by N. Daditch from Pune, India on 23<sup>rd</sup>. March, 2010 at IRPE, C.U. The programme was attended by 42 participants.

- c) 'Semiconductor Optical Amplifier and its role in Advanced Optical Networking' by A. Dasbarman, Kolkata, India on 5<sup>th</sup>. June, 2010 at IRPE, C.U. The programme was attended by 60 participants
- WIE AG organized technical Lecture meeting on:
  - a) 'Sensing System for Health & Environmental Monitoring' by Prof. S.C. Mukhopadhyay of Massey University on 16<sup>th</sup>. November, 2010 at BESU.
- GOLD AG organized technical Lecture on 'Demonstration on VX-Works (Real Time Operating Systems' by Mr. Srujan Babu of G. Coreel Technologies, Bangalore, on 21<sup>st</sup>. September, 2010.

## ARTICLES OF INTEREST

### **Success of Mission critical Applications over Optical Networks**

Nowadays in the global scenario, the IT requirements basically asks for more speed and throughputs and to achieve that Optical Fibers are the best compared to copper based leased lines or Wireless networks. As we know in the copper based networks the loop resistance has to be minimal and the characteristic impedance has to be properly matched and in case of wireless though we are welcoming 3G and 4G spectrums but still as from the basic we know that noise and jitter in the form of distortion is the main worry.

Optical fiber transceivers are being in the research for a decade and scientists and engineers have developed 1G, 10G and now 40G capable transceivers. As far as Metropolitan Area Network and Storage Area Network are taken, the optical fiber medium is the best as far as reliability and speed is concerned. To run mission critical applications like WEB, MAIL, DNS, ERP and other critical applications with different replication technologies and backup systems, engineers should give thrust on using optical fiber as a medium for achieving minimum downtime and maximum uptime, reliability and throughput. As per as study from IEEE, ACM, SPIE and other research journals and Conference papers, it is unanimously accepted that Optical fiber networks have a success rate of 95%

## QUIZ

1. How long did the Hundred Years War last?
2. Which country makes Panama hats?
3. From which animal do we get cat gut?
4. In which month do Russians celebrate the October Revolution?
5. What is a camel's hair brush made of?

6. The Canary Islands in the Pacific are named after what animal?
7. What was King George VI's first name?
8. What color is a purple finch?
9. Where are Chinese gooseberries from?
10. What is the color of the black box in a commercial airplane ?

(Answers will be published in the next edition)

## Memorable Moments for Calcutta Section



INDICON-2010

Dignitaries at the Inaugural session

Prof. Ashoke Barua delivering  
Keynote Address at the Inaugural  
session of INDICON-2010



Prof. A. K. Chattopadhyay

Receiving the Outstanding Chapter  
Award for 2009 from Peter Magyar,  
Chairman Membership Development,  
IA Society.



Prof. Sivaji Chakravorti

Receiving the Outstanding Chapter Award for 2009. Also seen are (L-R) Mr. Ed. Carlsen, VP Awards, Ms. S. Melak, VP Chapter Activities PES and President PES.



Prof. Hermann Dommel

Delivering Distinguished Lecture on 'EMTP' at Dr H.L. Roy Hall in September, 2010. Programme organized by Power & Energy Chapter, Kolkata.



Prof. Robert D. Nevels, President  
IEEE AP-S

Delivering Keynote Address on  
'Nano Antennas' during Inaugural  
Session of India Antenna Week