

## **PART A - SECTION SUMMARY**

### **A.1 Executive Summary**

- **IEEE Kolkata Section** organized the 7<sup>th</sup> edition of the prestigious flagship technical conference of IEEE Region 10 (Asia Pacific), **IEEE TENSYPMP 2019** at the Biswa Bangla Convention Center during **7th to 9th June 2019**. The theme of this conference was **“Technological Innovation for Humanity”**. IEEE TENSYPMP 2019 was supported by IEEE Region10, and sponsored by Powergrid Corporation of India Limited, Ericsson, Cisco and Vehera. This three-day long program was decorated with keynote speeches, plenary sessions as well as invited talks, tutorials, technical seminars and paper presentations. Number of participants: 220.
- **During IEEE TENSYPMP 2019**, IRC Panel Discussion held on **"How IEEE can help Industry and vice-versa"** was organized by IEEE Kolkata Section. There were six participants from industry along with industry liaison chair.
- In addition to that WIE Kolkata Section organized a panel discussion on **“Are women still suffering from visibility problem at workplace?”** Panelists were drawn from different strata of life.
- IEEE Women in Engineering **International Leadership Summit-2019 (ILS – 2019)** was held at Sterlings Mac Hotel, Bangalore, India, during August 30 - 31, 2019. I, **Prof. Sudipta Chatterjee, Chairperson of IEEE Women in Engineering (WIE)**, Kolkata Section, attended the Summit on behalf of the Section.
- IEEE Kolkata Section organized **‘STUDENT MEET 2019’** in which Student Branches made presentation on their activities and three best SB were awarded:  
**First Prize:** IEEE Student Branch of IIIT Guwahati  
**Second Prize:** IEEE AP Student Branch Chapter of University of Calcutta  
**Third Prize:** IEEE GRSS Student Branch Chapter of Netaji Subhash Engineering College
- **Prof. Debatosh Guha** has been conferred with the **'Abdul Kalam Technology Innovation National Fellowship-2020'**. It is the highest National Fellowship in the engineering domain in the country- given by SERB-DST in association with INAE.
- **Prof. Ashish Ghosh**, former Chair of GRSS chapter and Professor, Indian Statistical Institute, Kolkata, India, has been elected as the **Fellow of National Academy of Sciences, India.**
- **Prof. Ujjwal Moulik**, Professor Department of Computer Science and Engineering, Jadavpur University has been elected as **Fellow of IEEE.**
- **Prof. Amlan Chakraborty**, Amlan Chakrabarti, Professor A.K.Choudhury School of Information Technology, University of Calcutta, has been nominated as **IEEE Computer Society Distinguished Visitor.**
- A plenary lecture session has been organized by IEEE Kolkata Section in collaboration with “Jadavpur University Research Scholars Association” (J.U.R.S.A) on 2019, at Gandhi Bhawan, Jadavpur University campus. Participants: 60.
- The IEEE Kolkata Section in association with Meghnad Saha Institute of Technology organized a Technical Lecture session on **'Design & Planning of Urban Electric Distribution Network'** by Mr. Sanjay Kar Chowdhury, Chairman IEEE Kolkata Section at MSIT Kolkata on 27/09/2019. Participants: 50
- The IEEE Kolkata Section in association with Electrical Engineering Department, Netaji Subhash Engineering College, Garia, Kolkata organized a Technical Lecture on **'Planning and Design of an Urban Power Distribution Network'** by Mr. Sanjay Kar Chowdhury, Chairman IEEE Kolkata Section at NSEC, Garia, Kolkata-152 on 23<sup>rd</sup> November 2019. Participants: 75.

- Prof. Ashish Ghosh, MIU, ISI, Kolkata and Ex-Chair of GRSS, Kolkata Chapter has been appointed as the **In-Charge of both ChapNet and Ambassadors Programs of IEEE-GRSS** by the President of GRSS.
- IEEE Kolkata Section had organized **IEEE J. C. Bose Milestone Lecture** at Dr. Triguna Sen Auditorium, Jadavpur University on 21st Aug 2019 (5.30 p.m.). Dr. K V S Hari, Professor, Department of E.C.E., Indian Institute of Science, Bangalore was the speaker and the topic was '**Experiments with MIMO Signal Processing Systems**'. Number of Participants: 52.
- IEEE Kolkata section organized a Conference Leadership Programme on 30th November, 2019 at Holiday Inn Resort at Uluberia from 2 pm onward. Mr. Sanjay Kar Chowdhury, Chairman IEEE Kolkata Section was the speaker. Participants: 23.
- **IEEE Kolkata Section** has achieved its **Annual Membership Recruitment & Retention target** for the year 2019. Certificate of appreciation has been given to Chair & Vice Chair & Chair, MD of the Kolkata Section.
- IEEE Kolkata Section received **USD 3,000** from IEEE R10 as incentive grants for the submitted Sections/ Council reports, which have been evaluated by R10 Awards & Recognitions Committee and R10 Operations Committee.
- This year IEEE Kolkata Section has instituted a special award '**Lifetime Achievement Award**' to recognize contribution of its illustrious members. This is in addition to the existing Outstanding Volunteer & Outstanding Student Volunteer:

## A.2 List of Section Officer and Executive Committee Members

1	Sanjay Kar Chowdhury	Chairman
2	Sushmita Mitra	Chairman-Elect
3	Iti Saha Misra	Vice-Chairman
4	Atanu Kundu	Secretary
5	Debangshu Dey	Treasurer

Members		Elected Officials	
1	Mita Nasipuri	1	Chair AP-MTTS Chapter
2	Arijit Basu Ray	2	Chair CAS Chapter
3	Kaushik Das Sarma	3	Chair CIS Chapter
4	Koushik Dutta	4	Chair Computer Chapter
5	Bhaskar Gupta	5	Chair COMSOC Chapter
6	Nibaran Das	6	Chair DEIS Chapter
7	Tridibesh Nag	7	Chair EDS Chapter
8	Siddhartha Mitra	8	Chair GRSS Chapter
9	Chandreyee Sarkar	9	Chair IAS Chapter
10	Susanta Ray	10	Chair PES Chapter
11	Sayan Chatterjee	11	Chair Photonics Chapter
12	Suparna Kar Chowdhury	12	Chair YP Affinity Group
13	Sarmistha Neogy	13	Chair WIE Affinity Group
		14	Chair SIGHT Affinity Group
		15	Chair CSS-IMS Chapter
		16	Chair SSC Chapter
		17	Chair Signal Processing Chapter
		18	Chair Patna Sub-section
		19	Chair Bhubaneswar Sub-section

## PART B - ORGANIZATIONAL ACTIVITIES

### B.1 Membership Development Programs

Total active IEEE members: 3717(In 2018 it was 3389)

Total inactive IEEE members: 87

Total IEEE Student members: 1065

<b>Region</b>	<b>Grade</b>	<b>IEEE Status</b>
R.10	(All)	Active

Count by Region and Grade

Region	Council	Section	Grade Category	Grade	Total
		Kolkata Section	IEEE Grades	Associate Member	21
				Fellow	9
				Graduate Student Member	768
				Life Fellow	2
				Life Member	7
				Life Senior	25
				Member	1,476
				Senior Member	325
				Student Member	1,065
			Other Grades	Affiliate	19
			Total		3,717

#### Effort in Membership Development:

- In the inauguration event of IEEE WIE student branch at NIT Silchar on 16th February, 2019 a lecture was delivered on IEEE for student and IEEE entrepreneurship activities. Initially 15 number of students have been taken membership under IEEE WIE student branch.
- At NIT Mizoram on 24th April, 2019. A lecture was delivered on the student benefits in IEEE membership. Students have shown good response to increase their membership strength.
- At Tripura Inst. of Technology from 31st March-2nd April, 2019 aMD session was conducted to put forward the vision & mission of IEEE and initiate IEEE activities.

#### Evidence of retention of members:

- Each default member is contacted through email / mobile phone and persuaded to renew his / her membership.

### B.2 Chapter Activities

**Total Active Chapters: 15**

**India Council Chapter: 1**

#### AP/MTT

##### Technical Programs:

- IEEE AP-MTTs Kolkata Chapter organized **Advanced School of Antennas (ASA) 2019**, it was held at Bhubaneswar during 20-24 June 2019. School of Electronics Engineering of KIIT University, Bhubaneswar was the host. The course for this year was designed based on the theme '*Antenna Design and Measurement*' and spanned over seven modules. Senior professors along with industry and R&D experts were invited to offer the courses. Two antenna industries also participated to provide hands on training to the participants. The school was attended by 48 registered participants of various categories such as graduate students, researchers, young faculty members from national institutes and universities and industry professionals.

- IEEE AP/MTT Joint Chapter, Kolkata has organized a Lecture Meeting Program on 11<sup>th</sup> January, 2019 at E&TCE Dept., IEST, Shibpur. Speaker Dr. Biswarup Rana, Post-Doctoral Researcher, Seoul National University of Science and Technology, Republic of Korea has delivered lecture on “Broadside Radiating Implantable Antenna Design for Brain-Machine Interface” and Dr. Ayan Chatterjee, Assistant Professor, National Institute of Technology, Sikkim has delivered his valuable lectures on “Contribution of Frequency Selective Surfaces in Antennas: Beyond Filtering”. The event was attended by various faculty members, research scholars and graduate students. Both the lectures were very much enthusiastic and encouraging. **Attendance:** 52 (20 IEEE + 32 Non-IEEE)
- IEEE AP-MTTs KOLKATA CHAPTER in association with Calcutta University APS-SBC organized a Lecture on April 18, 2019 at the University of Calcutta, 92, A. P. C. Road, Kolkata-700009. Mahammad Intiyas Pasha, Scientist- ISRO Bangalore, the first speaker of the day, delivered his lecture on Satellite Communication.  
Dr. Jan Weiss, from University Corporation for Atmospheric Research in Boulder, Colorado, was the second speaker of the day. He delivered his lecture on GNSS Radio Occultation and Reflection Retrieval Processing and Science Applications. The event was attended by various faculty members, research scholars and graduate students  
**Attendance: 26 (26 IEEE + 0 Non-IEEE)**
- Lecture Meeting was organized by the IEEE AP/MTT Joint Chapter, Kolkata on Monday 21<sup>st</sup> May, 2019 at the M N Saha Auditorium, Rajabazar Campus, 92, A.P.C. Road, Kolkata 700009, University of Calcutta. Our speaker Dr. Chandrakanta Kumar, Scientist –SG, ISRO, Bangalore, was delivered his valuable lecture on “Design Aspects of the Reflector Antenna: Some Non-popular Geometries and Applications”. The event was attended by various Faculty members, research scholars and graduate students. It was a very successful event. **Attendance:**10 (10 IEEE + 0 Non-IEEE)
- Lecture Meeting program was organized by the IEEE AP/MTT Joint Chapter, Kolkata on Monday July 11, 2019 at the Center for Research in Nanoscience and Nanotechnology, University of Calcutta, JD-2, Sector-3, Salt Lake, Kolkata-700106. Prof. Animesh Biswas, Director, NIT Rourkela, delivered an inspiring lecture on “Realization of Microwave Circuits and Antennas on SIW and Dielectric Image Guide”. The event was attended by various faculty members, research scholars and graduate students. It was a very successful event.
- IEEE AP-MTTs KOLKATA CHAPTER in association with Calcutta University APS-SBC organized a Lecture on April 18, 2019 at the University of Calcutta, 92, A. P. C. Road, Kolkata-700009. Prof. Ananjan Basu, IIT Delhi, the speaker of the day, delivered his lecture on Recent Trend on Microwave Research. The event was attended by various faculty members, research scholars and graduate students. **Attendance:**16 (12 IEEE + 4 Non-IEEE)
- IEEE AP-MTTs KOLKATA CHAPTER organized a lecture on August 5, 2019 at Radio Physics and Electronics, University of Calcutta. Dr. Goutam Chattopadhyay, of JPL NASA was the speaker of the day. He discussed on the latest trends in Research at JPL. The event was attended by various faculty members, research scholars and graduate students. He motivated young students and researchers towards research. **Attendance:**30 (18 IEEE + 12 Non-IEEE)
- IEEE AP-MTTs KOLKATA CHAPTER in association with Calcutta University APS-SBC organised a Lecture Meeting on September 5, 2019 at the University of Calcutta, 92, A. P. C. Road, Kolkata-700009. Puneet Mishra, ISRO Bangalore and Debojyoti Choudhury, HCL Technologies, India, were the two speakers of the day. They delivered their lecture on Antenna Applications in Space and Industry respectively. The event was attended by various faculty members, research scholars and graduate students.
- IEEE AP-MTTs KOLKATA CHAPTER in association with RCC Institute of Information Technology, Canal S Rd, Belegkata, organised a Technical Seminar on September 24, 2019 at the RCC Institute of Information Technology, Canal S Rd, **Seminar.** Dr Jawad Y. Siddiqui, University of Calcutta the speaker of the day. He delivered his lecture on Multi-functional

Antennas. The event was attended by various faculty members, research scholars and graduate students. **Attendance:** 28 (28 IEEE + 0 Non-IEEE)

- Lecture Meeting was organized by the IEEE AP/MTT Joint Chapter, University of Calcutta, 92, A. P. C. Road, Kolkata-700009. Speaker Dr. Somak Bhattacharyya, delivered his lecture on “Applications of Metasurfaces in High Frequency Region”. The event was attended by various faculty members, research scholars and graduate students. **Attendance:** 25 (19 IEEE + 6 Non-IEEE)
- IEEE AP-MTTs Kolkata Chapter organized **Students Innovation Contest-2019**, S. D. P. U. Vidyachakra, Raiganj on 22 August 2019.

## CASS

### **Technical Programs:**

- **Technical lecture** on “Impact of Internet of Things on the Telecommunication Industry” on **February 23, 2019** at Seminar Hall of IETE Kolkata Centre, Sector-V, Salt Lake Electronics Complex, Kolkata, West Bengal India 700091. Number of attendees: 44

#### **Technical Session -I**

**Topic:** Cross-domain Convergence in IoT

**Speaker:** Dr. Sudip Misra, Professor, Department of Computer Science & Engineering, IIT Kharagpur

#### **Technical Session-II**

**Topic:** Digital Manufacturing IoT enabled services for Telecommunication Industry

**Speaker:** Dr. Tapas Chakraborty, Principal Scientist, TCS Research & Innovation.

#### **Technical Session-III**

**Topic:** Precision Agriculture using IoT

**Speaker:** Dr. Debashis De, Professor, Dept. of Computer Sc. & Eng., MAKAUT, West Bengal

#### **Technical Session –IV**

**Topic:** Remote surveillance of water quality under IoT environment

- CIRCUISTICS 2019: Electrical Engineering Department at Jadavpur University, Jadavpur, Kolkata, India, on 07 March 2019 12:00 PM, number of attendees: 63  
CIRCUISTICS 2019 is an event of Convolution, a techno-management fest of Jadavpur University, Department of Electrical Engineering, organized by IEEE Circuits and Systems Society Chapter, Kolkata section and JUEE Students Forum.
- IEEE Circuit Design Contest, OLYMPIAD 2019 during 13 April 2019 09:00 AM – 14 April, 2019 4:30 PM at Institute of Engineering & Management (IEM), number of attendees: 244
- IEEE CAS TECHNICAL PAPER CONTEST-2019 on 03 May 2019 10:00 AM at Narula Institute Of Technology, 81, Nilgujanj Road, Jagrata Pally, Deshopriya Nagar, Nilgaunj, Agarpara, Kolkata, West Bengal. Number of Attendees: 75.
- **Collaboration :**  
The CAS Chapter of IEEE Kolkata Section in collaboration with Electrical Engineering Department, Jadavpur university & IEEE Student branch, Narula Institute of Technology organized a Technical Lecture Program on “Sensors for Everyday Life”, at Electrical Engineering Department, Jadavpur University, Jadavpur- 700032 on 19 August 2019 02:30 PM, Number of attendees: 84  
**Speaker:**  
Dr. Anindya Nag of Dongguan University of Technology.
- **Outreach Program:**  
Technical lecture program at Institute Of Engineering And Technology, Bundelgarh University, UP, India, during 23<sup>rd</sup> -24<sup>th</sup> September, 2019.  
**23rd September 2019**  
10:00 AM- Technical lecture program, Speaker: Prof. Dr. Asish K Mukhopadhyay, Topic: Telecommunication & Switching.  
03:00 PM - 05:00 PM - technical lecture program, Speaker: Prof. Dr. Joyanta K Roy, Topic: IoT Past, Present & Future  
**24th September 2019**

10 AM to 12 AM - Technical lecture by Prof. Dr. Joyanta Kumar Roy, Topic: Industry & You-Gap Analysis

03:00 PM- 05:00 PM- Technical lecture by Prof. Dr. Asish K Mukhopadhyay, Topic: A Road map to NBA

## **Computer**

- **Technical Lectures**
- Computer Chapter of IEEE Kolkata Section organized a lecture session on 7th January 2019, 2 pm at ADMH, CSE Department, Jadavpur University. Prof. Suman Jana, Department of computer science at Columbia University, NY, USA delivered the lecture on Security Testing and Verification of Neural Networks.
- Computer Chapter of IEEE Kolkata Section organized a special lecture on the topic "Ambient intelligence: convergence of artificial intelligence, machine learning, biometrics, cloud-computing, and internet-of-things" by Prof. Vincenzo Piuri, FIEEE at Amitava Dey Memorial Hall, Dept. of CSE, Jadavpur University.
- Computer Chapter of IEEE Kolkata Section organized a special lecture on the topic Leveraging Big Code to Improve Software Reliability, by Prof. Baishakhi Ray, Department of Computer Science at Columbia University, NY, USA on 7th January 2019, 4 pm at ADMH, CSE Department, Jadavpur University.
- Computer Chapter of IEEE Kolkata Section organized a Technical talk on "Spatial Network representation of the three-dimensional Human by Genome" by Prof. Dariusz Plewczynski, PhD, Laboratory of Functional and Structural Genomics, Centre of New Technologies, University of Warsaw, Banacha 2c Street, 02-097 Warsaw, Poland, at CMATER Seminar room, CSE Department, Jadavpur University (main campus), on 4th January, 2019, 3 pm.

## **COMSOC**

### **Technical Lectures and Seminars:**

- On 17th Feb 2019, IEEE ComSoc Kolkata Chapter organized a International Infosec Summit, Bangladesh, at The Westin, Dhaka. This Symposium is driven by InfoSec Foundation, and Enterprise IT World. The Topic of the event covered Cyber Security Roadmap for Financial Sector/ Industry 4.0 / AI & Blockchain / Startups in IT Security ecosystem, Agility and Flexibility in adopting Cyber Security for Telecom/ Cloud/ Infra Providers, etc. This is a platform that aims to bring together the MD/CEOs/CIOs/CDOs/CISOs in Global CISO's with an agenda to interact and discuss the latest trends in Information Security and share their key experiences and learning. Delegates from all over the world were present in the Conference. Minister- planning, Govt of Bangladesh was present in the conference. Industry activity Coordinator of IEEE Bangladesh Section, Mr. Azfar Adib was also present in the event. This event was jointly sponsored by the Enterprise –IT World.
- This year COMSOC Kolkata Chapter was one of the Technical Sponsors for the Second International Conference on Advanced Computational and Communication Paradigms (ICACCP-2019), Organized by: Department of Computer Science and Engineering, Sikkim Manipal Institute of Technology, East Sikkim, Sikkim, India, during February 25-28, 2019.
- During 20-24 May 2019, IEEE Com Soc Kolkata Chapter technically supported IEEE AP CCC Meeting at Hotel Shangri La, Shanghai. The event was sponsored by IEEE Region 10.
- For the encouragement of the students dealing with communication fields, COMSOC Kolkata Chapter has organized the best paper contest on the session of communication on 27 Feb 2019 in ICACCP 2019. Two best paper awards were given based on the content of the paper, paper review report and the presentation at the session. Winners were given the certificate and a token money of Rs. 3000 each.
- **Workshop:**
- ComSoc Kolkata Chapter was the technical cosponsor of the event for 3-day workshop held during Feb 14-16 2019, with the financial support of UGC UPE-II Scheme of Jadavpur University under mobile computing and innovative applications. Two technical lectures were hosted on the first day of the workshop in association of COMSOC Kolkata Chapter. Renowned professors from IIT KGP were among the experts. Prof. Saswat Chakrabarty has delivered a very interesting topic on "Cognitive Communication" in his own pragmatic style. The second lecture was

delivered by Prof. Suvra Sekhar Das on “5G Technology developments” in a mesmerizing manner. There were 55 participants for the two lectures.

- ComSoc Kolkata Chapter organized a One day workshop on “Optical fiber Communication with real time case study in the Industry” held on 20<sup>th</sup> July, 2019 at the Broadband Wireless Communication Lab, Annex Building, ETCE Department first floor, Jadavpur University. A lecture presentation by Industry Expert Mr. Koushik Dutta, Asst. Manager, CESC, followed by a workshop on Optical fiber communication including live demo was arranged.
- COMSOC Kolkata Chapter has organized two interesting technical lectures on June 4 and June 6, 2019 both at the Broadband Wireless Communication Lab of ETCE Department, Jadavpur University.

**Lecture-1:** Dr. Tanumay Manna has presented 1.30 hours lecture on “Studies for the design of Wireless Body Area Network over Cognitive Radio Networks” where PG and PhD students have participated. The session was very interactive and technically intense. Dr. Manna Spoke very confidently for each of the related question raised by the audience.

**Lecture-2:** The second lecture meeting was delivered by Dr. Rana Pratap Sircar, Vice Chair of IEEE ComSoc Kolkata Chapter, and Director of Technology and Innovation of Ericsson, Delhi Centre on the very upcoming topic of “Quantum Computation and Quantum Information”.

The lecture was participated by bachelor and master degree students of Jadavpur University and other engineering colleges. Dr Sircar spoke in length about the very nascent development of this new era.

## CSS-IMS

- **Technical Programe**
- IEEE CSS-IMS Kolkata chapter, in collaboration with the Department of Applied Physics University of Calcutta, was organized a technical lecture meeting on "Kalman Filter: Theory and Practice". The event was taken place at the seminar room of Department of Applied Physics on 15th November 2019.
- A Two day Seminar on “Computational Intelligence in Signal Power and Control (CISPC-2019)” on 28<sup>th</sup>-29<sup>th</sup> March, 2019 was organized by the Department of Electrical Engineering, Future Institute of Engineering and Management, Sonarpur, Kolkata (W.B.) with a technical cosponsored by IEEE Joint CSS-IMS Kolkata Chapter Kolkata Section.

Speakers:

Prof. Ranjit Kumar Barai, Dept. of Electrical Engg. Jadavpur University: "Advanced Control Techniques of Robotic System".

Dr. Abhinandan De, Dept. of Electrical Engg. IEST, Sibpur: "Application of AI in Power System".

Dr. Rajarshi Gupta, Dept. of Applied Physics, University of Calcutta: "Improving Reliability in Cardiovascular Measurements using Computational Intelligence".

Dr. Kaushik Das Sharma, Dept. of Applied Physics, University of Calcutta: "Intelligent Control Techniques". Attendees: Students: 150.

- IEEE Joint CSS-IMS Kolkata Chapter Kolkata Section organized a “Workshop on Smart Grid” on 2<sup>nd</sup> Mar 2019 at B. P. Poddar Institute of Management of Technology, 137 V.I.P. Road, Kolkata, West Bengal, India 700052. Department of Electrical Engineering got the privilege of hosting an interactive session with Professor (Dr.) Mihaela Albu Distinguished Lecturer of IEEE Instrumentation & Measurement Society Politehnica University of Bucharest, Romania. It was preceded by a lecture session by Prof. Arindam Kumar Sil from Department of Electrical Engineering Jadavpur University.

The program started with Watering of sapling by senior professors of the Department and inaugural speech by Dr. Nandita Sanyal, Head of the Department. Afterwards Dr. Sudipta Chakraborty introduced Prof. Sil who delivered lecture on Modern Power System Planning and how that would incorporate the concept of smart grid. The session was very much interactive and informative. Prof. Sil was felicitated by Dr. Sutapa Mukherjee. After that Dr. Sudipta Chakraborty introduced Prof. Albu. She continued her interactive session on “Application and challenges of worldwide measurement solution of smart grid deployment”. She also highlighted some activities of Instrumentation & Measurement Society of IEEE worldwide for the benefit of students.

- IEEE Joint CSS-IMS Chapter, Kolkata Section, organized a ONE DAY INTERNATIONAL SEMINAR ON “TRENDS IN SIGNAL PROCESSING” on 02 Mar 2019 at Meghnad Saha Auditorium, University of Calcutta, Kolkata, India.

Lecture 1: "High Reporting Rate Measurements for Smart(er) Grids".

Speaker: Professor Mihaela Albu, Electrical Engineering Department Politehnica University of Bucharest, Romania.

Lecture 2: "Sparse and Collaborative Representation Based Approach for Biometric Systems".

Speaker: Professor Amitava Chatterjee, Electrical Engineering Department, Jadavpur University, India.

- **DL Programe:**
- 01 Mar 2019, 2:00pm, IEEE Joint CSS-IMS Kolkata Chapter organized a Distinguished Lecturer Program of Instrumentation & Measurement Society, IEEE, USA at Seminar Hall, Electrical Engineering Department, IEST, Shibpur. The Speaker was Professor Mihaela M. Albu, Department of Electrical Engineering, Politehnica University of Bucharest, Romania and the title of the lecture was "**High Reporting Rate Measurements for Smart(er) Grids**".

## CIS

- **Technical Programe :**
- 2019 Second International Conference on Advanced Computational and Communication Paradigms (ICACCP) was organized at the Department of Computer Science and Engineering (CSE), Sikkim Manipal Institute of Technology (SMIT) during February 25 to February 29, 2019, in technical collaboration with IEEE Computational Intelligence Society, Kolkata Chapter.
- IEEE Computational Intelligence Society, Kolkata Chapter organized a State Level Seminar on Computational Intelligence and Image Processing at Belda College on 24th April, 2019. Total Number of attendees: 50.
- During 15th July to 19th July, 2019, IEEE Computational Intelligence Society organized a One Week Faculty Development Program on Artificial Intelligence in Big Data Analytics (AIBDA 2019); RCC Institute of Information Technology. Several leading researchers including Prof. Amlan Chakrabarti, Dr. Indrajit Pan, Dr. Kunral Ghosh, Dr. Pralay Mitra, Prof. Paramartha Dutta and Dr. Chitrita Chaudhuri delivered talk in the FDP. Total Number of attendees: 55
- IEEE Computational Intelligence Society, Kolkata Chapter organized National Level Student Workshop On Machine learning and cloud computing at RCC Institute of Information Technology, Kolkata during 6th August to 8<sup>th</sup> August, 2019. Total Number of attendees: 46
- **DL Programe :**
- An IEEE CIS Distinguished Lecture Program by Prof. Saman K. Halgamuge, FIEEE, The University of Melbourne was hosted by Department of Information Technology, RCCIT, Kolkata on 6th May, 2019. Total number of attendees: 33  
Title of talk:  
Unsupervised Deep Learning meets Bioinformatics and Neural Engineering

## EDS

- **Distinguished Lecture (DL)**
- 1. Prof. Subir K Sarkar delivered talk at Kalyani Govt. Engg. College on 11<sup>th</sup> September 2019. Title of the talk was "OFET based Devices and their Applications". No of attendees: 97
- 2. Dr. M. K. Radhakrishnan delivered talk at Netaji Subhash Engineering College on 2<sup>nd</sup> September 2019. Title of the talk was "Circa 70 – Si Device Progression and Challenges towards Nano era".
- 3. Prof. C K Sarkar delivered talk at Dream Institute of Technology, Kolkata on 17<sup>th</sup> August 2019. Title of the talk was "Advanced MOSFETs". No of attendees: 80
- 4. Dr. Durga Misra delivered talk at Netaji Subhash Engineering College on 12<sup>th</sup> January 2019. Title of the talk was "Next Generation Nanoelectronics Devices: Issues and Challenges".
- **Conference/Colloquium**
- 1. International Seminar cum Research Colloquium on "MEMS based Sensors and Smart Nanostructured Devices" was held at Jadavpur University on 27<sup>th</sup> December 2019. Program



was sponsored by RUSA 2.0, IC Design & Fabrication Center, Dept. of ETCE and technically co-sponsored by IEEE EDS Kolkata Chapter. No of attendees: 200

- 2. 3rd International Conference “2019 Devices for Integrated Circuit (DevIC)” was held at Kalyani Govt. Engineering College on 23<sup>rd</sup> – 24<sup>th</sup> March 2019. Program was organized by IEEE KGEC Student Branch Chapter in association with Department of ECE, KGEC, technically co-sponsored by IEEE EDS Kolkata Chapter. No of attendees: 200
- **Workshops**
- 1. The ED MSIT Student Branch Chapter and MSIT Student Branch, in association with the Department of ECE, MSIT organized the One Day Industry Academia meet by Mr. Chandan Das, TCS on 22<sup>nd</sup> August, 2019 at the college premises. The talk started from 3.00 pm and it was of approximately 60 minutes duration. The topic of the talk was "IoT Devices and Embedded Applications". Almost fifty students attended the event. Out of the fifty students, almost twenty IEEE student members attended the talk.
- 2. The ED MSIT Student Branch Chapter and MSIT Student Branch, in association with the Department of ECE, MSIT organized the one week hands on training on IoT based embedded device and Arduino from 16<sup>th</sup> August, 2019 to 23<sup>rd</sup> August, 2019. “Micropro” from Kolkata has delivered the quality training on the embedded systems. Almost fifty three students of the pre final year attended the training. Dr. Manash Chanda and Dr. Swapnadip De coordinated the session. Out of the fifty three students, almost seventeen students are IEEE student members. Students learned the embedded language for programming IoT applications. Students were immensely benefitted by the training.
- 3. The ED MSIT Student Branch Chapter and IEEE MSIT Student Branch, in association with the Department of ECE, MSIT organized the One Day IEEE EDS Industry Academia meet on 25<sup>th</sup> July, 2019 from 11 am to 12pm to motivate and enhance the technical knowledge of the final and pre-final year students of ECE Department. Mr. Priyanko Mitra, Manager, Mixed Signal Solution, Power Management Team, Sankalp Semiconductor delivered a technical talk on “An overview of analog VLSI industry” in this occasion and also interacted with the students for their betterments. Almost seventy students attended the session. Out of the seventy students, twenty eight IEEE EDS Student members and five IEEE EDS Members attended the talk.
- 4. A student paper contest has been organized by the IEEE EDS MSIT SBC in association with the Dept. of ECE, MSIT on 16<sup>th</sup> June, 2019. Almost 31 papers have been presented in this event. Total 76 students participated out of which total 42 were the IEEE members. Total 26 IEEE EDS student members attended the paper contest. The contest has been organized to motivate the students towards the research of the VLSI device and circuits. Also few papers from the communication, antenna propagations and IoT-Embedded system have been presented here.
- 5. A workshop has been organized for the 1<sup>st</sup> year students on 10<sup>th</sup> June, 2019 to spread the awareness of IEEE membership and also to involve them in the research of VLSI Device and circuit design and modelling. Dr. Manash Chanda, Chapter Advisor, IEEE ED MSIT SBC and Dr. Swapnadip De, Counselor, Student Branch were the key person of this event. Total 12 students from the first year have taken the membership of IEEE EDS after the event. Other students were also immensely benefitted and motivated by the talk of the Advisor and counsellor.
- 6. Innovation challenge and Prototype contest has been also organized by the IEEE ED MSIT Student Branch Chapter in association with the IEEE MSIT SB and IIEDC, MSIT on 1<sup>st</sup> April, 2019. Almost 20 teams having four members each have participated in this competition. Different innovative concepts have been modeled and showcased in this competition. Almost 26 IEEE Student Members and 54 non-IEEE Student members have participated in this event. Mainly the projects were based on VLSI Circuits and Device; Communication and Networking; RF and Microwave Engineering, Antenna Design; Embedded System, FPGA and Image Processing. The students groups were highly motivated by the event.
- 7. The ED MSIT Student Branch Chapter in association with IEEE COMSOC MSIT Student

Branch Chapter, IEEE PES MSIT SBC, IIEDC MSIT and MSIT Student Branch organized the a Technical Symposium:“PARIDHI 2019” on 30th March, 2019.The program was inaugurated by Chief Guest Prof. Chandan kr. Sarkar, Chairman, IEEE SSCS Kolkata Chapter. Prof. (Dr.) Sukumar Roy Chowdhury, Director, MSIT has delivered a welcome note on this occasion. Vote of thanks was delivered by Dr.Manash Chanda. Dr. Amlan Chakroborty, Dean, AKCSIT, University of Calcutta delivered a technical talkon Embedded Designs and issues. The talk was for for 60 minutes. Almost 30 IEEE student members and near about 45 non-IEEE student members along with the faculties attended the talk. There was a question answer session after the talks. All the students immensely benefitted by the talk.

- 8. The ED MSIT Student Branch Chapter and MSIT Student Branch, in association with the Department of ECE, MSIT organized the one week hands on training on PCB designs and IoT based embedded device from 7<sup>th</sup> January, 2019 to 14<sup>th</sup> January 2019. Almost thirty students of the pre final year attended the training. Dr. Sudip Dogra and Dr. Manash Chanda coordinated the session. Out of the thirty students, almost twelve students are IEEE student members. Students learned the PCB designs and embedded language for programming IoT applications.

- **Seminars/ One-day Lecture Programs**

- 1. IEEE EDS technical Talk on “Quantum Nano structure”, organized by the IEEE EDS MSIT SBC, in association with the Dept. of ECE, MSIT at Jadavpur University on 6<sup>th</sup> September 2019. Lecture was delivered by Prof. Chayanika Bose, Professor, Dept. of Electronics and Communication Engineering Department, Jadavpur University. No of attendees: 35
- 2. IEEE EDS technical Talk on “Semiconductor Nano-structures” organized by the IEEE EDS KGEC SBC at Kalyani Govt. Engineering College on 26<sup>th</sup> August 2019. Lecture was delivered by Prof. Chayanika Bose, Professor, Dept. of Electronics and Communication Engineering Department, Jadavpur University. No of attendees: 100
- 3. One-day Lecture on “Quantum Mechanical Effects in Devices” jointly organized by IEEE EDS Kalyani Government Engineering College Student Branch Chapter and Department of ECE, KGEC on 24<sup>th</sup> April 2019. Lecture was delivered by Prof. Debashish De, Professor of CSE, MAKAUT. No of attendees: 25
- 4. One-day Lecture on “Nano-dimensional Biosensors” jointly organized by IEEE EDS Kalyani Government Engineering College Student Branch Chapter and Department of ECE, KGEC on 10<sup>th</sup> April 2019. Lecture was delivered by Dr. Avik Chakraborty, Asst. Professor of JGEC, Jalpaiguri. No of attendees: 25
- 5. One-day Lecture on “SCEs in Nano-MOSFETs” jointly organized by IEEE EDS Kalyani Government Engineering College Student Branch Chapter and Department of ECE, KGEC on 28<sup>th</sup> March 2019. Lecture was delivered by Dr. Manash Chanda, Asst. Professor of MSIT, Kolkata. No of attendees: 20
- 6. One day technical talk on "IoT Devices and Low power Applications" organized by The ED MSIT Student Branch Chapter and MSIT Student Branch, in association with the Department of ECE, MSIT on 14<sup>th</sup> March 2019. Lecture was delivered by Dr. Subhankar Majumdar, Assistant Professor, Department of Electronics and Communication Engineering, NIT Meghalaya. No of attendees: 50
- 7. Industry-Academia Innovative practice Lecture-talk program was organized by IEEE EDS Kalyani Government Engineering College Student Branch Chapter on 20<sup>th</sup> February 2019. Amit Kumar Bhattacharya Ex-CGM (Chief General Manager) of BSNL delivered lecture. No of attendees: 100
- 8. One day technical talk on "Staggered Hetero Junction TFET", organized by The ED MSIT Student Branch Chapter and MSIT Student Branch, in association with the Department of ECE, MSIT on 14<sup>th</sup> February 2019. Prof. (Dr.) Angsuman Sarkar, Associate Chairman, IEEE ED Kolkata Chapter delivered the lecture. No of attendees: 88
- **Chapter efforts directed to Students and Young Professionals for IEEE EDS Awareness**

- 1. Dr. A. Sarkar Delivered an invited lecture talk on "Benefits of IEEE Membership" in "IEEE EDS Outreach Program" on 17<sup>th</sup> August 2019, organized by The Departments of Electronics & Communication Engg. of Dream Institute of Technology, Thakurpukur, Kolkata
- 2. Dr. A. Sarkar Delivered an invited lecture talk on "Introduction to Electronics Engineering" on 1<sup>st</sup> August 2019, organized by The Departments of Electronics & Communication Engg. of Dream Institute of Technology, Thakurpukur, Kolkata

## DEIS

- **Technical Programe:**
- Dr. Biswendu Chatterjee, Dept. of Electrical Engineering, Jadavpur University, Kolkata, India has given a lecture on High Voltage Power Supply: Microcontroller Based Control Techniques at Seminar Room, Electrical Engineering Department, Jadavpur University, Kolkata, at 11th July, 2019. Participants: 44(IEEE-6; Non-IEEE-38).
- Dr. Sovan Dalai, Dept. of Electrical Engineering, Jadavpur University, Kolkata, India has given a lecture on Condition Monitoring of High Voltage Equipment at Seminar Room, Electrical Engineering Department, Jadavpur University, Kolkata, on 20<sup>th</sup> September, 2019. Participants: 32(IEEE-6; Non-IEEE-22).
- **Student Activity:**
- Circuistic 6.0, organized by the Students of the Department of Electrical Engineering, Jadavpur University, Kolkata, India, at Electrical Engineering Department Jadavpur University on 7th and 10th March, 2019, in collaboration with DEIS Kolkata Chapter, was a competition where students from various institutions in groups took part in making circuit solutions related to practical engineering problems. There were 3 separate competitions this year under this event, namely, Junior Group for the first year students, Sophomore Group for the second year students and Senior Group for third and fourth year students. Design competition part lasted for six hours. The Jury comprised of eminent academicians and technologists to judge the award winners of the competition. Accordingly prizes and certificates were given to the participants holding the first, second and the third positions in Junior Group, first and second prizes for the Sophomore Group and only first prize was given for Senior Group. There were in total 188 participants (48 teams approx.) in this event this year.
- **Workshop:**  
DEIS Kolkata Chapter has organized a Three Days Workshop on industry Standard High Voltage Engineering and Testing of Medium Voltage Power Equipment in NABL Accredited Laboratory.  
from October 18th to 20th, 2019 at Electrical Engineering Department, Jadavpur University.  
Participants: 16.
- **Speakers:**  
Prof Sivaji Chakravorti, Director, NIT Calicut.  
Dr. Biswendu Chatterjee, Associate Professor, Dept of Electrical Engineering, Jadavpur University  
Dr. Sovan Dalai, Professor, Associate Professor, Dept of Electrical Engineering, Jadavpur University  
Dr. Debangshu Dey, Assistant Professor, Dept of Electrical Engineering, Jadavpur University  
Mr. Arijit Basu Ray, MD, Neo Teletronix Pvt. Ltd.

## GRSS

- **Technical Programe:**
- An Educational visit to BOSE Institute, Kolkata on 15th February 2019. Number of people attended: 15.
- One Day Technical Lecture on MEMS: A future roadmap for mmW and sub-mmW Technologies. Mr. Ayan Karmakar, Scientist, SCL, ISRO, Chandigarh delivered the lecture on various applications of MEMS on 19 March, 2019. Number of people in attended: 18.

- One day Technical talk on “Remote Sensing of Atmospheric parameters” By Prof. Barun Ray Chaudhuri, Head of Physics Department, Presidency University on August 24, 2019. Number of people in attended: 15.
- **Workshop :**
- Faculty Development Program/ Summer School on Wave Propagation and Remote Sensing (WPRS 2019) during 14th July- 20th July 2019. No of Participants 35. Prof. Manojit Mitra, from IEST, Shibpur explained the very basic of Electromagnetic and Wave Propagation Engineering. Dr.Satyajit Chakrabarty, Scientist, SAMEER, Kolkata explained to the audience about various antennas and their characteristics used in the practical field. Prof. Ashik Paul, University of Calcutta enlightened us about the Satellite Communication. He also showed us the basic receiver to receive the satellite signal. Prof. Gopa Sen, Head, IRPEL, University of Calcutta taught us RADAR Engineering. In the next session, Prof. Barun Ray Chaudhuri, Presidency University talked about the Optical remote sensing. He also demonstrated us about the MODIS satellite data and ENVI software for remote sensing. In next day, Prof. Animesh Maitra, University of Calcutta explained the history of Remote Sensing and how it started in Kolkata. Then he talked about various aspects of atmospheric remote sensing. He also discussed the future scopes and funding areas of Remote Sensing and Propagation. Dr.Saurabh Das, Assistant Professor, IIT Indore spoke about the use of Machine Learning in remote sensing. He also discussed about the scope of big data analysis in the field of remote sensing. He also demonstrated WEKA software which is a basic tool for Machine Learning.
- Workshop on Deep Learning for computer Vision: A hands on Approach, ISI Kolkata on 2nd June 2019. Number of people attended: 25. Prof Jonathan H. Chan, Associate Professor, School of Information Technology, King Mongkut’s University, Thonburi, Thailand delivered lectures on the Deep Learning for Computer Vision and thereafter guided the whole group on the implementation of deep learning algorithms for recognition of objects from bench marked data base.
- Workshop on Machine Learning and Big Data Analytics: Application to Remote Sensing, jointly organized by Mater of Computer Application, Central University Sikkim, IEEE GRSS Kolkata Chapter and NIELIT, Gangtok,during19th -20th August 2019. Number of people attended: 38. In the workshop different lectures were delivered by Prof. A. Ghosh, ISI Kolkata, Prof. Susmita Ghosh, Jadavpur University, Kolkata, Prof. P.K. Nanda, SOA University, Bhubaneswar, Dr.Debadatta Swain, IIT Bhubaneswar, Dr Swastika Chakraborty, SMIT, Gangtok, Dr.Swarup Roy, Central University Sikkim, Gangtok, Debasrita Chakraborty , ISI Kolkata and Anwasha Law, ISI Kolkata broadly on machine learning, deep learning and their applications in remote sensing.
- International Workshop on Advanced Machine Learning Techniques for Climate Informatics, Chap Net 2019, during 4-6<sup>th</sup> Nov 2019.
- **DL Programe:**
- Distinguished Lecture Program by Prof. Gustau Camps-Vallson Physics-driven Machine Learning for Earth Observation Data Analysis, Center for soft Computing, ISI Kolkata on 2nd. July 2019. Number of people attended: 22
- **Outreach Programe:**
- IIT Patna outreach activity: “Remote sensing using Data analytics and internet of things “on 16th and 17th November 2019. Number of people attended: 40
- **IIT Kalyani** outreach activity: 7<sup>th</sup> International Conference on Advanced Computing, Networking and Informatics (ICACNI-2019) during 20-21<sup>st</sup> Dec 2019.

## PES

- **Technical Programe**
- Mr. Kaustuv Roy, IEF Manager Engg. Transmission Solutions, Siemens, Gurgaon has given a lecture on “Practical Aspects of Power Transmission and Power System Stability”at Seminar Hall, 1<sup>st</sup> Floor, Electrical Engg. Dept., Jadavpur University, Kolkata-32 on February 04, 2019. Participants: 65.
- The IEEE PES Kolkata Chapter in association with Electrical Engineering Department, NIT Durgapur organized a Technical Lecture on 'Recent advances in Transformer Technology' by Mr. Sanjay Kar Chowdhury, Chairman IEEE Kolkata Section at NIT Durgapur on 30/10/2019. Participants:65.

- Dr. Sovan Dalai, Associate Professor, Dept of Electrical Engineering, Jadavpur University has given a lecture on ‘Energy System: Generation, Utilization & Control’ at Electrical Engineering Department, Budge Budge Institute of Technology, on 21 February 2019. Participants: 155.
- Dr. Biswendu Chatterjee, Associate Professor, Dept of Electrical Engineering, Jadavpur University, has given a lecture on “Series Connection Technique of MOSFET in High Voltage Switching Application” at Seminar Room, Electrical Engineering Department, Jadavpur University, Kolkata 700032, on 12<sup>th</sup> April, 2019. Participants: 39.
- PES Kolkata Chapter organized a technical talk on Conductors and Insulators on 21<sup>st</sup> October, 2019, at NIELIT, Kolkata, West Bengal. The talk was delivered by Dr. Arpan Kumar Pradhan, Assistant Professor, Dept of Electrical Engineering, Jadavpur University. Number of attendees: 75.
- PES Kolkata Chapter organized A Staff Training Programme on “Conventional and non-conventional Energy” during 24<sup>th</sup> -29<sup>th</sup> June, 2019, at Electrical Engineering Department, Jadavpur University, Kolkata 700032. Number of attendees: 75.
- **Workshop:**
- PES Kolkata Chapter has organized a Matlab /Simulink Based Hands on Modeling Workshop on Electrical Machines (**TECHNOVATION - 2K19**) from 26<sup>th</sup>-27<sup>th</sup> March, 2019 at Pailan College of Technology and Management, Bengal Pailan Park, Sector 1 Phase 1 Amgachia Road, Joka, Kolkata, West Bengal 700104. Participants: 120.

**Speakers:**

- Dr. Sovan Dalai, Associate Professor, Dept of Electrical Engineering, Jadavpur University
- Mr. Susanta Ray, Assistant Professor, Dept of Electrical Engineering, Jadavpur University
- PES Kolkata Chapter has organized a workshop on Recent Trends in High Voltage Engineering from 26<sup>th</sup>-30<sup>th</sup> August, 2019 at Department of Electrical Engineering, NERIST Arunachal Pradesh. Participants: 120.

**Speakers:**

- Dr. Sovan Dalai, Associate Professor, Dept of Electrical Engineering, Jadavpur University.
- **Outreach activity**
- **Algomaniac of Convolution 2019**, organized by Students of the Department of Electrical Engineering Jadavpur University in Collaboration with PES Kolkata Chapter in collaboration with PES Kolkata Chapter, was a competition where students from various institutions in groups took part in coding on 9<sup>th</sup> March, 2019.
- **Women Activities:**
- IEEE PES Chapter, Kolkata Section organized a Technical Essay competition for female students (**WIEECOM 2019**) on 25<sup>th</sup> November, 2019 at Electrical Engineering Department, Jadavpur University. Theme of the activity: Alternative Source of Energy: Prospects, Issues and Challenges in Indian Scenario. Participants: 27.

## Photonics

- The IEEE Photonics Society Kolkata Chapter jointly with IEEE Calcutta University Student Branch organized 4<sup>th</sup> **Science and Technology Exhibition-2019 (STEX'19)** on 25<sup>th</sup> September 2019 at the Institute of Radio Physics and Electronics of the University of Calcutta. Students of different colleges and universities have participated to exhibit their models. Evaluations were done by senior Professors of different Institutes.
- **Technical Programme**
- Lecture Competition: Celebration of INTERNATIONAL DAY OF LIGHT:  
Theme: Impact of Light and Light based Technology on Society.  
Venue: A.K. Chowdhury Auditorium, CAS Building, University of Calcutta on 16-05-2019.
- **Outreach Programme:**
- The IEEE Photonics Society Kolkata Chapter organized a one day seminar on Photonics As Future of Technology (**PhotAFOT**) on 2<sup>nd</sup> Feb 2019 at SKFGI, Mankundu, Hooghly. There were more than 120 participants (IEEE members & non IEEE members) in the event. The Inaugural ceremony was started with lighting the lamp and finished with cordial welcome address by Director of SKFGI.
- The IEEE Photonics Society Calcutta Chapter organized an innovative outreach program on the ‘*Role of Photonics for betterment of Lives and Environments of Sundarbans*’. The livelihood of a large number of people in Sundarbans area depends on fishing, collecting honeys from dense forests, etc. -- an example of ecological processes. But, the ecological

balance is of great threat due to illegal poaching of animals, cutting of trees, pollution of river water, etc. Keeping these grave concerns in mind, an extempore speech competition was organized among the students and volunteers. There were 5(five) topics: (a) *Laser and Detector, save Sundarbans Tiger*, (b) *Photonics and Conservation of Sundarbans Mangroves*, (c) *Optical Fibers, pollution of Sundarbans rivers*, (d) *Do Photonics, catch sea-fish* and (e) *Solar Cell and Motor Vessel*.

- The IEEE Photonics Society Calcutta Chapter jointly with IEEE Calcutta University student branch organized an outreach program on 15th March, 2019 in Kakdwip Shishu Shikshayatan, South-24 Parganas to celebrate **National Science Day**. The aim of the program was to increase awareness and interest in science among the students of different schools and some other schools from neighboring areas. There were 140 students (Class IX – XII) from Kakdwip Shishu Shikshayatan and some other schools from neighboring areas. IEEE student branch and IEEE Photonics Society members demonstrated several Hands-on models on basic and applied sciences.

## Signal Processing

- **Technical Program:**
- Technical Lecture Session on “One day Seminar on IPR and Its Current Relevance” at Jadavpur University, Kolkata, India. Speech delivered by Mr. Meghdut Bhattacharya 4<sup>th</sup> Feb. 2019, 2:30-4:30 PM. Number of attendees: 36.
- SPS Kolkata Chapter organized A lecture meeting on "Gate Drive Technique of Series Operated MOSFET in High Voltage Application" on 21<sup>st</sup> August, 2019, 4:30-6:30 PM at Jadavpur University, Kolkata, India. Speaker: Dr. Biswendu Chatterjee. Number of attendees: 42

### **Industry Academia Collaboration**

- On 4<sup>th</sup> December 2019, 10:00 AM - 5:00 PM, SPS Kolkata Chapter organized a Programme on Development of Signal Processing Tools for Industry Standard Thermal Array Sensors at Electrical Engg. Dept, Jadavpur University. This program is a part of industry academia collaboration to provide solutions for industrial problems from academia. From M/s NTPL Pvt. LTD. Industry professionals were invited regarding their processing of data from thermal array sensor. Invitees from academia provides the possible solutions of signal processing tools that can be used for the processing of signals from Thermal Array sensors. Hands of experimentation and demonstration also done for the participants. Attendees 25.
- On 12<sup>th</sup> December 2019, 10:00 AM - 5:00 PM, SPS Kolkata Chapter organized a Programme on Signal Processing for Impulse fault Classification of Transformers at Electrical Engg. Dept, Jadavpur University. This program is a part of industry academia collaboration to provide solutions for industrial problems from academia. Distinguished academicians are invited to discuss different signal processing tools and machine learning algorithms for the development of indigenous system for the identification and classification of impulse faults of transformers. Attendees 27.

## SSCS

- **Technical Programme**
- On 9<sup>th</sup> February, 2019, IEEE SSCS Kolkata Section sponsored One Day Workshop on “Circuit Designing LT SPICE” was organised By Department of ECE, MCKV Institute of Engineering. Total number of Attendees: 33
- During 5th to 7th April, 2019, 3 -Days workshops on Arduino and IOT was organized by IMPS  
College of Engineering & Technology (Malda) & TEKNIK Industrial Classroom  
**INSTITUTE OF TECHNOLOGY**, Technically Sponsored by IEEE SSCS Kolkata Chapter.  
Total number of Attendees: 44
- On 2nd May, 2019, IEEE SSCS Kolkata Chapter sponsored One Day Seminar on “Fabrication of Advanced MOSFETs and Recent Trends in VLSI Industry” was organized By Department of ECE, MCKV Institute of Engineering. Total number of Attendees: 41
- On 26<sup>th</sup> July 2019, Technical Presentation Competition on Circuit Design was organized by Department of Electronics and Communication Engineering, RCC Institute of Information Technology and sponsored by IEEE Solid State Circuits Society (IEEE SSCS), Kolkata

Chapter & the Institution of Engineers (India) Student chapter of ECE Department. Total number of Attendees: 34.

- On 25<sup>th</sup> July, 2019, IEEE SSCS Kolkata Chapter in association with IEEE MSIT Student Branch jointly organized an Industry Academia Meet. The talk was on “An Overview of Analog VLSI Industry”. Speaker Mr. Priyanko Mitra from Sankalp Semiconductor focused his talk mainly on the design flow and the challenges in analog circuit design. Total number of Attendees: 58.

## IAS

### • **Technical Programe**

- On 27<sup>th</sup> March, 2019, IEEE IAS Kolkata Section organized a Technical Lecture Meeting at the Department of Electrical Engineering, Indian Institute of Engineering Science and Technology, Shibpur, on the topic “**Impact of Digital Control in Point-of-Load DC-DC Converters**”. The talk was delivered by Dr. Amit Singha, Assistant Professor under the DST Inspire Faculty Scheme in the Department of Electrical Engineering, IEST Shibpur, India. Total number of Attendees: 23
- On 8<sup>th</sup> July, 2019, IEEE IAS Kolkata Section organized a Technical Lecture Meeting at the Department of Electrical Engineering, the Indian Institute of Engineering Science and Technology, Shibpur, on the topic “**Electrical Cables – Latest Technology and Trends.**” The talk was delivered by Mr. Bikash Manik, Head – Business Development at Finolex J-Power. Total number of Attendees: 33.
- On 16th October, 2019 IEEE IAS Kolkata Section organized a Technical Lecture Meeting at the Electrical Engineering Department Seminar Hall of the Indian Institute of Engineering Science and Technology, Shibpur, on the topic “**Birth of Power Theory in Alternating Current System.**” The talk was delivered by Prof. Gautam Bandyopadhyay, Professor and ex-HoD, Electrical Engineering Department, IEST Shibpur. The talk was attended by 39 participants, including six IEEE members.
- On 30<sup>th</sup> October, 2019 IEEE IAS Kolkata Section organized a Technical Lecture Meeting at the Electrical Engineering Department Seminar Hall of the Indian Institute of Engineering Science and Technology, Shibpur, on the topic “**Small Electric Drives in Diesel Electric Locomotives.**” The talk was presented by Dr. Suvarun Dalapati, Assistant Professor, Department of Electrical Engineering, IEST Shibpur. The talk describes the applications of small electric-motor-inverter sets in diesel-electric locomotives and then goes on to discuss the design of such a set for one such application, based on the given specifications from Indian Railways. The talk was attended by 30 participants, including four IEEE Members.
- On 6th November, 2019 IEEE IAS Kolkata Section organized a Technical Lecture Meeting at the Seminar Hall of the Department of Electrical Engineering at Indian Institute of Engineering Science and Technology, Shibpur, on the topic “**PLC and its Application in Industry.**” The talk was presented by Mr. Rupankar Chakrabarti, ex-DGM, SAIL. The talk focused on the PLC applications in industry. Starting from the basics of PLC, the talk discusses its advantages, followed by some industrial applications in the field of drives and automation. The talk was attended by 18 participants, including four IEEE Members.
- On 17th December, 2019 IEEE IAS Kolkata Section organized a Technical Lecture Meeting at the Seminar Hall of the Department of Electrical Engineering at Indian Institute of Engineering Science and Technology, Shibpur, on the topic “**Recent Development On Solid State Transformer (SST) & Inverters For Renewable Energy Applications.**” The talk was delivered by Dr. Avik Bhattacharya, Assistant Professor, Department of Electrical Engineering, IIT Roorkee. The talk was attended by 27 participants, including 8 IEEE Members.

## **B.3Formation of New Student Branch**

### **Newly formed Student Branches (SB) / Student Branch Chapters (SBC) 2019**

<b>SI No.</b>	<b>Unit Name</b>	<b>Geo-code</b>	<b>Formation date</b>

1	University of Engineering and Management - Kolkata Women in Engineering Student Branch Affinity Group	SBA11417	22 Jan 2019
2	Kalinga Inst of Industrial Technology Power & Energy Society Student Branch Chapter	SBC15681B	8 Mar 2019
3	Calcutta Univ Of-Univ C of Tech Microwave Theory and Techniques Society Student Branch Chapter	SBC28561C	19 Mar 2019
4	Dr B C Roy Engineering College - DURGAPUR Student Branch	STB11473	26 Mar 2019
5	University of Engineering and Management - Kolkata Antennas and Propagation Society Student Branch Chapter	SBC11417	27 Mar 2019
6	Jadavpur University Computer Society Student Branch Chapter	SBC06831B	3 April 2019
7	Gauhati Univ/Assam Engrg College Student Branch	STB11484	11 April 2019
8	National Institute of Technology-Agartalato student branch	STB11469	12 April 2019
9	University of Engineering and Management - Kolkata Communications Society Student Branch Chapter	SBC11417A	26 April 2019
10	Institute Of Engineering & Management Antennas and Propagation Society Student Branch Chapter	SBC14301F	26 April 2019
11	GIET University Student Branch	STB11514	26 April 2019
12	Brainware University Student Branch	STB11544	17 July 2019
13	National Institute of Technology-Agartala Computer Society Student Branch Chapter	SBC11469X	18 July 2019
14	Narula Institute of Technology IEEE Geoscience and Remote Sensing Society Student Branch Chapter	SBC14018A	20 Sept 2019
15	Biju Pattanaik Univ Of Tech Student Branch	STB11562	27 Sept 2019
16	National Inst of Technology - Silchar Microwave Theory and Techniques Society Student Branch Chapter	SBC03701D	9 Nov 2019
17	Jadavpur University Industry Applications Society Student Branch Chapter	SBC06831C	9 Dec 2019

#### **B.4 Affinity Group Activities**

**Total Affinity Groups: 03**

##### **WIE**

- IEEE Women in Engineering International Leadership Summit-2019 (ILS – 2019) was held at Sterlings Mac Hotel, Bangalore, India, during August 30 - 31, 2019. I, Prof. Sudipta Chatterjee,



Chairperson of IEEE Women in Engineering (WIE), Kolkata Section, got the opportunity to attend the Summit.

- IEEE WIE, Kolkata Section, handed over Cash Awards and Certificates of Appreciation at “2<sup>nd</sup> National Conference on Information, Photonics and Communication (IPC 2019)” held at B.P. Poddar Institute of Management and Technology, Kolkata, during 1/2/2019 to 3/2/2019 to motivate young researchers, especially students and research scholars. The awards were dedicated for the Poster Session.
- IEEE WIE Kolkata Section handed over WIE Best Student/Research Scholar Paper Award: (Rs.2000/- Cash Prize and Certificate of Appreciation)  
Title of the Paper: Implementation of L-Shaped Dielectric Double Metal Dual Gate TFET towards Improved Performance Characteristics and Reduced Ambipolarity  
Recipient: Sutanni Bhowmick, Jadavpur University, Kolkata
- IEEE WIE Kolkata Section handed over WIE Student/Research Scholar Paper Award:(Rs.1000/- Cash Prize and Certificate of Appreciation)  
Title of the Paper: Performance Study of some Recent Optimization Techniques for Energy Minimization in Surveillance Video Synopsis Framework  
Recipient: Abir Bhattacharya, IIIT Bhubaneswar, Odisha
- The World Bank's South Asia region and social development units under South Asia gender and energy facility, with support of energy sector management assistance program, organized the First Regional Conference of the Women in Power Sector Professional Network - WePOWER during February 20 – 21, 2019 at Himalaya Hotel, Kathmandu, Nepal to promote female practitioners in the energy sector. IEEE WIE Kolkata Section nominated two final year girl students, Sreya Sarkar and Priya Singh from the discipline “Power Engineering” from Jadavpur University to attend the conference as Indian student delegates.
- IEEE Women in Engineering (WIE) Kolkata Section successfully organized the WIE Track on June 09, 2019, at Biswa Bangla Convention Center, Kolkata, under the prestigious IEEE Region 10 Symposium, TENSYP 2019. A Panel Discussion on “Are women still suffering from visibility problem at workplace?” was organized under this track. Approximately hundred attendees were present in this event.
- IEEE WIE, Kolkata Section, handed over Cash Awards and Certificates of Appreciation at “International Conference on Computers and Devices for Communication (CODEC 2019)” held at Hotel Taj Gateway, Kolkata, during 19/12/2019 to 20/12/2019 to motivate young researchers, especially students and research scholars. The awards were dedicated for the Poster Session which was held on December 20, 2019.
- IEEE WIE Kolkata Section handed over the WIE Best Student/Research Scholar Paper Award: (Rs.2000/- Cash Prize and Certificate of Appreciation)  
Title of the Paper: Numerical Investigation of Gate Field Plate AlGaIn/GaN HEMT with Multi-Recessed Buffer.Recipient: Neha, Deen Dayal Upadhyay College, University of Delhi
- IEEE WIE Kolkata Section handed over the WIE Student/Research Scholar Paper Award: (Rs.1000/- Cash Prize and Certificate of Appreciation)  
Title of the Paper: Design of 8-stage RF to DC Converter for Energy Harvesting Applications  
Recipient: Qudsia Masood, Muffakham Jah College of Eng. And Tech., Hyderabad.
- IEEE Women in Engineering (WIE) Student Branch Affinity Group at National Institute of Technology Silchar was formed under IEEE Calcutta Section, India on 9th July, 2018. The inauguration of the society held on 15th February, 2019 at Guest House auditorium, NIT Silchar. This ceremony was jointly funded by IEEE WIE Kolkata section and TEQIP NIT Silchar.

## **B.5 Student Activity:**

### **IEM SB Report:**

- **International Coding Challenge** was organized in the month of February. IEEE Xtreme type coding completion was organized to develop coding skills and build new software's. **Dated: 23<sup>rd</sup> & 24<sup>th</sup> February, 2019 No. of Attendees: 676 (Across the Globe).**
- **Robotics Competition** was organized during the month of February. Autonomous bots which can perform certain tasks was organized. **Dated: 25<sup>th</sup> February, 2019. No. of Attendees: 88 (Team of 4 members, 22 Teams).**

- **Poster Presentation Competition** was organized during the month of March, 2019. IEEE Standard Poster presentation competition was organized to develop public speaking and technical poster making skills **Dated: 15<sup>th</sup> March, 2019 No. of Attendees: 48 (Team of 2 members, 24 Teams)**.
- **UEMCOS 2019** was held in the month of April 2019 (25<sup>th</sup>-27<sup>th</sup> April, 2019) IEEE Standard papers were published, IEEE Poster Competition was organized and Workshop on Sensors & Transducers were also organized. The Seminar, Workshop and Paper Presentation event was bannered as **1<sup>st</sup> International Conference on Ubiquitous and Emerging Concepts on Sensors & Transducers. In association with IEEE Kolkata Section, CSIR, WBSU.** The workshop was attended by the IEEE Students Branch members. **No. of Attendees: 430.**
- **UEMGREEN 2019** is organized in the month of September, 2019 (25<sup>th</sup> -27<sup>th</sup> September, 2019) in association with IEEE Kolkata Section and bannered as **1<sup>st</sup> International Conference on ubiquitous Energy management for Green Energy.** Along with this a workshop is also organized on Green energy Management. No. of Attendees: 378
- **Cyber Security Workshop** was organized in the month of September, 2019. Industry personnel conducted the workshop. This workshop was done in collaboration with Indian School of Ethical Hacking and IEEE Student branch organized this Industry interaction. All the IEEE members participated in the Industry interaction. **No. of Attendees: 65**

### **BIT Mesra Student Branch Report:**

- IEEE organized workshops in different domains that include programming and algorithm, machine learning and web development. A number of students from all the branches come in these workshops. All these workshops are based on practical implementation.
- IEEE organized a number of events throughout the semester and even during the semester breaks. The events include Mega Project, Lost Code, Da Vinci Code. There is a remarkable participation from the students of all the branches. It is also made sure that the students give their feedback after every event. Taking the feedback into consideration the club tries to improve these events the next time. The winners are given certificates and exciting goodies to encourage them.

### **Brainware Group of Institutions SB Report:**

- A five days National Workshop on Data Science using R Programming was organized from 29<sup>th</sup> January to 2<sup>nd</sup> February, 2019, by Department of Computer Science & Engineering of Brainware Group of Institutions in collaboration with IEEE Student Branch-Brainware Group of Institutions (STB11407), Technically Co-sponsored by Didactics IT Solutions at our college campus.
- A 30 hours Industrial training on Advanced Java with J2EE Framework was organized by Department of Computer Science & Engineering of Brainware Group of Institutions in collaboration with IEEE Student Branch-Brainware Group of Institutions (STB11407) on our college campus. The training was from February-June, 2019. The Technical Advisor is Mr. Tanmoy Das, Associate Cognizant Technology Solutions India Private Limited (CTS), Kolkata. In this program there were total 41 students participated in the industrial training.

### **Calcutta University SB Report:**

- On 21<sup>st</sup> February 2019, IEEE Calcutta University Student Branch has organized a technical lecture on the topic of "A Journey from Science to technology" by Prof. Krishnendu Sengupta, Professor of Indian Association for the Cultivation of Science (IACS), Kolkata at Institute of Radio Physics and Electronics (IRPE), University College of Sc. and Tech., CU. The Programme was aimed to discuss about the advancement in research about Dirac physics, graphene and other superconductor materials. Participants: 31.
- An outreach program on behalf of National Science Day has been organized by IEEE Photonics Society Kolkata Chapter, jointly with IEEE Calcutta University Student Branch at Kakdwip Shishu Shikshayatan High School (H. S.), Kakdwip, WB, on 15<sup>th</sup> March 2019. The purpose of the event was creating science and technology awareness among young little students through technical lectures, quiz competition and demonstration of scientific projects and models. The Programme was quite successful with around 140 numbers of participants from class IX-XII.

## **Heritage Institute of Technology, Student Branch Report:**

- The IEEE EDS Center of Excellence, HITK organized a 2-DAY Autonomous Robotics Workshop for the students of The Heritage School. It was attended by 14 students who were assisted by 7 IEEE student volunteers. In this workshop, the students learnt about robotics using a "hands-on" approach. The goal was to encourage them to consider Electrical and Electronics Engineering as a career and mostly understand that technology can be exciting. The Center was visited by Dr. M. K. Radhakrishnan, Vice President, IEEE Electron Device Society (Regions and Chapters) on September, 3, 2019. He interacted with the students of the branch chapter as well as some beneficiaries of the Center.
- An invited talk was delivered by Dr. Nabarun Bhattacharyya, Senior Director & Centre Head, Centre for Development of Advanced Computing (C-DAC), Kolkata, on 08.02.2019. The talk was organized by the Department of ECE, the IEEE ED HIT Student Branch Chapter and the IEEE EDS Center of Excellence. Our speaker delighted the listeners with the current scenario of 'Sensors for Agriculture and Environment' and the possible R&D in this field.
- In continuation of the Lord of the Tracks Robotics Workshop Series, the third workshop of the series, Lord of the tracks 3.0 was held on 09.02.2019. This autonomous robot design workshop had 24 participants. The participants were guided by IEEE EDS Student Volunteers. The workshop was organized by the IEEE ED HIT Student Branch Chapter and the IEEE EDS Center of Excellence.
- An invited talk was delivered by Prof. Sujit Biswas is from the Department of Electrical Engineering, Jadavpur University, Kolkata, on 08.02.2019. He is the past Chairman of the IEEE Kolkata Section. The talk was organized by the Department of ECE, the IEEE ED HIT Student Branch Chapter and the IEEE EDS Center of Excellence. A very insightful delivery on the topic 'Practical Problems in High Frequency Applications of Passive Components in Electronics' was very well received by the participants.
- Heritage Utsav Techfest 2019 was celebrated in the first week of April 2019. The IEEE EDS Center of Excellence HITK and the IEEE HITK Student Branch organized a plethora of events viz. Techtonic, Circuitricks, Game of Roads, Drift-o drop, League of Bots, Crossroads, innovation Challenge and Electro sprint. The events ranged from quizzing, competing with robots, solving puzzles, building circuits to presenting innovative ideas and concepts. The events spanned from 01.04.2019 to 03.04.2019.
- A Distinguished Lecture Program on September 03, 2019 at Heritage Institute of Technology by Dr. M. K. Radhakrishnan, Founder Director & Chief Technical Consultant, NanoRel Technical Consultants, Singapore and Vice President, IEEE Electron Device Society (Regions and Chapters). The lecture was attended by 112 students.
- A Lecture Program was organized on September 24, 2019 with Dr. Avik Bhattacharya from IIT Roorkee as the speaker. He spoke about 'Solid State Transformer'. He delivered an in depth account of the emerging technology of SST that has the advantages of low volume, low weight and fault isolation. The lecture session was attended by 28 students.
- A Lecture Program was organized on November 05, 2019 at Heritage Institute of Technology. In the first session we had the proud privilege to have with us IEEE EDS DL Prof. Subir Kumar Sarkar, Professor, Department of ETCE, Jadavpur University who delivered a lecture on 'Transient Electronics: a Brief Study of the Materials and Devices' His lecture was relevant in terms of current evolving technology as well as global environmental wellbeing.

## **Narula Institute of Technology SB Report:**

- IEEE CASS KOLKATA TECHNICAL PAPER CONTEST, 2019 was jointly organized by IEEE CAS Kolkata Section & IEEE CAS Student Branch Chapter in association with Electronics and Communication Engineering Department Narula Institute of Technology on 3rd May, 2019 at the Institute.
- IEEE CAS Kolkata Section, Electrical Engineering Department of Jadavpur University and IEEE CAS Student Branch of Narula Institute of Technology have jointly organized a Technical lecture Program "Sensors for Everyday Life" by Dr. Anindya Nag of DGUT-CNAM Institute, Dongguan University of Technology, China at Venue: Seminar Room, Electrical Engineering Department, Jadavpur University on Monday, 19th August 2019, 4PM.
- Technical Lecture Program was organized by IEEE CAS Student Branch Chapter, Electronics and Communication Engineering Department, Narula Institute of Technology & IEEE CAS Kolkata

Section on 18th December, 2019 from 3:00P.M.-5:00P.M. at Seminar Hall, Narula Institute of Technology.

### NIT Agartala SB Report:

- Two professional/technical lectures had been arranged in the program entitled as ‘Technical Discussion on Computational Engineering’. Prof. (Dr.) Nikhil R. Pal, Fellow IEEE had been invited as chief guest.
- A professional lecture series had been arranged by department of Electrical Engineering on 2<sup>nd</sup> December 2019. Prof. Tripta Thakur, Department of Electrical Engineering, MANIT Bhopal has given the presentations on “Distribution Network Planning for Smart Grid” and “Digitalization New Business Model in Electric Sector”.
- IEEE NIT Agartala student branch has collaborated with Unnat Bharath Abhiyan (UBA), an MHRD scheme for rural development and visited five nearby villages (Aishya Bari, Begrambari, Bishrambari, Badramishipbari, and Kamanmura kami) to identify the technological laggings and possible solutions for that.

### NIT Durgapur SB Report:

#	Event Name	Speakers	Code	Date	Venue	Count
1	Matlab Mastery	Animesh Datta, ECE Monsij Biswal, ECE	MM	29/01/19 - 05/02/19	LG 21,EC 31 EC Seminar	150+
2	Online Tech Quiz Collab: Quizinc	Subhayan Akhuli, BT Rohan Choudhary, CE	OTQ	01/02/19 - 02/02/09	Online	200+
3	Art of Scientific Writing	Prof. Aniruddha Chandra, ECE Aniq Ur Rahman, ECE	AOSW	31/01/19		
4	Game Engineering (Collab: GLUG)	Abhilash Majumder Mr.Khagendra Kumar Mr. Mihir Solanki, Student Ambassador Unity Technologies	GE	07/03/19	Albert Einstein Auditorium NAB	150+
5	Google Cloud JAM	Mr. Abhishek Nandy Mr. Rishabh Biswas Ms. Debasree Chanda Mrs. Sumitra Bagchi	JAM	14/03/19	Albert Einstein Auditorium NAB	120+
6	Internship Bootcamp 2.0	Mehendi Basu,CSE Shubham Kumar Das, CHE Animesh Datta,ECE Sourav Dutta, BT Prateek Chatterjee, EE Abhishek Singh, CSE Anumoy Ganguly, MME Monsij Biswal, ECE Arka Bera	IBC 2.0	20/08/19 - 21/09/19	LG 22 MAB	150+
7	Self Driving Workshop 2.0	Animesh Datta, ECE Monsij Biswal, ECE Abhishek Singh, CSE	SDV 2.0	31/08/19 - 01/09/19	Albert Einstein Auditorium NAB	140+
8	IntelliSys: Machine Learning Symposium	Mr.Shivam Abhilash Dr. Fakhruul Yousuff	IMLS	19/09/19	Albert Einstein Auditorium NAB	150+

## PART C - OTHERS

### C.1 Relationship with National Societies

- The relationship with National Societies like The Institution of Engineers (India), The Institute of Electronics & Telecommunication Engineers India, Computer Society of India is cordial.

### C.3 Problems to be Anticipated

- ✓ Involvement of members in section activities not as per expectation
- ✓ Limited participation of section volunteers in national and international committees

- ✓ Limited Funding for attending conference
- ✓ Number of members from industry is low
- ✓ Student member retention is low and some student branches become inactive - explore possibility of re-opening of student branch through incentive schemes . However new student branches are formed and new members are added every year

#### **C.4 Best Practices of your Section**

- ✓ Active student branches
- ✓ Active participation of local students in IEEE activities

### **PART D – GOALS AND PLANS**

#### **D.1 Goals**

- Retention of existing members through membership development Programs like elevation to Senior Member grade, recognizing the efforts of active members by awarding them citations or personalized plaques.
- Increasing activities of section by arranging more lecture meetings, not necessarily technical but also on public affairs, professional activities, educational trips for students to nearby industries.
- To spread the message of IEEE within Kolkata Section jurisdiction.

#### **D.2 Implementation Plans**

- To organize one day Program involving all Branch Counsellors from all student branches.
- To organize meeting with other out stationed chapters and Bhubaneswar Subsection
- To organize some special memorial lecture in each year.