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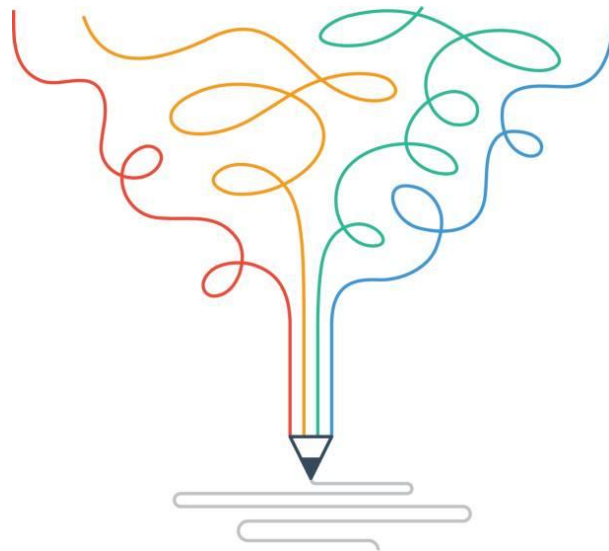
IEEE KOLKATA SECTION

SECRETARY'S REPORT 2023

PART A
SECTION SUMMARY

A.1 EXECUTIVE SUMMARY

Kolkata Section Information and Events

Total no. of administrative meeting:10 (AGM+ 9 ExCom)
Total no. of technical events: 20
Total no. of achievements: 31

Administrative Events:
1st ExCom:
Date: 30th January'2023
Venue: Central Computer Lab., 1st Floor, E.E. Department, Jadavpur University,
Agenda:
1. Confirmation of the minutes of 8th meeting of EXECOM 2022 of IEEE Kolkata Section
2. To introduce the new members of the EXECOM 2023
3. To consider the formation of the sub-Committees of the Section for 2023
4. To draw up activity calendar for 2023
5. Signatory Change of IEEE Kolkata Section Bank Account
6. To consider requests for technical co-sponsorship
7. To consider requests for financial sponsorship
8. IEEE Kolkata Section Social Meet 2023
9. To nominate members to IEEE IC.
10. To incorporate invitee(s) in the Section EXECOM
11. To consider the amount of imprest cash to be drawn by the Section/Chapter /Affinity Group
Office Bearers.
12. Any other matter with the permission of the Chair
Total no. of attendees: 31

2nd ExCom:
Date: 20th March'2023
Venue: Central Computer Lab., 1st Floor, E.E. Department, Jadavpur University,
Agenda:
1. Confirmation of the minutes of 1st meeting of EXECOM 2023 of IEEE Kolkata Section
2. Reporting on 2023 R10 Meeting
3. Reporting on the IEEE Kolkata Section Social Meet 2023
4. Sir J.C Bose Milestone Lecture by IEEE Kolkata Section
5. Visit to IEEE President, 10 July 2023
6. Reporting by the Sub Committee Chairs of IEEE Kolkata Section
7. To consider requests for technical co-sponsorship

8. To consider requests for financial sponsorship
9. EA Project application for the R 10 Fund
10. Joining of SC congress 2023 by Section Chair
11. Opening of bank account for SBs
12. Any other matter with the permission of the Chair
Total no. of attendees: 22

3rd ExCom:
Date: 16th May'2023
Venue: Central Computer Lab., 1st Floor, E.E. Department, Jadavpur University,
Agenda:
1. Confirmation of the minutes of 2nd meeting of EXECOM 2023 of IEEE Kolkata Section
2. Reporting on the activities of IEEE Kolkata Section
3. To consider requests for technical co-sponsorship
4. To consider requests for financial sponsorship
5. Reporting by the Sub Committee Chairs of IEEE Kolkata Section
6. CESC Milestone Lecture by IEEE Kolkata Section
7. Visit to IEEE President, 10 July 2023
8. Senior Membership Camp by IEEE Kolkata Section
9. Any other matter with the permission of the Chair
Total no. of attendees: 24

4th ExCom:
Date: 20th July'2023
Venue: Central Computer Lab., 1st Floor, E.E. Department, Jadavpur University,
Agenda:
1. Confirmation of the minutes of 3rd meeting of EXECOM 2023 of IEEE Kolkata Section
2. Reporting on the activities of IEEE Kolkata Section
3. Complaint regarding IEEE Papers for MESIICON 2022, ICORT 2023 and ICCECE 2023
4. To consider requests for technical co-sponsorship
5. To consider requests for financial sponsorship
6. C.V. Raman Milestone Program
7. Adoption of policy for awarding active students volunteers
8. Discussions on possible Sidrapong Hydel Power Station Milestone at Darjeeling under IEEE Kolkata Section
9. Any other matter with the permission of the Chair.
Total no. of attendees: 20

5th ExCom:
Date: 19th September'2023
Venue: Central Computer Lab., 1st Floor, E.E. Department, Jadavpur University,
Agenda:
1. Confirmation of the minutes of 4th meeting of EXECOM 2023 of IEEE Kolkata Section
2. Reporting on the activities of IEEE Kolkata Section
3. To consider requests for technical co-sponsorship

4. To consider requests for financial sponsorship
5. C.V. Raman Milestone Program by IEEE Kolkata Section
6. IEEE Student Congress of IEEE Kolkata Section
7. Venue and Date of 45th Annual General Meeting of the IEEE Kolkata Section
8. Proposal of CALCON 2024
9. Discussion on organizing 2025 R10 Flagship Conferences (TENCON, TENSYMP, R10-HTC)
10. Discussions on opening of IEEE Student Branch under IEEE Kolkata Section
11. Regarding submission of funding proposal by any SB or SBC
12. Formation of Nomination Committee for SLATE 2024
13. Consideration of the nomination for R10 Director Elect-2025-26 position
14. Any other matter with the permission of the Chair.
Total no. of attendees: 21

6th ExCom:
Date: 3rd November'2023
Venue: Central Computer Lab., 1st Floor, E.E. Department, Jadavpur University,
Agenda:
1. Confirmation of the minutes of 5th meeting of EXECOM 2023 of IEEE Kolkata Section
2. To consider requests for technical co-sponsorship
3. To consider requests for financial sponsorship
4. Discussion on IEEE Student Congress of IEEE Kolkata Section
5. Discussion on CALCON - 2024
6. Venue and Date of 45th Annual General Meeting of the IEEE Kolkata Section
7. Reporting of PACE learning centre and future direction.
8. Any other matter with the permission of the Chair.
Total no. of attendees: 15

7th ExCom:
Date: 22nd November'2023
Venue: Central Computer Lab., 1st Floor, E.E. Department, Jadavpur University,
Agenda:
1. Confirmation of the minutes of 6th meeting of EXECOM 2023 of IEEE Kolkata Section
2. To consider requests for technical co-sponsorship
3. To consider requests for financial sponsorship
4. Discussion on IEEE Student Congress of IEEE Kolkata Section
5. Discussion on CALCON - 2024
6. Venue and Date of 45th Annual General Meeting of the IEEE Kolkata Section
7. IEEE Bhubaneswar Subsection, Section Elevation Petition
8. Revised service agreement between GIEEE and IEEE Sections (India)
9. Discussion on draft SLATE 2024 of the IEEE Kolkata Section
10. Any other matter with the permission of the Chair.
Total no. of attendees: 21

8th ExCom:
Date: 11th December'2023

Venue: Central Computer Lab., 1st Floor, E.E. Department, Jadavpur University,

Agenda:

1. Confirmation of the minutes of 7th meeting of EXECOM 2023 of IEEE Kolkata Section
2. To consider requests for technical co-sponsorship
3. To consider requests for financial sponsorship
4. Reporting on IEEE Student Congress of IEEE Kolkata Section
5. Discussion on CALCON- 2024
6. Discussion on IEEE Bhubaneswar Subsection, Section Elevation Petition
7. Draft SLATE-2024 the IEEE Kolkata Section
8. Nominations for IEEE Kolkata Section Award 2023
9. Any other matter with the permission of the Chair.

Total no. of attendees: 14

9th ExCom:

Date: 13th January'2024

Venue: Central Computer Lab., 1st Floor, E.E. Department, Jadavpur University,

Agenda:

1.Confirmation of the minutes of 8th meeting of EXECOM 2023 of IEEE Kolkata Section
2. To consider requests for technical co-sponsorship
3. To consider requests for financial sponsorship
4. Finalization of SLATE-2024 the IEEE Kolkata Section
5. Finalization of Section Awards
6. Discussion & Adoption Secretary's Report for 2023
7. Discussion & Adoption of Audited Accounts for 2023
8. Discussion on CALCON-2024
9. Any other matter with the permission of the Chair.

Total no. of attendees: 17

45th AGM:

Date: 18th January'2024

Venue: Eastern Metropolitan Club, A-73, Purba Diganta, Santoshpur, Kolkata, West Bengal 700075 (Hall 1A Emerald, Gate No.2)

Agenda:

1. Confirmation of the minutes of the 44th AGM held on Saturday, January 14, 2023.
2. Address by the Section Chair.
3. Adoption of Annual Report for the year 2023 as presented by the Section Secretary.
4. Adoption of Audited Accounts for the year 2023 as presented by the Section Treasurer.
5. Confirmation of SLATE for the year 2024.
6. Address by the incoming Section Chair.
7. Appointment of the Auditor for the year 2024.
8. Any other matter with the permission of the Chair.

Total no. of attendees:

Technical Events:

- **International Conference on "Energy Systems, Drives, Power Electronics, Measurement and Sensors (ESDPEMS -2023) Co - Sponsored by IEEE Kolkata Section - Power and Energy Society and Industry Application Society**

The Department of Electrical Engineering of Narula Institute of Technology has successfully organized the International Conference on "Energy Systems, Drives, Power Electronics, Measurement and Sensors (ESDPEMS -2023)" from 16th to 17th February 2023 in hybrid mode in the Institute. A total of 74 papers were received from reputed organizations like IIT Kanpur, Jadavpur University, NIT Durgapur, University of Calcutta, Kalyani Government Engineering College and more. After peer review 53 papers were selected for this conference. These papers were scheduled for presentation in seven different Tracks over the period of two days. A BEST PAPER AWARD was provided for each track. Total registration for the conference was 97 and around 129 Faculty, Researchers and students attended the Conference. Seven renowned speakers from the world over and both from academics and industries presented their keynote addresses during the conference.

- **IEEE Kolkata Section Membership Drive programs**

On 24th March 2023, IEEE Kolkata Section started off the Membership Development initiative by organizing a Membership Drive at Jadavpur University. Membership benefits were discussed by Dr. Mousiki Kar, Membership Development Committee Chair of Kolkata Section. Motivational talk for the opening of Student Branch and Student Branch Chapters under Kolkata Section was delivered by Professor Iti Saha Misra, IEEE Kolkata Section Chair. Professor Iti Saha Misra, attended several inaugural sessions for the opening of Student Branch and Student Branch Chapters during March to April 2023. In each program she gave motivational speeches to inspire students to join IEEE and to become active volunteers to understand the value of IEEE in building their bright career. Apart from these 19 other programs were organized across West Bengal with active participation and facilitation by Dr. Koushik Dutta belonging to the IEEE Kolkata Section Membership Development Committee.

- **3rd IEEE INTERNATIONAL CONFERENCE ON RANGE TECHNOLOGY, IEEE ICORT-2023**

3rd IEEE INTERNATIONAL CONFERENCE ON RANGE TECHNOLOGY, IEEE ICORT-2023 was held from 23rd Feb -25th Feb 2023 in hybrid mode at ITR, Chandipur, Balasore, Odisha. There were 355 IEEE members and 175 guest members attendance in the conference. The objective of the conference was to offer a conducive platform for the brightest minds to interact, to exchange innovations, best practices, and emerging trends in Range technology

in particular and pertinent engineering and science disciplines, in general. IEEE ICORT-2023 is exclusively conducted for the professionals of Test Ranges, associates, and scientists & researchers working in similar fields around the globe. It is one platform, which comprehensively addresses all technical aspects of test range with its five tracks, viz., Electro-Optics, Radar, Telemetry, Allied, and Range Systems. It provides the opportunity for a golden handshake between R&D, industry, and academics which may lead to synergy in range technology and create a roadmap for future research and marketing. As a sequel to the 2nd ICORT held in 2021, the third event is also technically co-sponsored by the IEEE-Kolkata section with active support from the IEEE Bhubaneswar subsection and IEEE Communications and Computer Societies Joint Chapter, Balasore.

- **IEEE Kolkata Section's Social Meet 2023**

IEEE Kolkata Section Social Meet 2023 was held in Bonolata Farm, Tardah-Kheyadah Road, Panshatapara, Tardaha Kapasati, West Bengal 743502 on Sunday, 26th February 2023. Social Meet 2023 was attended by the 45 participants, which includes IEEE Life members, Senior members and many student members across the various parts of the Section. The social Meet was a great way of bringing people together and forming an emotional bonding with the section. Moreover, it gave us a chance to speak our minds to unwind and relax. Everybody enjoyed physical activities during the event held in the nearby place of Kolkata with natural beauty. Altogether the Social Meet added a special charm and refreshment of the attendees and a successful post pandemic event of the IEEE Kolkata Section under the drive of Chairpersonship of Prof. Iti Saha Misra. Networking, chatting, singing and dancing along with delicious foods were the main attractions of the social meeting.

- **IEEE WIE Kolkata Section celebrated International Women's Day**

On 08th March 2023, IEEE WIE Kolkata Section celebrated International Women's Day with a two-part event. The first event was held offline at IEM Kolkata on 6th March 2023 and the second event was held online on 8th March 2023. The theme of this year's celebration was "Colors of Equity". Prof. Konika Das (Bhattacharya), Head of the Department, Electrical Engineering Department, IIEST Shibpur and Director of EICC Projects Private Limited was the invited speaker on 6th March 2023. The offline event was well attended by budding engineers, young professionals and academicians and saw participation of members of both genders.

The online meet on 8th March 2023 saw a spontaneous participation of all the members. The meet ended with a determined resolution to enthusiastically follow the vision and mission of IEEE WIE Kolkata Section i.e., to promote women engineers and scientists while encouraging young girls to choose career in science and engineering.

- **Celebrating IEEE India Council Day by Kolkata Section: two-day (one day? Check) hands-on workshop on VEGA Microprocessor ecosystem during 17-18 April, 2023**

IEEE Kolkata Section held the industry - Academia program at the Electrical Engineering Department, Jadavpur University by organizing a two-day hands-on workshop on VEGA Microprocessor ecosystem. A team of 3-scientists from CDAC (Center for Development and Advanced Computing, Trivandrum, Govt. of India) provided a hands-on training on the indigenous VEGA Microprocessor boards. There were 56 participants (40 IEEE members + 16 Non-IEEE members) attended the workshop successfully.

- **IEEE Kolkata Section's Sir JC Bose Milestone Program**

It was a mesmerizing experience in organizing the IEEE Kolkata Section's Sir J. C. Bose Milestone Lecture on April 10, 2023 at Dr. Triguna Sen Auditorium, Jadavpur University, well attended by almost 200 audiences, include academicians, industry professionals, scientists and students from various Institute across the state of West Bengal. Several luminaries in the field of science and technology joined in celebrating the legacy of Acharya Jagadish Chandra Bose and pay homage to his immense contribution towards humanity.

The milestone lecture was delivered by Dr. Goutam Chattopadhyay, Senior Scientist, NASA's Jet Propulsion Laboratory, USA on the topic, NASA Millimeter-Wave and Terahertz Space Instruments: 'Following Sir J. C. Bose's Footstep'

At the onset Prof. Iti Saha Misra, Chair, IEEE Kolkata Section addressed and welcomed the august gathering highlighting Sir J. C. Bose's life and immense research work across the fields of Engineering, Physics, Biology. An insightful recount of the historical relevance of the Milestone Lecture was delivered by Prof. Sivaji Chakravorti, Professor, Department of Electrical Engineering, Jadavpur University and former Chair of IEEE Kolkata Section. This was followed by a deliberation by Prof. Parul Chakrabarti, Coordinator, J. C. Bose Science Heritage Museum, Acharya Bhaban. She highlighted the various path breaking contributions of the revered polymath and the ongoing efforts in conserving the scientific set-ups in conjunction with the Government of India.

Dr. Chattopadhyay highlighted how NASA has been building millimeter-wave and terahertz space instruments for decades inspired by the work of legendary Prof. J. C. Bose who worked on them in the late nineteenth and early twentieth century. In recent years, space agencies across the globe have been actively looking into ultracompact instruments to fly on small satellite platforms to have multiple flight missions with innovative way of getting science data by using CubeSats – which are shoe-box size satellites – and SmallSats

as useable platforms to supplement main missions as well as using them for standalone scientific missions.

Dr. Chattopadhyay presented an overview of the state of the millimeter-wave and terahertz instrumentation development for CubeSat/SmallSat platforms which was being carried out at the Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California, USA, with National Aeronautics and Space Administration. At the end of the lecture, the speaker engaged in a spirited discussion and question answer session with the attendees.

Dr. Mousiki Kar, Kolkata Section's EC member did fantastic anchoring for the event. The milestone lecture successfully paid a special tribute to Sir J.C. Bose through a worthy celebration of his life and work in the event.

- **IEEE Kolkata Section celebrate World Telecommunication and Information Society Day**

A Half-day Technical Seminar jointly organized by the IEEE Kolkata Section, IEEE India Council and E.T.C.E Department, Jadavpur University celebrated World Telecommunication and Information Society Day on 29th May 2023.

Chair, Prof. Iti Saha Misra with her inaugural address set the tune of celebrating World's Telecommunication Day focusing the wide scale adoption of Industry 4.0 and Internet of Things. Two eminent speakers Mr. Chanchal Chakrabarty (CEO of ATM Towers India (A Subsidiary of ATM A/s, Demark)) and Dr. Tapan Misra (Founding Director and Chief Scientist of a Start up SISIR RADAR Pvt. Ltd. Former Director of Space Application Centre and the Physical Research Laboratory in ISRO) enlighten the session with their lecturers.

The 5G will catalyze digital economy growth by ushering industry 4.0 to enterprise efficiency and productivity. Technology will provide the user with smarter and safer solutions for cities, citizens and businesses. 5G can bring transformational impact in various areas such as Agriculture, Education, Healthcare, Safety & Security, significantly accelerating the socio-economic development of the country. With the progressive rollout of the 5G network and services over the next few years, 5G solutions will transform customer experience, enhance business performance, and positively impact people.

- **IEEE seminar on 'Humanitarian Technology for Sustainable Development'**

The IEEE Kolkata Section SIGHT Group in collaboration with IEEE Kolkata Section and IEEE EDS Center of Excellence, Heritage Institute of Technology organized a seminar on the topic, 'Humanitarian Technology for Sustainable Development' on May 31, 2023, at Heritage Institute of Technology, Kolkata. The event was attended by 196 academicians, professionals, and students across the state of West Bengal.

The event began with Prof. Iti Saha Misra, Chair, IEEE Kolkata Section and Prof. Jawad Siddiqui, Chair, IEEE AP-S SIGHT presenting their past SIGHT projects. They encouraged the participants to think of simple technology-based solutions for society. Members of IEEE Kolkata Section SIGHT Group, Ms. Sudeshna Choudhury from TCS, India and Dr. Susanta Ray from Jadavpur University discussed various interesting scalable technology based humanitarian projects. Dr. Mousiki Kar, Chair, IEEE Kolkata Section SIGHT Group, concluded the event by emphasizing how students could make a difference by learning about sustainable development and implementing SIGHT group projects for their local communities.

- **IEEE Kolkata Section: Event on Climate Change-The Earth Exchange Program**

EarthXChange jointly organized by IEEE SB JU, IEEE CS Chapter Kolkata, IEEE Kolkata Section, IIC Jadavpur University 05th June 2023 at 10 AM- 6 PM, K. P. Basu Hall and TeQIP. EarthXChange, a unique event aimed to address the urgent need for action on climate change. The event brought together industry professionals, students, and participants interested in finding sustainable solutions to combat climate change. More than 150 participants attended the program. There was total registration: 156 among which 72 were IEEE members and 84 were non-IEEE guests. EarthXChange served as a reminder that the responsibility to address climate change rests with everyone.

- **IEEE Kolkata Section: Outreach Activities at Siliguri Institute of Technology**

On June 27, 2023, Chair, Prof. Iti Saha Misra conducted an outreach program at SIT to spread the IEEE awareness activities at remote places where IEEE Kolkata Section does not have sufficient membership. She provided a ppt presentation with various activities generally held under IEEE Kolkata Section and the benefit of student community to be in touch with current technology development happened worldwide. The outreach program was attended by the 10 higher officials of the SIT.

- **Outreach Activities at PACE Learning Center (PLC):**

It was a lovely experience of visiting PACE Learning Center (PLC), sub-urban area of Kolkata, accompanied by Mrs. Deepa Biswas Willingham, PLC Board Chair, and Mr. Jayanta Chatterji, PLC President, Prof. Mostafa Mortezaie, EAC, IEEE R6, IEEE Region Pre-College Activities Chair, Dr. Mousiki Kar, EC member and STEM Ambassador, Prof. Iti Saha Misra, Chair IEEE Kolkata Section on 21 Sep 2023. This centre provides quality education for under privileged girls.

- **IEEE Kolkata Section jointly with IEEE PES, Kolkata, IEEE WIE Affinity Group, Kolkata and IEEE India Council organized an awareness program of Net Zero Transition**

India's long-term goal of reaching net-zero by 2070. However, in a big country like India it is really a challenging task. IEEE Kolkata Section jointly with IEEE PES, Kolkata, IEEE WIE Affinity Group, Kolkata and IEEE India Council has taken initiative in creating

the awareness of this Net Zero Transition. As a part of that the first event was scheduled on 1st July, 2023 from 5:00 PM in virtual mode.

The meeting details are:
Topic: NOCE-1
Time: Jul 1, 2023 05:00 PM India
Join Zoom Meeting
https://us02web.zoom.us/j/83419512313?pwd=UHJjL3FrN1FzcTJvVko4NUl1VkRKUT09

- **Symposium on CHATGPT: Opportunities & Challenges for Education Organized by IEEE COMSOC Kolkata Chapter and IEEE Kolkata Section in association IEEE BPPIMT Student Branch**

IEEE COMSOC Kolkata Chapter and IEEE Kolkata Section in association IEEE BPPIMT Student Branch organized a Symposium on CHATGPT: Opportunities & Challenges for Education on 3rd July 2023 at B. P. Poddar Institute of Management and Technology. Speakers of the event were Prof. Chiranjib Bhattacharyya, Department of Computer Science and Automation, IISC Bangalore and Prof. Swagatam Das, Electronics and Communication Sciences Unit, ISI Kolkata. This event was conducted in hybrid mode.

- **Climate Change and Net-zero Transition: A Roadmap for the Electric Utility Industry Organized by IEEE Kolkata Section**

There is an unprecedented level of awareness of climate change and the role of decarbonization in enabling environmental sustainability moving forward. In particular, there has been a major focus placed on the carbon produced through electricity generation, as it is responsible for roughly 30% of emissions globally, per the United States Environmental Protection Agency (EPA). There are many ways to approach the net-zero transition. A portfolio of six programs is proposed to help the electric utility industry reduce their carbon footprint. Energy Efficiency Applications Carbon Capture Systems Renewable Energy Integration Hydrogen and Storage Solutions Cross-Border Energy Transfer Advanced Nuclear Technologies. This lecture addresses the available and emerging technology options and the supporting policies necessary for the successful implementation of these programs.

- **Net Zero awareness series- NOCE-1 – IEEE Kolkata Section**

A successful sustainable ecosystem is a possibility only when we have partnership and collaboration between all stakeholders across academics, business, civil societies, and organizations. The first session on the Net Zero awareness series that was launched in IEEE Kolkata Section along with IEEE PES Kolkata Chapter and WIE India Council in

collaboration with Center for Global Affairs and Public Policies had representations across the ecosystem on 1st July 2023.

- **CESC Milestone Program delivered by IEEE President Prof. Saifur Rahaman on 10th July 2023**

IEEE Kolkata Section is honoured by IEEE President visit on 10th of July to deliver the CESE Milestone Program of IEEE Kolkata Section, at Dr. Triguna Sen Auditorium, Jadavpur University. Prof. SAIFUR RAHMAN, Director, Virginia Tech Advanced Research Institute, USA, and 2023 IEEE President & CEO delivered a lecture on the topic, Climate Change and Net-zero Transition organized by IEEE Kolkata Section. The milestone program was well attended by more than 100 IEEE and non-IEEE members followed by an evening dinner arrangement in a restaurant. On the same day in the morning session Prof. Saifur Rahaman visited the CESC main office, Victoria House, where the Milestone plaque is laid. IEEE President was accompanied by Mr. Srikanth Chandrasekharan, Director Foundational Technologies Practice Lead and IEEE Standard Association. Prof. Rahaman had useful interactive session on "Technologists' Role in Addressing Climate Sustainability" with CESC personnel. Mr. Rabi Chowdhury, MD Generation, CESC has generously helped us in conducting this session. Mr. Debashis Banerjee MD (Distribution) CESC shared on Green Initiative in CESC, Mr. Snehasis Samaddar , VP Generation -OS , illuminated on Reduction of carbon footprint in CESC's way, Mr N.S. Mandal , Member Secretary ERPC, has spoken about the power scenarios in Eastern India and efforts are given for reduction of carbon footprint. Mr. Gautam Roy, ED (HR and A), CESC has conducted the entire program so nicely. Prof. Iti Saha Misra, Prof. Sujit Biswas, Prof. Sivaji Chakravorti, Dr. Atanu Kundu and Dr. Tridibesh Nag have attended the program from IEEE Kolkata Section.

- **Sir C V RAMAN MILESTONE LECTURE by Prof. P. K. Basu**

On 22 nd Nov 2023, Prof. P.K. Basu a veteran researcher on semiconductor has delivered Sir C.V. Raman Milestone program at the Seminar Hall of EE Department, Jadavpur University on the topic " Si Photonics Interconnects for high speed data Centre". The milestone lecture, was tutorial in nature, described the principle of spontaneous and stimulated Raman Scattering, followed by an outline of long-haul fibre optic communication network. The use of Fibre Raman laser in long haul optical network is then mentioned. The main theme of the talk, the optical interconnect, has the same architecture as the long-haul link, and is used for computer- to-computer, board-to-board and chip-to-chip connections. Such interconnects possess higher speed and lower power consumption than metal interconnects. However, a truly monolithic Si based optical transceiver by using standard CMOS technology connecting different servers used by data service providers cannot be realized as Si lasers do not exist. Si Raman laser, the first such device, have large size. At present, hybrid systems using III-V lasers bonded to Si chips are employed by different companies like Google,

Meta, etc. The talk mentions the fundamental limitations of Si and Si Raman lasers and current deployment of hybrid electronics-photonics integration. Recent work on direct gap GeSn alloy in realizing lasers and other devices on Si are then discussed highlighting areas of research by the speaker and his group. Finally, the talk points out the limitation of photonics and advent of plasmonics as the future ICs, including work on GeSn.

- **Student Congress 2023 – IEEE Kolkata Section**

IEEE Kolkata Section Student Congress 2023, held at Jadavpur University on November 29th, on the theme of "Empowering Innovation: Bridging the Gap Between Theory and Practice," emerged as a highly successful platform for interaction, knowledge sharing, and innovative ideation. There were more than 230 online registrations for the event, but because of the examination in many engineering colleges, finally 150 attendees from various Institutes/engineering colleges have joined physically. The program was started with the inaugural address by the Chair in which she explained the motivation and necessity of Student Congress under IEEE Kolkata Section and also to continue the program each year for the benefit of student community and to build better bonding with section's leaders.

The notable events of the student congress 2023 were the presentation by distinguished section leaders Prof. Sivaji Chakravorti and Prof. Debotosh Guha on two very interesting and thoughtful topics "Structured Experimentation" and "Why not you" respectively, igniting young mind for innovation. Dr. John Jose delivered fantastic motivational speech for the students to join IEEE and also moderated a panel discussion on the theme involving industry personnel from Qualcomm -Mr. Sumit Goswami, Ericson- Mr. Indranil Sanyal,IBM- Mr. Shaon Mazumder, CDAC- Mr. Biswajit Saha, India Internet Foundation – Mr. Anand Raje. The very experienced panellist shared their way for innovation and creative ideation augmenting the value of the congress for the students.

A thought-provoking debate was organized by JUSB on 'Accountability in the Utilization of AI by Major Corporations', discussed on the ethical considerations of AI. Participants engaged in intelligent arguments, contributing to a rich discourse on this evolving technology. Sudesna Chowdhuty from TCS and Kolkata Section EC member nicely presented the issues of sustainability which is also a focus area of IEEE at present.

The event concluded with a felicitation ceremony, recognizing outstanding individuals and student branches for their noteworthy contributions, emphasizing the significance of continuous innovation and dedication. The success of the Congress can be attributed to the collaborative efforts of the IEEE Kolkata Section's Chair Prof. Iti Saha Misra, Student Activitity Chair Prof. Sarbani Roy and the SAC Team, Jadavpur University Student Branch and all others participating Student Branches, active participation of IEEE members, students, and professionals, reflecting the vibrancy and innovation within the IEEE Kolkata Section.

- **Dare to Dream Talk by IEEE Kolkata Section's WIE**

The Dare to Dream talk series, conducted by IEEE Kolkata Section and IEEE Women in Engineering (WIE) Kolkata Affinity Group is a talk series on pioneer Indian Women in STEM, who started their career more than 50 years ago. The goal of this series is to make aware and inspire today's women with examples from the history which speaks of the determination, grit and focus they had to pursue their dream irrespective of the undoubtedly more difficult ecosystem they had compared to today's world. The 7th Episode of the talk was organized on 16 th December 2023 and it focused on the pioneering women in Medicine and was titled, "The Pioneering Female Doctors of India: Anandibai Gopalrao Joshi, Kadambini Bose Ganguly, Rukhmabai". The talk was delivered by Prof. Sujit K. Biswas, Dean (Academic) of St. Thomas College of Engineering and Technology, Kolkata and formerly with EE Department, Jadavpur University. The talk focused on the stories of struggles, overcoming societal prejudices, support of family etc. in the journey of these women to become first Indian female doctor of western medicine or first Indian female doctors educated in India. Prof. Nabanita Das, retd. Professor of the Advanced Computing and Microelectronics Unit of Indian Statistical Institute was the Session Chair. The event was attended by Prof. Sankar K. Pal, Prof. P. K. Basu, Prof. Susanta Sen, Prof. Basabi Chakraborty etc. Participants had come from Intel Labs, USA, IIT Madras, IPU Japan, IRPE, Calcutta University, Jadavpur University, IIEST Shibpur, IEM, Techno India, St. Thomas College of Engineering and Technology, KIIT University, TCS, Global Foundries etc. The thunderous applause after the talk proved the success of the event.

Achievements:

Prof. Bhaskar Gupta

- Started an Indo-Belgium collaborative project with the initiative of the respective governments on CHANNEL MODELLING INCORPORATING RECONFIGURABLE ANTENNA EFFECT FOR 5G APPLICATIONS.

- Served on the International Steering Committee, delivered Keynote Speech and acted as the Chief of Jury for Best Paper Award in 22nd Mediterranean Microwave Symposium 2023 held at Sousse, Tunisia.

Prof. Subhransu Ranjan Samantaray

- Elected as Fellow, Indian National Academy of Engineering (INAE).
- Joined IEEE Task Force on Big-Data Analytics for Synchro-Waveform Measurements.

Prof. Sivaji Chakravorti

- Elected as the President of the West Bengal Academy of Science and Technology in 2023.

Prof. Sushmita Mitra

- Elected as the Fellow of the Indian Academy of Sciences.

Prof. Ashok Kumar Tripathy

- Life Senior Member IEEE from 1.1.24.
- Continuing as a member of steering committee on National mission on Power electronics for 10 years.
- Member National expert panel of DST.
- Member Energy committee INAE.
- Member State advisory council OERC.

Prof. (Dr.) Siddhartha Bhattacharyya

- Delivered a keynote in the 30th International Conference on Neural Information Processing (ICONIP2023) held in Changsha, China during November 20-23, 2023.
- Chaired a keynote session in the conference.

Prof. Subhamoy Chakraborti

- Tie-up of Kolkata Section and Cyber Security Center of Excellence (CSCoE) of Govt of West Bengal in conducting nation-wide hackathon.

- Setting up hands-on industry-academia IoT workshop from Industry Committee of Kolkata Section, in partnership with Comsoc, R10 Industry relations committee, at Jadavpur University with participation from students of multiple institutions.
- Attending Comsoc Regional Chapter Chair Congress and presenting the need and steps being taken to bridge industry and academia.

Prof. ITI Saha Misra

- Invited as Guest of Honour to the inaugural function of I3CS-2023, held on 16th March 2023, NEHU, Shillong. She addressed the student community in the pre-conference event I3CS -2023 and delivered inaugural address as GoH on I3CS -2023. Chaired the session for Keynote speech delivered by Padmashri Sankar Pal.
- Attended the R10 meeting at Ho Chi Minh City, Vietnam during Mar 3-4 2023 as Kolkata Section Primary Delegate

- Attended the Section Congress 2023 at Ottawa, Canada during Aug 11-13 2023 as Kolkata Section Primary Delegate
- Delivered Sir J.C Bose Memorial Lecture on 29th Sep 2023 at the J.C. Bose Memorial Trust and Museum
- Delivered Invited Lecture on 41st GISFI Meeting and International Workshop held at Visweniketan Technical University, Mumbai on 17 Nov 2023.
- Delivered invited talk at CODEC 2023 and Chaired a Technical session on 5G and 6G Communication during 14 and 15 Dec 2023.

Sanjay Kar Chowdhury

- R10 Outstanding Volunteer award
- MGA Outstanding Achievement Award
- Appointed as Industry Engagement Liaison officer in MGA for 2024 to 2025

Sudeshna Choudhury

- Sudeshna was a Keynote Speaker in IEEE R10 HTC 2023 (Humanitarian Technology Conference) on 18th October in Marwadi University, Rajkot. The theme of the conference, "Artificial Intelligence and Smart Technologies for Humanity" was to draw special attention to the societal expectation on humanitarian technologies' ability to provide practical and lasting solutions.

Dr. Sambit Bakshi

- Dr. Sambit Bakshi has been selected as a Distinguished Lecturer of IEEE Systems Council (SysC) for the year 2023-2025

Prof. Hare Krishna Ratha

- Winner of IEEE R10 Ethics Champion

Prof. Ashish Ghosh

- Has been appointed as the Director of IIIT Bhubaneswar

Prof. Tripti Swarnkar

- Has been appointed as Professor in NIT Raipur

Dr. Mousiki Kar

- Appointed as Project Evaluator for IEEE HTB/SIGHT Project Grant 2023
- Appointed as IEEE Pre-University Education Coordinating Committee (PECC) STEM Grant 2023 reviewer
- Selected as IEEE TryEngineering STEM Champion 2023

IEEE Kolkata Section Awards for 2023

Outstanding Volunteer Award
Shri Hare Krishna Ratha
Dr. Ankita Pramanik

Outstanding Student Volunteer Award
Mr. Sainik Khaddar
Mr. Saptarshi Pani

Award for Significant Growth in Membership in a Unit
Name
IEEE AP-MTTs Joint Chapter of Kolkata Section

Lifetime Achievement Award
Prof. Sivaji Chakravorti

A.2 List of Section Officer and Executive Committee Members SLATE 2023 of IEEE Kolkata Section

Office Bearers:

Chair: Iti Saha Misra

Chair-Elect: Suparna Kar Chowdhury

Vice-Chair: Bhaskar Gupta

Secretary: Atanu Kundu

Treasurer: Tridibesh Nag

Immediate Past Chair: Sushmita Mitra

Members:

1. Sayan Chatterjee
2. Sovan Dalai
3. Sarmistha Neogy
4. Susanta Ray
5. Sudipta Chattopadhyay
6. Sudeshna Choudhury
7. Mousiki Kar
8. Subhadip Basu
9. Arpan Pradhan
10. Chandi Pani
11. Sambit Bakshi
12. John Jose
13. Biswajit Chakraborty

Chapter Chairs

1. Chair AP-MTTS Chapter — Koushik Dutta
2. Chair CAS Chapter — Saradindu Panda
3. Chair CIS Chapter — Sidhharrta Bhattacharya
4. Chair Computer Chapter — Sarbani Roy
5. Chair COMSOC Chapter — Subhamoy Chakraborti
6. Chair COMSOC Computer Jt. Society Chapter — H. K. Ratha
7. Chair CSS-IMS Chapter — Kaushik Das Sharma
8. Chair DEIS Chapter — Chiranjib Koley
9. Chair EDS Chapter — Manash Chanda
10. Chair GRSS Chapter — Ashish Ghosh
11. Chair IAS Chapter — Shib Sankar Saha
12. Chair Nanotechnology Council Chapter — T.R. Lenka
13. Chair PES Chapter — Susanta Ray

14. Chair Photonics Chapter   Shampa Guin
15. Chair PES Jt Section Chapter   Srinivas Karanki
16. Chair SIGHT Affinity Group   Mousiki Kar
17. Chair SSC Chapter   Swarnil Roy
18. Chair Signal Processing Chapter   Debangshu Dey
19. Chair WIE Affinity Group   Ankita Pramanik
20. Chair YP Affinity Group   Himadri Sekhar Dutta
21. Chair LM Affinity Group   Salil Sanyal

Subsection Chairs

1. Chair Bhubaneswar Sub-Section   S. Samantaray
2. Chair Guwahati Sub-Section   Sukumar Nandi
3. Chair Patna Sub-Section   Amit Kumar Singh
4. Chair Rourkela Sub-Section   Kamalakanta Mahapatra
5. Chair Silchar Sub-Section   Fazal Talukdar

Sub Committees of the Section

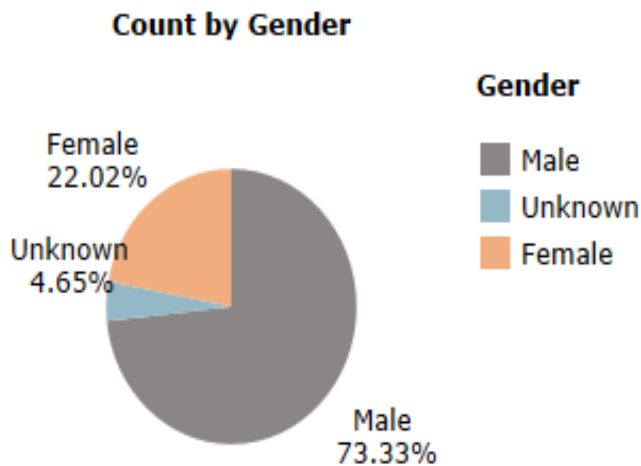| Sub Committee	Chairperson	Members
Industry and Professional Activity	John Jose and Sudipta Chattopadhyay	Sudeshna Choudhury, Sambit Bakshi, Subhadip Basu
Membership Development	Mousiki Kar	T.R. Lenka, Kousik Dutta, Sambit Baksi
Educational activities	Arpan Pradhan	Susanta Roy, Sovan Dolai, Sambit Baksi
Student Activities	Sarbani Roy	Sarmistha Neogy, Biswajit Chakraborty, Sayan Chatterjee, Kousik Dutta
Newsletter and other reports	Chandi Pani	Tridibesh Nag, Subhamoy Chakraborti, Biswadip Chakraborty
Awards	Sujit K Biswas	Sushmita Mitra, Bhaskar Gupta
Website	Atanu Kundu	Susanta Roy, Sayan Chatterjee
Conference Sponsorship	Susanta Roy	Salil Kumar Sanyal, Suparna Kar Chowdhury, Tridibesh Nag, Sovan Dalai
Industry-Academia Dialog Forum	Subhamoy Chakraborti	Sudeshna Chodhury, Debangshu Dey
Life Member	Salil Kumar Sanyal	Sujit Biswas, Arijit Basu Roy, Mita Nasipuri

PART B
ORGANIZATIONAL ACTIVITIES

B.1 Membership Details

Section	Grade	Member Count
Kolkata Section	Associate Member	32
	Fellow	9
	Graduate Student Member	896
	Life Fellow	3
	Life Member	7
	Life Senior	30
	Member	1,581
	Senior Member	597
	Student Member	1,535
	Total	4,690
	Affiliate	15
	Total	4,705

It was 3843 in the previous year. Membership Growth of the Section is 22.37% in the year 2023.

Total new Student Branch/Student Branch Chapter opened in 2023 is 44.

Count by Gender

Gender
- Male
- Unknown
- Female

Female 22.02%
Unknown 4.65%
Male 73.33%

B.2. Chapter

Total Active Chapters: 17

SUMMARY OF ACTIVITIES OF CHAPTERS

IEEE INDUSTRY APPLICATION SOCIETY (IAS), KOLKATA CHAPTER

- **Technical Lecture on the topic "SMART Power Flow Controllers – A Necessity for Future Power Grid**

"24th January 2023, A Technical Lecture on the topic "SMART Power Flow Controllers – A Necessity for Future Power Grid" was jointly organized by IEEE-IAS Kolkata Chapter and the Department of Electrical Engg., Indian Institute of Engineering Science and Technology, Shibpur on 24th January 2023 at the Seminar Hall, EE Dept., IIEST Shibpur. The Lecture, delivered by Dr. Kalyan Sen, President & CTO, Sen Engineering Solutions, Inc, USA was focused on the overview of the power flow controllers, future trends and the power industry's pressing need for the most economical ways to transfer bulk power along a desired path. In his lecture, he mentioned identifying the underutilized transmission lines and harnessing their dormant capacities to increase power flow capacities of the lines instead of building new transmission lines, which is a lengthy and costly process. Design and commission of several power electronics-based FACTS controllers was also elaborated in the lecture. Total 65 participants are participated in this lecturer session.

- **Conference on "Energy Systems, Drives, Power Electronics, Measurement and Sensors (ESDPEMS -2023)"**

International Conference on "Energy Systems, Drives, Power Electronics, Measurement and Sensors (ESDPEMS -2023)" from 16th to 17th February 2023 in hybrid mode organized by Narula Institute of Technology and Co - Sponsored by IEEE Kolkata Section - Power and Energy Society and Industry Application Society. 74 papers were received for the Conference. The conference has received the papers from reputed organizations like IIT Kanpur, Jadavpur University, NIT Durgapur, University of Calcutta, Kalyani Government Engineering college and more. After peer review 53 paper were selected for this conference. These papers were scheduled for presentation in seven different Tracks over the period of two days. A BEST PAPER AWARDS was provided for each track. Prof. Ambarnath Banerji, Advisor IEEE PES Student Chapter of NiT and Dr. Bansari Deb Majumder, HOD-EE Dept, NiT were the Convener and Joint Convener of the Conference respectively. Total registration for the conference was 97 and around 129 Faculty, Researchers and students attended the Conference.

- **One-day Hands-on Workshop on "Hardware Development and Testing of Switching Power Supplies".**

The IEEE-IAS Kolkata Chapter and IEEE WIE Kolkata Section Affinity Group jointly conducted a One-day Hands-on Workshop on "Hardware Development and Testing of Switching Power Supplies" at Siliguri Govt. Polytechnic on 03.07.2023.

The workshop included technical talks on recent trends in Power Converter usage in Renewable Energy Applications and Electric Vehicles (EV). The participating students of Electrical and Electronics Engineering disciplines got hands-on training from Power Electronics researchers on hardware development and testing of switching power supplies. Total 94 students participated in the program.

- **One-day Hands-on Workshop on "Hardware Development and Testing of Switching Power Supplies".**

The IEEE-IAS Kolkata Chapter and IEEE WIE Kolkata Section Affinity Group jointly conducted a One-day Hands-on Workshop on "Hardware Development and Testing of Switching Power Supplies" at Islampur Govt. Polytechnic on 04.07.2023.

The workshop included technical talks on recent trends in Power Converter usage in Renewable Energy Applications and Electric Vehicles (EV). The participating students of Electrical and Electronics Engineering disciplines got hands-on training from Power Electronics researchers on hardware development and testing of switching power supplies.

The program was financially sponsored by IEEE Region 10 Educational Activities Committee and IEEE Kolkata Section. Total 120 students participated in the session.

- **Industrial visit to BMC Electroplast Pvt. Ltd, Kolkata, W.B.**

The IEEE Industry Application Society (IAS), Kolkata Chapter organized an "Industrial visit to BMC Electroplast Pvt. Ltd, Kolkata, W.B." for the undergraduate (3rd and 4th Year) students of Electrical Engineering as per the following schedule with ten (10) students in each batch.

Date:	1st Batch:	18th Nov., 2023 (Saturday)
	2nd Batch:	25th Nov., 2023 (Saturday)

IEEE COMSOC CHAPTER

- **Organize next series of Ideathon**

23rd March 2023, Department of CSE, JU in association with IEEE ComSoc Kolkata Chapter organize next series of Ideathon of The Anonymizer Hackathon at Jadavpur University,

Amitava Dey Memorial Seminar Hall. The session was highly engaging with a special focus on the areas where Anonymizer could prove to be highly beneficial - healthcare, agriculture (emphasis on crop farming), protection of PII in lawsuits, transport, image Anonymizer, etc.

- **International Symposium on Innovation and Entrepreneurship (ISIE-23)**

26-27th March 2023, IEEE ComSoc Kolkata Chapter organized The International Symposium on Innovation and Entrepreneurship (ISIE-23) at National Institute of Technology Silchar. This kind of event incubated with the aim to be a flagship in the field of Innovation and Entrepreneurship collaborating various institutes, industries, funding agencies, policy makers and startups/ entrepreneurs. The symposium shall leverage the resources and aims to develop a peer focused based network for the growth and development of upcoming entrepreneurs, especially in the Eastern and North Eastern Region of the country. The theme of the symposium was Self-Resilience and Sustainability with focus on industry academia linkage for better opportunities. There were several eminent speakers from India and abroad who have shared their valuable insights on technical, entrepreneurial and sustainability issues towards transformation into a self- reliant nation. The topics covered areas such as design in innovation, Artificial Intelligence, Translational Research leading to innovations, decision making etc. There was a panel discussion on a theme of 'Decoding Self Reliant Nation: Role of Innovation and Entrepreneurship'. IEEE ComSoc Kolkata Chapter associated with the symposium as technical partne along with AMTRON, Assam and Assam Stratup. Mr. Subhamoy Chakraborti, Chairman, IEEE ComSoc Kolkata Chapter graced the inaugural ceremony and also shared his insightful deliberation on innovation and entrepreneurship during the panel discussion.

- **Technical talk of the IEEE ComSoc Chapter - Guwahati (Kolkata Section) and Guwahati Subsection**

The talk was attended by faculty members from the department of Electronics and Electrical Engineering (EEE), Computer Science and Engineering (CSE), and research scholars of EEE, CSE, and Physics from the institutes across the IEEE Guwahati subsection. Around 50 people attended the talk and actively interacted with the speaker.

During the talk, Dr. Pavithran talked about a class of quantum error correcting codes called surface codes and efficient methods to encode more information in these codes which was called as generalized surface codes. He also discussed a technique to benchmark the performance of generalized surface codes under the error model described by quantum erasures. He concluded the talk by introducing a software tool called SQUAB which can be used for the analysis of generalized surface codes. All the attendees benefitted immensely through this interaction. This talk is organized on 2nd August 20203.

- **Technical tutorial talk of the IEEE ComSoc Chapter - Guwahati (Kolkata Section) and Guwahati Subsection**

The technical tutorial talk of the IEEE ComSoc Chapter - Guwahati (Kolkata Section) was delivered physically by Dr. Abhishek K. Gupta, Assistant Professor, IIT Kanpur was organised on 10th November 2023.. The talk was attended by faculty members from the department of Electronics and Electrical Engineering (EEE), Computer Science and Engineering (CSE), and research scholars of EEE from the institutes across the IEEE Guwahati subsection. Around 50 people attended the talk and actively interacted with the speaker.

The talk was extremely informative discussing about 5G and beyond communication aspects including the requirements, use cases, channel models, challenges, and open research problems of THz networks and other 6G enablers. Total 55 participants are participated in the session.

Activity Report of IEEE ComSoc Chapter - Guwahati (Kolkata Section)

Administrative Activities:
- Total Number of Administrative Meetings (2): Induction of new members into EC / Executive committee meeting / Annual general meeting
- Dates of the meetings: 19-05-2023 / 07-12-2023
- Number of Attendees: 15 / 5
- Brief Description: The brief description of administrative activities is presented below.

Activity: Induction of new members into EC

The details of the meeting are as follows:

Date: May 19, 2023 (Friday)

Time: 4:00 PM (IST)

Mode: Hybrid

The meeting was chaired by Prof. Sukumar Nandi, Chair, IEEE ComSoc Chapter-Guwahati (Kolkata Section).

The following agenda items were discussed:

1. History related to formation and approval of the IEEE ComSoc chapter-Guwahati.

2. The official inaugural date for IEEE ComSoc Chapter - Guwahati (Kolkata Section) was discussed and decided that it will be held on 23/05/2023.

3. It was discussed to invite Prof. Thomas L. Marzetta for a distinguished lecture (online talk) on the inaugural day (23/05/2023) to deliver an online talk.

4. The expansion of the executive committee was discussed and the plans and activities going forward were discussed.

5. To be specific, activities such as seminars, workshops, distinguished lectures, women in engineering, and outreaching the engineering universities were discussed and planned to conduct by November 2023.

6. The objectives of the planned activities were also discussed such as:

(i) Empowering, exposure, knowledge transfer, and providing importance of engineering, latest technologies, and their social impact by outreaching the institutes.

(ii) To prepare research scholars to acquire skills and competencies in the cutting-edge technologies of the future through tutorials, hands-on sessions, and workshops.

(iii) To understand the significance and directions of different research aspects and the latest state-of-the-art through distinguished lectures and seminars.

The meeting ended with thanks to the chair.

Members present: Sukumar Nandi, Salil Kashyap, Kuntal Deka, Sonali Chouhan, Kalpana Deka, Manoj B. R., Arun Aloshious, Arghyadip Roy, Rakesh Matam, Sudip Biswas, Amitava Nag, Gangesh Gunjan, and Faisal Zeeshan.

Newly inducted members into EC: Sunit Kumar Nandi, Rakesh Matam, Sudip Biswas, Amitava Nag, Kalpana Dhaka

Activity: Executive committee meeting

The Executive Committee Meeting of the IEEE ComSoc Chapter - Guwahati (Kolkata Section) was conducted in a hybrid mode. The details of the talk are as follows:

Date: December 7, 2023 (Thursday)

Time: 5.00 PM – 5.45 PM (IST)

Mode: Hybrid

Venue: EEE Seminar Room, IIT Guwahati (Offline) and MS Teams (Online)

Attendees: Prof. Sukumar Nandi, Dr. Salil Kashyap, Dr. Kuntal Deka, Dr. Kalpana Dhaka, and Dr. Manoj B. R.

The following items were discussed:

1. Confirmation of minutes: Confirmed

2. Discussion of the activities that have been conducted so far: We plan to conduct two more talks/webinars in the coming weeks. We decided to conduct these talks before 20 Dec 2023.

3. Discussed selection of election officer: Dr. Sudarshan Mukherjee/Dr. Ribhu, EEE. We decided to send an email to all ComSoc members regarding the election and accepting new nominations by the election officer.

4. Discussion on slate: We decided to continue with the current team members.

5. Plan for the next annual general meeting (AGM): We have decided to keep the AGM tentatively on 18 Dec 2023. We further planned to arrange for a dinner on this day and circulate a form to check the availability of all the ComSoc members.

6. We also discussed how to prepare the activity report and the expenditure report to be presented during the AGM. The slate should also be presented during the AGM.

7. We also discussed that we need to communicate that Dec 15–Dec 18, 2024 ANTS will be conducted by IIT Guwahati as agreed by the ANTS steering committee.

Professional Activities:

- Total number of professional lectures/seminars/workshops/technical activities: 5
- Dates of the events: 23-05-2023 / 02-08-2023 / 10-11-2023 / 14-12-2023 / 19-12-2023
- Number of Attendees: 50 / 50 / 50 / 26 / 14
- Brief description: The brief description of professional activities is presented below.

Activity: Inaugural talk by Prof. Thomas Marzetta

The Inaugural talk of the IEEE ComSoc Chapter - Guwahati (Kolkata Section) was delivered online by Prof. Thomas L. Marzetta, Distinguished Industry Professor, NYU Tandon School of Engineering and Director, NYU WIRELESS. The details of the talk are as follows:

Title: Physics-Based Communication Theory

Venue: Seminar room, EEE dept., IIT Guwahati

Time: 5.30 pm to 6.30 pm (IST)

Date: May 23, 2023 (Tuesday)

Mode: Hybrid

The talk was attended by faculty members from the department of Electronics and Electrical Engineering (EEE), Computer Science and Engineering (CSE), and research scholars of EEE, CSE, and Physics from the institutes across the IEEE Guwahati subsection. Around 50

people (both online and offline) attended the talk and actively interacted with the speaker, who is widely regarded as one of the pioneers in the field of wireless communications.

During the talk, Prof. Marzetta highlighted the need to close the gap between physics and communication theory. He mentioned how Physics based communication models can result in unprecedented communication systems as well as open new research directions in the field of information theory. He also discussed the current research projects on Wireless Communication in Resonant Chambers, Wireless Communication via Conductive Heat Transfer, and Super-Directive Wireless Power Transfer that his group is actively working on at NYU wireless.

All the attendees benefitted immensely through this interaction. A brief biography of the speaker is given below:

Thomas Marzetta is Distinguished Industry Professor at NYU Tandon School of Engineering, ECE Department, and Director of NYU WIRELESS. Born in Washington, DC, he received the PhD and SB in Electrical Engineering from Massachusetts Institute of Technology in 1978 and 1972, and the MS in Systems Engineering from University of Pennsylvania in 1973. Prior to joining NYU in 2017 he had three industrial research careers: petroleum exploration (Schlumberger-Doll Research, 1978–1987), defense (Nichols Research Corporation, 1987–1995), and telecommunications (Bell Labs, 1995–2017). At Bell Labs he directed the Communications and Statistical Sciences

Department within the former Mathematical Sciences Research Center, and he was made a Bell Labs Fellow. He originated Massive MIMO, one of the cornerstones of fifth generation wireless technology. He is lead-author of the book "Fundamentals of Massive MIMO".

Marzetta was elected as a member of National Academy of Engineering in 2020. Additional recognition for his contributions to Massive MIMO include the 2019 Radio Club of America Armstrong Medal, the 2017 IEEE Communications Society Industrial Innovation Award, the 2015 IEEE Stephen O. Rice Prize, and the 2015 IEEE W. R. G. Baker Award. He was elected a Fellow of the IEEE in 2003 and he received an Honorary Doctorate from Linköping University, Sweden, in 2015.

Activity: Invited talk by Dr. Pavithran Iyer Sridharan

The technical talk of the IEEE ComSoc Chapter - Guwahati (Kolkata Section) was delivered physically by Dr. Pavithran Iyer Sridharan, Senior Research Scientist at Xanadu Quantum Technologies Inc. The details of the talk are as follows:

Title: Quantum error correction using generalized surface codes

Venue: Seminar room, EEE dept., IIT Guwahati

Time: 6.00 pm to 7.00 pm (IST)

Date: August 2, 2023 (Wednesday)

Mode: Offline

The talk was attended by faculty members from the department of Electronics and Electrical Engineering (EEE), Computer Science and Engineering (CSE), and research scholars of EEE, CSE, and Physics from the institutes across the IEEE Guwahati subsection. Around 50 people attended the talk and actively interacted with the speaker.

During the talk, Dr. Pavithran talked about a class of quantum error correcting codes called surface codes and efficient methods to encode more information in these codes which was called as generalized surface codes. He also discussed a technique to benchmark the performance of generalized surface codes under the error model described by quantum erasures. He concluded the talk by introducing a software tool called SQUAB which can be used for the analysis of generalized surface codes.

All the attendees benefitted immensely through this interaction. A brief biography of the speaker is given below:

Dr. Pavithran completed his graduate studies at Université de Sherbrooke, starting with a Master's in Physics and his PhD in the group of (late) Prof. David Poulin. Later, he worked as a postdoc at the Institute for Quantum Computing in the group of Prof. Joseph Emerson. During his postdoc at Waterloo, Canada, he also worked as a research scientist at Quantum Benchmark Inc., a start-up founded by Prof. Joseph Emerson and Prof. Joel Wallman, focusing on developing protocols based on randomized benchmarking techniques to characterize errors in quantum hardware. After his postdoc he started working at his current position, for Xanadu Quantum Technologies Inc start-up based in Toronto, Canada. Most of his research work is in the field of quantum error correction and fault tolerance. Especially he worked in understanding the efficiency of these surface codes and decoding them. He also worked in developing benchmarking tools for these codes under erasure channel.

Activity: Tutorial by Dr. Abhishek Kumar Gupta

The technical tutorial talk of the IEEE ComSoc Chapter - Guwahati (Kolkata Section) was delivered physically by Dr. Abhishek K. Gupta, Assistant Professor, IIT Kanpur. The details of the talk are as follows:

Tutorial talk title: 6G Terahertz Networks: Modeling, Analysis and Opportunities

Speaker: Dr. Abhishek K. Gupta, Assistant Professor, IIT Kanpur

Date: November 10, 2023 (Friday)

Time: 2.00 PM – 4.00 PM (IST)

Mode: Offline

Venue: EEE Seminar Room, IIT Guwahati

The talk was attended by faculty members from the department of Electronics and Electrical Engineering (EEE), Computer Science and Engineering (CSE), and research scholars of EEE

from the institutes across the IEEE Guwahati subsection. Around 50 people attended the talk and actively interacted with the speaker.

The talk was extremely informative discussing about 5G and beyond communication aspects including the requirements, use cases, channel models, challenges, and open research problems of THz networks and other 6G enablers.

Some of the key fundamental aspects discussed and emphasized during the tutorial session are given below:

> Emerging applications: Extended (XR) and Virtual Reality (VR), Holographic telepresence, e-Health, Internet of everything, Intelligent transport, AI to enhance communication, Brain type communication, and Non-terrestrial communication.
> mmWave key distinguishing features.
> THz key distinguishing features:

· Channel models such as blockage model, human shadowing and self-blockage.

· Digital and analog beamforming, and hybrid beamforming.

· Performance metrics: Link and system level evaluations.

· Performance of cellular systems using 2D models, Wyner model, etc.

· Stochastic geometry for communication networks: Poisson point process, germ grains model.

· Challenges such as beamforming design, spectrum sharing

· Applications: WiFi, IoT, Tera-SpaceCom, Communication between Nano-machines

· Other 6G enablers: Machine learning and AI in communications, Vehicular communication.

Activity: Invited talk by Dr. Sarvendranath Rimalapudi

The technical tutorial talk of the IEEE ComSoc Chapter - Guwahati (Kolkata Section) was delivered online by Prof. Sarvendranath Rimalapudi, Assistant Professor, IIT Tirupati. The details of the talk are as follows:

Title: Energy-Efficient Operation of Spectrum Sharing RadioWeaves Network

Venue: Online

Time: 4 pm to 5 pm (IST)

Date: Dec 14, 2023 (Thursday)

The talk was attended by faculty members, MTech, and PhD students from the Department of Electronics and Electrical Engineering (EEE), IIT Guwahati, and from other institutes across the IEEE Guwahati subsection. Around 26 people attended the talk and actively interacted with the speaker, who is an expert in the field of wireless communications.

During the talk, Prof. Sarvendranath discussed radioweaves technology that is based on cell-free architecture, a potential 6G technology. He also talked about how spectrum sharing can benefit from the use of such architectures in terms of energy efficiency. He discussed the pros and cons of centralized and distributed processing. All the attendees benefitted immensely through this interaction. A brief biography of the speaker is given below:

Sarvendranth Rimalapudi is currently working as an Assistant Professor at Indian Institute of Technology Tirupati. He received his Bachelor of Technology degree in Electrical and Electronics Engineering from the National Institute of Technology Karnataka, Surathkal in 2009. He received his Master of Engineering and Ph.D. degrees from the Department of Electrical Communication Engineering, Indian Institute of Science, Bangalore in 2012 and 2020, respectively. From 2012 to 2016, he was with Broadcom Communications Technologies, Bangalore, India, where he worked on the development and implementation of algorithms for LTE and IEEE 802.11ac wireless standards. In 2021, he was a postdoctoral researcher in the Department of Electrical Engineering, Linkoping University, Sweden. From January 2022 to June 2023, He worked as an assistant professor in the Electronics and Electrical Engineering department of the Indian Institute of Technology Guwahati. His research interests include machine learning for wireless communication, multiple antenna techniques, spectrum sharing, cell-free architectures, and next-generation wireless standards.

Activity: Invited talk by Dr. Chetna Singhal

The technical talk of the IEEE ComSoc Chapter - Guwahati (Kolkata Section) was delivered online by Dr. Chetna Singhal, Assistant Professor, IIT Kharagpur. The details of the talk are as follows:

Title: Multimedia communication and QoE aspects for heterogeneous mobile users

Venue: Online

Time: 3 pm to 4 pm (IST)

Date: Dec 19, 2023 (Tuesday)

The talk was attended by faculty members, M.Tech and PhD students from the department of Electronics and Electrical Engineering (EEE), IIT Guwahati and from other institutes across the IEEE Guwahati subsection. Around 14 people attended the talk and actively interacted with the speaker, who is an expert in the field of next-generation heterogeneous wireless networks.

During the talk, Prof. Singhal discussed the aspects related to QoE assessment in a mobile multimedia communication framework and a method to estimate QoE in multimedia communication over next-generation mobile networks. All the attendees benefitted immensely through this interaction. A brief biography of the speaker is given below:

Dr. Chetna Singhal is an IEEE Senior Member and working as an Assistant Professor with the Department of Electronics and Electrical Communication Engineering, IIT Kharagpur. She received M.Tech. and Ph.D. degrees from the Indian Institute of Technology (IIT) Delhi. She has been awarded DST Inspire Faculty Fellowship, ERCIM Fellowship, and Pune University Gold medal in Engineering. Her research interests include next-generation heterogeneous wireless networks, with emphasis on cross-layer optimization, adaptive multimedia services, energy efficiency, and resource allocation.

IEEE EDS KOLKATA CHAPTER

- One-day Lecture talk on "Nano-Dimensional Sensors" by Dr. Manash Chanda, Chairman, IEEE EDS Kolkata Chapter, held on 14th March, 2023 jointly organized by IEEE EDS Kalyani Government Engineering College Student Branch Chapter and Department of ECE, KGEC. Total attendance :25; vTools Meeting Reports: https://events.vtools.ieee.org/m/381641

- 5th International conference "2023 Devices for Integrated Circuit (DevIC)", held at Kalyani Government Engineering College from April 7-8, 2023, organized by IEEE KGEC Student Branch Chapter in association with Department of ECE, KGEC, technically co-sponsored by IEEE EDS Kolkata Chapter. No. of Participants is more than 600. Link to vTools Meeting eports: https://events.vtools.ieee.org/m/381642, Conference Flyer, Link of Publication in IEEE Xplore: https://ieeexplore.ieee.org/xpl/conhome/10134754/proceeding

- International Student Symposium on Sustainability through Technological Advancement, Innovation, and Research (STAIR-2023) was organized at Adamas University, 19-20 April 2023. Dr. Manash Chanda delivered the lecture.

- One-day Seminar on "Electoral Literacy for Students" organized by the IQAC Cell, Kalyani Govt. Engg. College in association with IEEE KGEC Student Branch Chapter, Resource person: Mr. Deep Chatterjee, WBCS (EXE), Block Development Officer, Kalyani, Date & Time: 10th May, 2023 at 1:30 PM, Venue: Seminar Hall, Administrative Bldg. (North Block), KGEC, vTools Meeting Reports: https://events.vtools.ieee.org/m/381644, Attendance: 60

- One-day lecture talk program at our institute on 16th August, 2023 organized by the Department of ECE in collaboration with IEEE, KGEC Student Branch Chapter,

Resource person: Dr. Debashis De, Professor, CSE Dept.,MAKAUT, Title of the lecture: Internet of Drone Things, Time: 12:00 P.M, Place: Language Lab, Old. Bldg., Kalyani Govt. Engg. College, Date: 16th August, 2023, Total attendance: 90; Link to vTools Meeting Reports: https://events.vtools.ieee.org/m/381646

- One societal activity was conducted by RCCIIT with technical and financial sponsorship of IEEE EDS Kolkata Chapter for providing education among underprivileged senior citizens on 30th June 2023.

- IEEE EDS Kolkata Chapter technically and financially sponsored IEEE CODEC 2023 Organized by the Institute of Radio Physics and Electronics, University of Calcutta from 16 th to 8 th December, 2023.

- IEEE EDS Kolkata Chapter technically sponsored the International Conference on Systems and Technologies for Smart Agriculture (ICSTA) – 2023 in Kolkata from 19th to 20th December 2023.

IEEE CASS KOLKATA CHAPTER

- ### What the Beginner Needs to Learn in the Profession

It gives us immense pleasure in informing you that the Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex in Collaboration with IEEE CASS Kolkata Chapter, has successfully conducted a Technical Seminar on "What the Beginner Needs to Learn in the Profession" at Auditorium of SurTech, Dum Dum on 20th January'23.

The program was started with an inaugural speech by Principal, SurTech. The program started at 3.00 PM. Mr. Baibaswata Das, HoD, CE Dept gave a welcome address to the respected dignitaries. The event was glittered by a presentation from Dr. Abhijit Dasgupta, former Joint Managing Director, M.N. Dastur Company Limited.

The session was very informative for the students, and our guest speaker discussed all the aspects of a budding engineer becoming a full-scale professional. The session was very motivating, and all the participants thoroughly enjoyed and interacted with the speaker throughout the session. The session was followed by a vote of thanks and felicitation for our guest. Total 147 participant participated in this session.

- ### Career in Cyber Security

It gives us immense pleasure in informing you that the Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex in Collaboration with IEEE CASS Kolkata Chapter, has successfully conducted a Technical Webinar on "Career in Cyber Security" using

Zoom Platform on 27th January'23.

The program was started with an inaugural speech by Principal, SurTech. The program started at 3.00 PM. Dr. Shefalika Ghosh, Samaddar gave a welcome address to the respected dignitaries and students present in online platform. The event was glittered by a presentation from Ms. Pooja Joshi, Country Head, EC Council.

Total 80 students & 25 professionals attended the Webinar. He helps the participants explore the Career Scopes in Cyber Security.The session was very motivating, and all the participants thoroughly enjoyed and interacted with the speaker throughout the session.

- **Workshop on Advanced Cyber Security & Ethical Hacking-IOT Security & Cloud Security Engineering**

It gives us immense pleasure in informing you that the Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex in Collaboration with IEEE CASS Kolkata Chapter, has successfully conducted a Technical Workshop on "Advanced Cyber Security & Ethical Hacking-IOT Security & Cloud Security Engineering" in the Auditorium, SurTech on 31st January'23. The program was started with an inaugural speech by Dr. Saradindu Panda, Chair, IEEE CASS Kolkata Chapter & Principal, SurTech. The program started at 11.00 AM. Dr. Shefalika Ghosh Samaddar gave a welcome address & Vote of Thanks to the respected dignitaries and students present in the Auditorium.

The Tech Cybercop Team made a very impressive presentation having elements of pragmatism and industry readiness on the theme, 'Cyber Security and Ethical Hacking'. Total 125 students & 25 professionals participated in the session, took part in interactive question answer, hacking, and quiz competitions, and won several appreciation prizes. Expert helps the participants explore the clear concept regarding the future concept of Cyber Security & Ethical Hacking-IOT Security & Cloud Security and the latest Developments & career Opportunities in the Industries.

The session was very motivating, and all the participants thoroughly enjoyed and interacted with the speaker throughout the session.

- **Low Power Quantum Computing Applications**

It gives us immense pleasure in informing you that the IEEE CASS Student Chapter, IEM, Gurukul Campus in Collaboration with IEEE CASS Kolkata Chapter, has successfully conducted a Distinguished Lecture on "Low Power Quantum Computing Applications" in the Auditorium, IEM, Gurukul Campus on 3rd March'23.

The program was started with an inaugural speech by Dr. Jayanta Kumar Roy, Immediate Past Chair, IEEE CASS Kolkata Chapter. The program started at 4.00 PM. Ms. Mili Sarkar, Faculty Advisor of IEEE CASS Student Chapter, IEM, Gurukul Campus,

gave a welcome address & Vote of Thanks to the respected dignitaries and students present in the Auditorium.

More than 100 students & 25 professionals participated in the session, took part in interactive question answer, hacking and quiz competitions and won several appreciation prizes.

Expert helps the participants explore the clear concept of low power circuit design for next generation quantum computing applications using nano CMOS technology nodes The session was very motivating, and all the participants thoroughly enjoyed and interacted with the speaker throughout the session.

- **Workshop on Innovations**

It gives us immense pleasure to inform you that the Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex in Collaboration with IEEE CASS Kolkata Chapter, has successfully conducted a Webinar on "Innovation" using Zoom Platform on 9th March'23.

The program was started with an inaugural speech by Dr. Saradindu Panda, Chair, IEEE CASS Kolkata Chapter & Principal, SurTech. The program started at 11.00 AM. Dr. Sayantan Chakraborty, HOD-EE, SurTech, gave a welcome address & Vote of Thanks to the respected dignitaries and students present in online platform. The event was glittered by a presentation from Ms. Prudhvi, Mr.Tilokesh Mallick, Ms.Navyasri and Mr. Elavazhagan from Cybermotion Technologies Pvt. Ltd.

Total 75students & 15 professionals attended the Webinar.

Experts help the participants explore the clear concept regarding the initial stages of innovation processes for early-stage innovations, opportunities for students & faculties as early-stage innovations, etc.

The session was very motivating, and 90 participants participated in the session. All the participants thoroughly enjoyed and interacted with the speaker throughout the session.

- **Workshop on Entrepreneurship Skill, Attitude and Behaviours Development**

It gives us immense pleasure in informing you that the Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex in Collaboration with IEEE CASS Kolkata Chapter, has successfully conducted a Webinar on "Entrepreneurship Skill, Attitude and Behavior Development" using Google Meet Platform on 10th March'23.

The program was started with an inaugural speech by Dr. Saradindu Panda, Chair, IEEE CASS Kolkata Chapter & Principal, SurTech. The program started at 11.00 AM. Dr. Sayantan Chakraborty, HOD-EE, SurTech, gave a welcome address & Vote of Thanks to

the respected dignitaries and students present in online platform. The event was glittered by a presentation from Mr. Soumya Kanti Das, Nikhil Bharat Shiksha Parisad. Total 90 students & 10 professionals attended the Webinar.

He helps the participants explore the clear concept regarding the initial stages of innovation processes for early-stage innovations, opportunities for students & faculties as early-stage innovations, etc. The session was very motivating, and all the participants thoroughly enjoyed and interacted with the speaker throughout the session.

- **Start-up, Innovation and Entrepreneurship**

It gives us immense pleasure in informing you that the Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex in Collaboration with IEEE CASS Kolkata Chapter, has successfully conducted a Webinar on "Start-up, Innovation and Entrepreneurship" using Google Meet Platform on 20th March'23.

The program was started with an inaugural speech by Dr. Saradindu Panda, Chair, IEEE CASS Kolkata Chapter & Principal, SurTech. The program started at 11.00 AM. Dr. Sayantan Chakraborty, HOD-EE, SurTech, gave a welcome address & Vote of Thanks to the respected dignitaries and students present in online platform. The event was glittered by a presentation from Mr. Indranil De Sarkar, Ardent Computech Pvt Ltd. Total 50 students & 20 professionals attended the Webinar.

He helps the participants explore the clear concept regarding the initial stages of innovation processes for early-stage innovations, opportunities for students & faculties as early-stage innovations, etc.

The session was very motivating, and all the participants thoroughly enjoyed and interacted with the speaker throughout the session.

- **Electric Vehicles: Battery Management**

It is our great pleasure to organize an extremely informative seminar on 'Electric Vehicles: Battery Management Processes' on 7th April, 2023 from 12.30 PM at Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex, 540 Dum Dum Road, Surermath, (Near Dum Dum Jn. Station),Kolkata-700074 West Bengal in physical mode.

The event started with an inaugural speech by Prof. (Dr.) Saradindu Panda, Principal, Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex and Chair of IEEE CASS Kolkata Chapter. The session commenced afterwards with the presentation of Mr. Sourav Rakshit, Founder Director of Logiczap Nextgen Technologies. The session dealt with the battery management processes adopted by the several battery manufacturing industries and thereafter sharing the different viewpoints in battery design. The session was also able shed a light on the Battery Maintenance Processes that needs to be adopted by the general consumers. The session was very motivating, and all the participants

thoroughly enjoyed and interacted with the speaker throughout the session.

The session ended with Vote of Thanks from Mr. Arindam Mukherjee, Teacher-In-Charge, Department of Automobile Engineering, Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex.

- **"Pradarshan" PPT- creating competition**

On April 12, 2023, the IEEE IEM CAS-S Student Branch Chapter hosted the "Pradarshan" PPT- creating competition. The event encouraged students to submit PPTs on any topic related to engineering and technology. The event was divided into two phases: the first required students to submit their work online. The submitted works were then screened, and in the second round, all the participants with selected PPTs were invited to an offline presentation. In the online form, we had a massive response from students. Ten participants were chosen from all the works for the offline presentation, which took place on the specified day. Prof. Dr. Asim Kar, Dr. Rijuparna Chakrabarty, and Prof. Mili Sarkar were the judges for the event. All the final contestants gave presentations on several intriguing themes. It was an excellent educational opportunity for both the audience and the other participants.

- **Know your vehicles: Tyres and its classification**

It is our great pleasure to organize an extremely informative seminar on 'Know your Vehicles: Tyres and its classification' on 14th April 2023 from 11.30 AM at Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex, 540 Dum Dum Road, Surermath, (Near Dum Dum Jn. Station), Kolkata-700074 West Bengal in physical mode. The event started with an inaugural speech by Prof. (Dr.) Saradindu Panda, Principal, Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex and Chair of IEEE CASS Kolkata Chapter. The session commenced afterwards with the presentation of Mr. Sanjoy Das, Service Engineer of Apollo Tyres. The session dealt with the various aspects of understanding the tyre nomenclature and its different applications. The session also helped the common people understand the different specifications allotted to Tyre nomenclatures. The session was insightful as the participants were able to understand the basic and fundamental details of tyres used in several practical applications.

- **Skill Development Program to be familiar with new trends in engineering& Technology**

It gives us immense pleasure in informing you that the Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex in Collaboration with IEEE CASS Kolkata Chapter, has successfully conducted a Technical Seminar on "Skill Development Program to be familiar with new trends in engineering& Technology" in the Auditorium on 12th

May'23.

The program started with an inaugural speech by Principal, SurTech & Chair, IEEE CASS Kolkata Chapter. The program started at 3.00 PM. Dr. Sayantan Chakraborty gave a welcome address to the respected dignitaries and students present in the Auditorium. The event was glittered by the presentations from the Speakers of MSME, Kolkata. A total of 80 students & 25 professionals attended the Webinar. Students get familiar with new trends in tools, soft wares and procedures that have been adopted by industries now days and students enhanced their knowledge of skills with new entrepreneurship ideas.

The session was very motivating, and all the participants thoroughly enjoyed and interacted with the speaker throughout the session.

- **Green Energy and Its Application**

It gives us immense pleasure in informing you that the Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex in Collaboration with IEEE CASS Kolkata Chapter, has successfully conducted a Technical Webinar organized on 28.07.2023 on the topic "Green Energy and Its Application" through the Google Meet platform. The session was conducted by our guest speaker, Dr. Ananta Kr. Das, professor, Department of Renewable Energy, Maulana Abul Kalam Azad University of Technology. The event kicked off with a thought-provoking keynote address by Dr. Ananta Kumar Das, a renowned expert in the field of solar, wind, hydroelectric, and geothermal energy technologies. The keynote emphasized the urgent need to transition from conventional fossil fuels to green energy sources to mitigate climate change and ensure a sustainable future.

The program was started with an inaugural speech by Principal, SurTech. The program started at 11.00 AM. Mr. Baibaswata Das, HoD, CE Dept gave a welcome address to the respected dignitaries. Total 65 participants are participated in this session.

In conclusion, the event on "Green Energy and Its Application" had a positive impact on participants by enhancing their knowledge, awareness, and understanding of green energy sources and their vital role in creating a sustainable and clean energy future. It also inspired students to contribute to the transition towards green and renewable energy solutions.

- **Blood Donation Camp**

It gives us immense pleasure in informing you that the NCC & NSS Unit of Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex in Collaboration with IEEE CASS Kolkata Chapter & Lions Club, Payradanga has successfully conducted a Blood Donation Camp on 10.08.2023 at Room No: 220. The session was conducted by the doctors of Lions Club, Payradanga, Kolkata. The event kicked off with a thought-provoking keynote address by Prof. (Dr.) Saradindu Panda, Principal, SurTech and Chair, IEEE CASS Kolkata Chapter.

The key highlights of the event were:

A team of 10 doctors, nurses, and members from the Lions Club of Payradanga came for blood collection.

The Camp started from 11.00 a.m. onwards and Faculty and Students from all the Streams and Departments took active participation.

There were 45 faculty, staff, and student donors who made this event a grand success by donating their blood.

Proper medical checkup of each donor was done before and after blood donation.

IEEE CS KOLKATA CHAPTER

- **Technical Lecture on Noise-Resilient Quantum Computing**

02nd January 2023, Technical Lecture jointly organized by IEEE CS Kolkata Chapter and Department of Computer Science and Engineering, Jadavpur University on 2nd January at Amitava Dey Memorial Hall (ADMH), Department of Computer Science and Engineering, Jadavpur University. Dr. Prabhat Mishra is a Professor, Department of Computer and Information Science and Engineering, University of Florida, USA. He delivered a talk on Noise-Resilient Quantum Computing. Around 42 participants attended the program.

- **Technical talk on Car, Games, Phones and Drones**

19th January 2023, Technical Lecture jointly organized by IEEE CS Kolkata Chapter and Department of Computer Science and Engineering, Jadavpur University. Dr. Samarjit Chakraborty is a Distinguished Professor, Department of Computer Science, University of North Carolina, Chapel Hill, USA. He delivered a talk on Car, Games, Phones and Drones. Around 45 participants attended the program.

- **Technical Lecture on Computer Industry Evolution: From Turing to UNIX**

20th January 2023, Technical Lecture jointly organized by IEEE CS Kolkata Chapter, Department of Computer Science and Engineering, Jadavpur University and Tech Evangelists USA. Dr. Bart Stuck, Applied Mathematician, Physicist, Computer Scientist and Entrepreneur. He delivered a talk on Computer Industry Evolution: From Turing to UNIX in an online Zoom meeting. More than 50 participants attended the program.

- **Technical Talk on Geometry and Graphs: A tale of two worlds**

18th May 2023, Technical Lecture jointly organized by IEEE CS Kolkata Chapter and Department of Computer Science and Engineering, Jadavpur University. Dr. Sujoy Bhore is an Assistant Professor, Department of Computer Science and Engineering, IIT Bombay. He delivered a talk on Geometry and Graphs: A tale of two worlds. Around 62 participants attended the program.

- ### Technical Talk on Wireless Communication Engines and Applications

Technical Lecture jointly organized by IEEE CS Kolkata Chapter, Department of Computer Science and Engineering, Jadavpur University and Tech Evangelists USA. Mr. Prosit Mukherjee, Sr. Director Engineering and Head of Noida Design Centre Qualcomm India on 28th April'23. He delivered a talk on Wireless Communication Engines and Applications in an online Zoom meeting. More than 55 participants attended the program.

- ### Expert talk on Cryptography

Professor (Dr.) Bimal Roy's seminar on July 10, 2023, at the A.K Choudhury School of Information Technology, Acharya Prafulla Chandra Shiksha Prangan, Academic Tower, Technology Campus, University of Calcutta, was an enlightening and thought-provoking event. The seminar, scheduled for 12:00 PM, brought together students, researchers, and professionals from the field of information technology/Computer Science/CS allied branches in Kolkata, West Bengal, India. Total 42 participants are participated in this session.

- ### Seminar on "From Smart Sensing to Smart Living: The Era of IoT, AI/ML and Data Science"

The speaker of the event is Prof. Sajal K. Das, Department of Computer Science, Missouri University of Science and Technology, USA. Dr. Sajal K. Das is Curators' Distinguished Professor of Computer Science and Daniel St. Clair Endowed Chair at Missouri University of Science and Technology, where he was Computer Science Department Chair in the past. He served the National Science Foundation as a Program Director in the Computer and Network Systems Division on 2nd August'23.

This talk was focused on unique research challenges in smart living systems followed by novel frameworks, models, and secure and trustworthy solutions based on a rich set of theoretical and practical design principles, such as AI/ML, data analytics, sensor fusion, uncertainty reasoning, information theory, prospect theory, reputation/belief models, and graph theory. Case studies with real-world datasets in smart energy, smart transportation, and smart health will be presented. The talk concluded with the direction of future research. Total 30 participants are participated in this session.

- ### Online Seminar on "Machine Learning-Based Anomaly Detection of Correlated Sensor Data: An Integrated Principal Component Analysis-Autoencoder Approach"

Mr Tanish Baranwal is a Researcher with Domani Systems, Inc. Tanish delivered a talk on how machine learning is used to detect anomalies in correlated sensor data streams where sensors measure similar parameters on 15th September'23. Traditional statistical techniques are not very suitable in detecting anomalous sensor behavior in these use cases because of

the requirement to deal with many past time samples to be able to discern an anomaly, burdening the controller resources. Total 56 participants are participated in this session.

Keynote Speech

This event was technically sponsored by IEEE Computer Society Kolkata Section Chapter. Prof. Santanu Chaudhury, Professor, Department of Electrical Engineering, IIT Delhi, New Delhi, India, and also serving as the Director of IIT Jodhpur, Jodhpur, India delivered a keynote speech at 4th International Conference on Frontiers in Computing and Systems (COMSYS-2023), October 16-17, 2023, at Indian Institute of Technology Mandi, Himachal Pradesh, India, jointly organized by the School of Computing and Electrical Engineering (SCEE) and COMSYS Educational Society, Kolkata at Indian Institute of Technology Mandi (IIT Mandi).

Keynote Speech on Microfluidic Lab-on-Chips: A Revolution that is Silently Reshaping Medical Diagnostics and Healthcare Applications

This event was technically sponsored by IEEE Computer Society Kolkata Section Chapter. Prof. Bhargab B. Bhattacharjee, Visiting Professor, CSE, NIT Rourkela, Odisha delivered a keynote speech at 4th International Conference on Frontiers in Computing and Systems (COMSYS-2023), October 16-17, 2023, at Indian Institute of Technology Mandi, Himachal Pradesh, India, jointly organized by the School of Computing and Electrical Engineering (SCEE) and COMSYS Educational Society, Kolkata at Indian Institute of Technology Mandi (IIT Mandi)).

Keynote Speech on Applying Electrical Engineering and Computer Science to the Humanities

This event was technically sponsored by IEEE Computer Society Kolkata Section Chapter. Prof. Elisa Barney Smith, Luleå University of Technology (LTU), Sweden delivered a keynote speech at 4th International Conference on Frontiers in Computing and Systems (COMSYS-2023), October 16-17, 2023, at Indian Institute of Technology Mandi, Himachal Pradesh, India, jointly organized by the School of Computing and Electrical Engineering (SCEE) and COMSYS Educational Society, Kolkata at Indian Institute of Technology Mandi (IIT Mandi))

Keynote Speech on Inferring phylogenetic networks from collections of trees

This event was technically sponsored by IEEE Computer Society Kolkata Section Chapter. Prof. Paweł Górecki, University of Warsaw, Poland delivered a keynote speech at 4th International Conference on Frontiers in Computing and Systems (COMSYS-2023), October 16-17, 2023, at Indian Institute of Technology Mandi, Himachal Pradesh, India, jointly

organized by the School of Computing and Electrical Engineering (SCEE) and COMSYS Educational Society, Kolkata at Indian Institute of Technology Mandi (IIT Mandi)).

Technical Lecture on An overview of startup and venture capital

Technical Lecture jointly organized by IEEE Computer Society Kolkata Section Chapter and Department of Computer Science and Engineering, Jadavpur University. Speaker Mr.Joydeep Bhattacharya delivered a talk on An overview of startup and venture capital. Joydeep Bhattacharyya is a General Partner at Canaan, a venture capital fund which has 6 billion US Dollars under management. He leads investments in enterprise and cloud platforms. His experience is rooted in the founding days of Microsoft Office 365 and Microsoft Skype for Business, where he was an early engineer and eventually ran cross-functional teams including R&D, IT Operations and Customer Support. Joydeep received an M.B.A. from the Kellogg School of Management, where he was a CRTI fellow, and a B.E. degree in Computer Science and Engineering from Jadavpur University. Joydeep presently sits on the board of 12 companies. He is a proud father of a 9 year old son and 5 year old daughter. They love playing gully cricket together.

Keynote Speech on Efficient and Effective Algorithms for Building Robust Deep Models

This event was technically sponsored by IEEE Computer Society Kolkata Section Chapter. Prof. R. Venkatesh Babu delivered a keynote speech at the 2nd International Conference on Data Electronics and Computing for the year 2023 (ICDEC-2023) held during December 15-16, 2023, at Mizoram University, Aizawl, Mizoram 796004, organized by the Department of Computer Engineering of Mizoram University, Aizawl, the Department of Computer Science and Engineering of National Institute of Technology Mizoram, and the COMSYS Educational Trust, Kolkata.

Keynote Speech on Empowering Tomorrow's Internet

This event was technically sponsored by IEEE Computer Society Kolkata Section Chapter. Mr. Anand Raje delivered a keynote speech at the 2nd International Conference on Data Electronics and Computing for the year 2023 (ICDEC-2023) held during December 15-16, 2023, at Mizoram University, Aizawl, Mizoram 796004, organized by the Department of Computer Engineering of Mizoram University, Aizawl, the Department of Computer Science and Engineering of National Institute of Technology Mizoram, and the COMSYS Educational Trust, Kolkata.

DVP Lecture on IoT in Smart Agriculture: Applications and Challenges

Technical Lecture jointly organized by IEEE Computer Society Kolkata Section Chapter, Department of Computer Science and Engineering, Jadavpur University. Dr. Mohamed

Rawidean Mohd KAssim, IEEE CS R10 Coordinator delivered a DVP Lecture on IoT in Smart Agriculture: Applications and Challenges.

IEEE CIS KOLKATA CHAPTER

- **Brainstorming Session on Collaborative Research in Computational Intelligence (CI)**
  IEEE CIS Brainstorming Session on Collaborative Research in Computational Intelligence (CI) organized on 10th January 2023, TCS Research Kolkata. Prof. Dipankar Dasgupta the key speaker state a mission statement stating the need for close collaboration of all researchers working on cyber-enabled AI/ML systems. The mission statement also focused on the growing need for AI/ML-based solutions in business.

- **Lecture Session on Artificial Intelligence & Evolving Intelligent Systems**
  22nd June 2023, IEEE CIS Kolkata organize the Lecture Session on Artificial Intelligence & Evolving Intelligent Systems. The first lecture, titled "Deep Fuzzy Networks," was presented by Prof. Nishchal K. Verma from IIT Kanpur. His expertise in the field captivated the audience, sparking thought-provoking discussions. Dr. Arijit Mukherjee from TCS Research had the honor of chairing this engaging session, ensuring a conducive environment for interactive participation and the exploration of intriguing questions. Total 81 participants participated in this session.

- **Second session of lecture series on Artificial Intelligence & Evolving Intelligent Systems**
  The Second Session of the IEEE CIS Kolkata Lecture Series on Artificial Intelligence & Evolving Intelligent Systems commenced on 22nd June'23 with a warm welcome from Prof. Paramartha Dutta, a member of the EXECOM IEEE CIS, Kolkata. It was a moment of great enthusiasm as participants eagerly awaited the insightful lectures that lay ahead.

  The first lecture, titled "Deep Fuzzy Networks," was presented by Prof. Nishchal K. Verma from IIT Kanpur. His expertise in the field captivated the audience, sparking thought-provoking discussions. Dr. Arijit Mukherjee from TCS Research had the honor of chairing this engaging session, ensuring a conducive environment for interactive participation and the exploration of intriguing questions.

  Following the enlightening discussion, the stage was set for the second lecture by Dr. Arpan Pal, Distinguished Chief Scientist and Research Area Head of Embedded Devices and Intelligent Systems at TCS Research. His talk on "AIoT - AI at Device Edge for Intelligent Sensing" further enriched the attendees' knowledge in the field. Prof. Paramartha Dutta from Visva-Bharati expertly chaired this session, providing a platform for participants to actively engage with the speaker and delve deeper into the subject matter.

With the participants' curiosity satisfied and a wealth of knowledge shared, the session drew to a close at 9:00 PM IST. Prof. Tandra Pal extended a vote of thanks on behalf of the organizers, expressing deep gratitude to all attendees and contributors for their valuable participation and making the event a success. The entire session was hosted by Dr. Somnath Mukhopadhyay from Sikkim University, ensuring smooth proceedings and a seamless virtual experience for all. Total 81 participant participated in this event.

We extend our appreciation to all the distinguished speakers, session chairs, and attendees for their invaluable contributions, making the Second Session of the IEEE CIS Kolkata Lecture Series an enriching and memorable event.

- **Third session of lecture series on Artificial Intelligence & Evolving Intelligent Systems**
The Third Session of the IEEE CIS Kolkata Lecture Series on Artificial Intelligence & Evolving Intelligent Systems commenced on 27th July'23 with a warm welcome from Prof. Tandra Pal, past chair of the EXCOM IEEE CIS, Kolkata. It was a moment of great enthusiasm as participants eagerly awaited the insightful lectures that lay ahead.
The first lecture, titled "Optimizing Perceptual Machine Intelligence on Edge Devices," was presented by Prof. Archan Misra, Singapore Management University. His expertise in the field captivated the audience, sparking thought-provoking discussions. Dr. Himadri Pal from TCS Research had the honor of chairing this engaging session, ensuring a conducive environment for interactive participation and the exploration of intriguing questions.

Following the enlightening discussion, the stage was set for the second lecture by Dr. Brojeshwar Bhowmik, TCS Research. His talk on "Clothing Dynamics on 3D People" further enriched the attendees' knowledge in the field. Prof. (Dr.) Siddhartha Bhattacharyya Chair, IEEE CIS Kolkata Chapter expertly chaired this session, providing a platform for participants to actively engage with the speaker and delve deeper into the subject matter.

With the participants' curiosity satisfied and a wealth of knowledge shared, the session drew to a close at 9:00 PM IST. Dr. Somnath Mukhopadhyay member of IEEE CIS EXCOM extended a vote of thanks on behalf of the organizers, expressing deep gratitude to all attendees and contributors for their valuable participation and making the event a success. The entire session was hosted by Dr. Mukhopadhyay, ensuring smooth proceedings and a seamless virtual experience for all.

We extend our appreciation to all the distinguished speakers, session chairs, and attendees for their invaluable contributions, making the Second Session of the IEEE CIS Kolkata Lecture Series an enriching and memorable event. Total 41 participant participated in this event.

- **Fourth session of lecture series on Artificial Intelligence & Evolving Intelligent Systems**

The Fourth Session of the IEEE CIS Kolkata Lecture Series on Artificial Intelligence & Evolving Intelligent Systems commenced on 31st August'23 with a warm welcome from Prof. Tandra Pal, past chair of the EXCOM IEEE CIS, Kolkata. It was a moment of great enthusiasm as participants eagerly awaited the insightful lectures that lay ahead.

The first lecture, titled "Algorithm development in biotechnology" was presented by Dr. Nivedita Majumdar from Thermo Fisher Scientific. Her expertise in the field captivated the audience, sparking thought-provoking discussions. Prof. (Dr.) Siddhartha Bhattacharyya, Chair, IEEE CIS Kolkata chapter had the honor of chairing this engaging session, ensuring a conducive environment for interactive participation and the exploration of intriguing questions.

Following the enlightening discussion, the stage was set for the second lecture by Prof. Amit Roy-Chowdhury, University of California, Riverside (UCR). His talk on "Towards Unsupervised Learning in Computer Vision" further enriched the attendees' knowledge in the field. Prof. (Dr.) Paramartha Dutta from Visva-Bharati expertly chaired this session, providing a platform for participants to actively engage with the speaker and delve deeper into the subject matter.

With the participants' curiosity satisfied and a wealth of knowledge shared, the session drew to a close at 9:00 PM IST. Dr. Somnath Mukhopadhyay member of IEEE CIS EXCOM extended a vote of thanks on behalf of the organizers, expressing deep gratitude to all attendees and contributors for their valuable participation and making the event a success. The entire session was hosted by Dr. Mukhopadhyay, ensuring smooth proceedings and a seamless virtual experience for all.

We extend our appreciation to all the distinguished speakers, session chairs, and attendees for their invaluable contributions, making the Second Session of the IEEE CIS Kolkata Lecture Series an enriching and memorable event. Total 41 participant participated in this event.

IEEE PHOTONICS SOCIETY KOLKATA CHAPTER

- **National Science Day**

National Science Day is celebrated in India on February 28 each year to mark the discovery of the Raman effect by Indian physicist Sir C. V. Raman on 28 February 1928. To honour this event IEEE Photonics Society Kolkata chapter in association with IEEE AP/MTTs Kolkata Chapter and IEEE Calcutta University Student Branch and its Photonics, AP and MTT-S Student Branch Chapters (SBCs) organized IEEE technical Lectures for celebrating National Science Day on 28th February 2023. The program was inaugurated by the Head of the Department of Radio Physics and Electronics, Prof. Ashik Paul. A valuable speech was

given by, Prof. Prasanta Kumar Basu, former Professor of the Institute of Radio Physics and Electronics, CU, Kolkata on the "Raman Effect and Its application to Computers and Communications". Dr. Chinmoy Saha, Associate Professor, Indian Institute of Space Science and Technology, Thiruvananthapuram, Kerala delivered his speech on "Trends, Techniques and Future Challenges in Antennas Engineering for Ground, Space, and Versatile Applications". Mr. Somnath Maity, Ex-Chief General Manager, Calcutta Telephones (BSNL), Dept of Telecom. (DOT), Govt. of India. He delivered his speech on "Evolution of Communication Technology". Total 62 attendees participated in this event.

- **Distinguished Lecture on Computational Nanophotonics: Basics, Challenges and Future Perspectives**

21 st March, 2023, IEEE Photonics Society Kolkata chapter organized IEEE Distinguished Lecture (DL) Talk virtually by Prof. Salah S A Obayya from Egypt on The topic of presentation: Computational Nanophotonics: Basics, Challenges and Future Perspectives. Total 45 participant participated in the event out of them 16 were the IEEE member.

- **Outreach program at Siliguri Girls' High School, Darjeeling to celebrate National Science Day**

3rd April 2023, IEEE Photonics Society Kolkata chapter jointly with IEEE Photonics Society Calcutta University Student Branch Chapter and IEEE Calcutta University Student Branch organized an outreach program at Siliguri Girls' High School, Darjeeling to celebrate National Science Day. The program was aimed to increase awareness and interest in science among the students of different schools. The participants were around 110 in number (Class IX-XII) from- Siliguri Girls' High School and Siliguri Boys' High School.

- **Celebration of International Day of Light**

The event, organized by IEEE Photonics Society Kolkata Chapter, provided an excellent opportunity for young aspiring engineers and students (B. Tech, M.Tech and Ph.D. from all colleges and Universities) to showcase their innovative ideas on the theme "Photonics for Global Well-being" on 16.5.23.

- **Women in Photonics**

The event, organized by IEEE Photonics Society Kolkata Chapter jointly with IEEE Photonics Society CUSB Chapter, to promote women engineers and scientists to do work in the field of photonics on 15th September'23. Total 58 participants are participated in this program.

- **Technical lecture on free space optics and its application**

The event was organized by IEEE Photonics Society Kolkata Chapter jointly with IEEE Photonics Society CUSB Chapter on 27.9.23.

- **Career Fair- Future Focus: Illuminate your career**

"Career Fair," was organized by IEEE Photonics Society Calcutta University Student Branch (CUSB) Chapter, in collaboration with IEEE APS CUSB Chapter, IEEE Photonics Society Kolkata Chapter, IEEE EDS CUSB Chapter, IEEE MTT CUSB Chapter, Astronova Club, and AI and Robotics Club on 11.10.23 and 12.10.23.

- **World Restart a Heart Day: A McMaster Initiative on Bystander CPR**

Dr. Tapas Mondal of Paediatrics Division of Cardiology, Faculty of Health Sciences, McMaster University, and IEEE Photonics Society Kolkata Chapter made a collaborative effort to increase public awareness about the importance of performing bystander chest compression-only CPR after someone collapses. ♣ The aim was to introduce bystander CPR globally through knowledge transfer and hands-on workshops on 16.10.23.

- **A. K. Choudhury Centenary Memorial Workshop**

The symposium unfolded with a captivating session featuring "Reminiscences of Prof. A. K. Choudhury" by Prof. Bhabani P. Sinha. As an IEEE fellow formerly associated with the Indian Statistical Institute, Kolkata, Prof. Sinha shared insightful reflections, offering a nostalgic journey into the past achievements and contributions of Prof. A. K. Choudhury. ♣ The symposium delved into the contemporary challenges of robotics. Dr. Angshuman Chakraborty, representing CDAC Kolkata, guided attendees through the application of "Deep Learning and Robotic Operating System (ROS)" in overcoming the intricate challenges within the field of robotics on 13.12.23.

- **Young Professionals**

The event, organized by IEEE Photonics Society Kolkata Chapter jointly with IEEE Photonics Society CUSB Chapter on 19th December 2023, to promote young professional engineers and scientists to do work in the field of photonics. Welcome address was delivered by IEEE Photonics Society Kolkata Chapter Chairman, Dr. Shampa Guin, followed by three lectures.

IEEE AP/MTTs KOLKATA CHAPTER

- **First ExCom meeting on 6th January**
- **Annual General Meeting on 14th January**
- **ExCom meeting on 12th January**
- **ExCom meeting on 28th Feb**

- **ExCom meeting on 18th May**
- **ExCom meeting on 23rd June**
- **ExCom meeting on 10th October**
- **ExCom meeting on 7th December**
- **IEEE DL Talk**

IEEE AP-MTTs Kolkata Chapter in association with IEEE AP SBC of Indian Institute of Engineering Science and Technology (IIEST), Shibpur, IEEE AP SBC of Calcutta University and IEEE AP SBC of Netaji Subhash Engineering College jointly organized one-day IEEE lecture meeting on "Phased Array Antennas: Space Applications and Challenges" in the Seminar room of IIEST, ECE department on 05.01.2023 from 3 PM to 5 PM. In the inaugural session of this event welcome speech offered by Dr. Susanta Kumar Parui (HOD, Department of Electronics & Tele Communications), followed by was, Dr. Koushik Dutta, Chair, IEEE AP-MTTs Kolkata Chapter and by our speaker Dr. Arun Bhattacharyya. As part of the inaugural session, several membership development activities were conducted by IEEE volunteers led by Dr Koushik Dutta. Dr. Arun Bhattacharyya provided a brief overview of the phased array antenna and its use in modern communications systems after the grand inauguration. In his description of the design criteria and challenges involved in the development of this technology, he goes into great detail. It created a huge interest among the attendees which comprised nearly 25 undergraduate students along with a group of 10 young scientists and faculty members (20 of them were IEEE AP-S members).

- **One Day International Workshop/Webinar On Recent Developments in Electromagnetic Metamaterial from RF through THz**

A one-day international workshop on hybrid mode was organized by the IEEE AP SBC of Kalinga Institute of Industrial Technology Deemed to be University (KIIT DU) in association with IEEE AP/MTT Kolkata Chapter and IEEE Bhubaneswar Sub-section. The event began with a welcome address given by Mr. Niten Kumar Panda, Chair, IEEE AP Society, KIIT SB, followed by Prof. Jyoti Ranjan Panda, Advisor, IEEE KIIT SB, Prof. Sudhakar Sahu, Advisor, IEEE AP Society, KIIT SB, and Prof. Suprava Patnaik, Dean of School of Electronics Engineering. After the anchor read the speaker's biography, the speaker began his presentation. The first speaker Prof. Nagendra Prasad Pathak explained surface plasmon and surface plasmon polariton. How Spoof Surface Plasmon Polaritons (SSPP) work, their applications, and advantages. Our second speaker, Prof. Amalendu Patnaik, began the lecture after the questions-answers session.

Graphene-based THz antenna technology and its various channellings were discussed. Short questions-answer sessions concluded the first half. Third speaker Prof. Pankaj Kumar Chaudhary spoke about metamaterials properties and the phenomena caused by such

materials in great detail. An overview of how these types of materials are used in nanoengineering. Prof. B.N. Basu finished the session with a detailed description of the electromagnetic field and circuit analysis. It has become increasingly important to conduct field and circuit analysis when designing RF and antenna circuits. There were 60 attendees (20 IEEE+ 40 non-IEEE) from different colleges and universities at the event.

- **IEEE Global Microwave and Antenna Conclave on: Scientific Advancements in High Frequency Engineering for a Connected World**

IEEE AP-MTTs Kolkata Chapter organized a one-day workshop titled "IEEE Global Microwave and Antenna Conclave" in association with IEEE AP Student Branch Chapters of Netaji Subhash Engineering College and Calcutta University on 12th Jan 2023 from 9.30 AM to 5.30 PM. The resource persons for this event were Dr. Tapas Chakraborty, Dr. Arijit Majumder, Dr. Nemai Chandra Karmakar, and Dr. P. Hanumantha Rao. As part of their discussion, Dr. P. H. Rao discussed the current activities related to the upcoming 6G technology, including the challenges and special precautions required during the development process. In terms of communication systems, Dr Karmakar discusses upcoming technologies and the supporting systems necessary for adopting them. Dr. Majumdar discussed future technologies as well as various measurement facilities, their testing processes, and how they will fit into the current systems. Dr. Tapas Chakraborty discussed some new human radar technologies and their design challenges. Approximately 55 people (35 IEEE+ 20non-IEEE) attended the workshop, including IEEE members, students, young professionals, and faculty members.

- **Lecture Meeting on Space Technology for the Last Mile Application**

At the onset of the event, our esteemed speaker Shri Tapan Misra was welcomed by Shrabani Mukherjee, Secretary, IEEE MTT-S Student Branch Chapter, CU, with a flower bouquet, followed by a warm welcome address by Prof. Debatosh Guha, President, INAE Kolkata Chapter which marked the beginning of the event. A short biography of the speaker was read by the anchor and then the speaker was called upon to start his lecture. The speaker elaborated on the application of space technology in the present-day scenario and the utilization of remote sensing and IR-imaging in satellite-based systems to get high-resolution images of the earth for the geographical survey and to understand the sustenance of densely populated areas as well as the crop growth and agriculture. The lecture was followed by an interactive question-answer session. Then a surprise session was conducted as a fun event to award two attendees chosen through a lucky draw by Mr. Misra. Then Dr. Kaushik Mandal, Secretary, IEEE AP/MTTs Kolkata Chapter, felicitated the speaker with a small token of appreciation. Finally, in the valedictory session Nilanjan Dutta, Chair, IEEE

MTT-S Student Branch Chapter, CU, delivered the vote of thanks. The event was concluded with a group photo.

- **IEEE One Day Hands-On Workshop**

The event starts with the IEEE membership development program conducted by the IEEE MTTs SBC of Asansol Engineering College. Dr. Koushik Dutta, chair AP-MTTs Kolkata, and member MDC Kolkata Section, describes the benefits of IEEE members and various funding opportunities of IEEE SBCs. The main workshop session started after the tea break. Dr. Dutta gave a brief introduction about his research work domain, followed by a short session on electromagnetic waves and transmission lines along with a hands-on experience on how to use Ansys HFSS and simulate different antenna parameters as well as transmission line parameters. The session was followed by the second speaker, Sk Rafidul, who showcased the design of different antenna designs and finally demonstrated the design of a Pyramidal Horn antenna using Ansys HFSS.

- **IEEE Lecture Meeting (CELEBRATION OF NATIONAL SCIENCE DAY 2023)**

At the onset, the audience was greeted by a warm welcome address by Prof. Ashik Paul, HOD, Radio Physics and Electronics, CU, followed by a welcome note by Prof. Debatosh Guha, Fellow IEEE, which marked the beginning of the event. The first speaker Prof. P K Basu elaborated on the Raman Effect, the working principle of Si Raman Laser and its application in Si Photonics, and the Si Raman Amplifier as a replacement for Er Doped Fibre Amplifier in long haul communication systems. The 2nd speaker Dr. Chinmoy Saha highlighted the recent trends and future challenges in antenna engineering from a generic perspective. He emphasized the growing demands of wireless communication for application in various sectors like space, ground, defense, civilian, and industrial, and gave a comprehensive overview of the different aspects of an antenna and overall system design. Our third speaker Mr. Somnath Maity illustrated the evolution of communication technology and explained the working of modern generation mobile communication (3G, 4G, 5G). These informative lectures were followed by interactive question-answer sessions. Three speakers were introduced by Dr. Bratati Mukhapadhyay, IRPE, Dr. Kaushik Mandal, Secretary, IEEE AP-MTTs Kolkata, and Ms. Shampa Guin, Chair, IEEE Photonics Kolkata Chapter, respectively. Finally, in the valedictory session the Vice-Chair of IEEE Photonics Society SBC, CU delivered the vote of thanks. The event was concluded with a group photo.

- **Electronics Project Competition**

IEEE MTTS Student Branch Chapter of UEM, Kolkata along with the Electronics and Communications Engineering department of the University of Engineering & Management, Kolkata, organized an Electronics Project Competition for the students of the University.

The Faculty Coordinators for the event were Professor Dr. Ayan Chatterjee and Professor Dr. Roopa Hegde, who ensured the graceful management and flow of the said competition. All students were invited to participate in the competition and a significant number of students presented various models developed in the field of electronics of recent trends to showcase their skills. All the project models presented were working successfully and students in the group explained the working of the model, their applications in society, environment well. To this, the students responded actively and were enthusiastic towards the whole event.

- **Inauguration MTT SBCs of IEM and UEM**

The event started with the inauguration of the IEEE MTTs Student Branch Chapters (SBCs) of Institute of Engineering and Management (IEM), Kolkata & University of Engineering and Management (IEM), Kolkata. The inauguration started with the lighting of the lamp by Dr. Goutam Chattopadhyay, Prof. Iti Saha Misra, and Dr. Chinmoy Saha. Participants: 250 (220 IEEE; 30 non-IEEE).

- **Grand Inauguration of IEEE MTT-S HITK SBC & Panel Discussion**

The Grand Inauguration of IEEE MTTS HITK SBC was held on April 10th at the SV Auditorium, Heritage Institute of Technology in Kolkata. The event started with a traditional lamp-lighting ceremony. The event was graced by the presence of esteemed guests, including Dr. Goutam Chattopadhyay, Senior Scientist at NASA-JPL and Chair of IEEE MTT-S MGA, Dr. Chinmoy Saha, Associate Professor at IIST and MTT-S R-10 Coordinator, Dr. Mrinal Kanti Mandal, Associate Professor at E & ECE Department, IIT KGP, and Dr. K N Siddique, a renowned cardiologist in Kolkata. After the lamp-lighting ceremony, our chapter chair Aryan Basu gave a brief introduction to our chapter. He also introduced the eminent guests to the audience. Then, Aditya Sanyal, a member of the IEEE MTTS HITK SBC, presented an overview of the activities that the SBC had undertaken so far. The presentation highlighted the various initiatives and events that the group had organized and participated in, including workshops, seminars, and conferences.

The main event of the day was a panel discussion on the topic of "Opportunities in IEEE MTT-S: Education and Career Perspective for Students and Professionals." The panel discussion was moderated by the student members of IEEE MTT-S HITK SBC and included the other esteemed guests as panelists. The discussion revolved around the opportunities

that the IEEE MTT-S offers to students and professionals, and how the group can leverage these opportunities to enhance their education and career prospects. The panelists shared their insights and experiences, providing valuable advice to the students and professionals present at the event. They discussed the various programs and initiatives offered by the IEEE MTT-S, including scholarships, awards, and publications, and how these programs can benefit the members of the group.

At the end of the discussion, the HOD of the ECE Department, Prof. (Dr.) Prabir Banerjee, expressed his gratitude to the guests for their participation in the event. She thanked them for sharing their knowledge and experience and encouraging the members to make the most of the opportunities offered by the IEEE MTT-S. Overall, the Grand Inauguration of IEEE MTTS HITK SBC was a resounding success. The event provided an excellent platform for students and professionals to learn more about the IEEE MTT-S and the opportunities it offers. The panel discussion was informative and engaging, providing valuable insights and advice to the participants. The event was a great start for the newly-formed HITK SBC and set the tone for the group's future initiatives and events.

- **Inauguration of MTT SBC of NSEC & 2 days' workshop (Microwave And Millimeter Wave Techniques: Current Trends and Future Directions)**

The event started with the inauguration of the IEEE MTTs Student Branch Chapter (SBC) of Netaji Subhash Engineering College (NSEC) and a membership development program. A grand inauguration of IEEE MTT's SBC was held with the lighting of the lamp by Dr. Goutam Chattopadhyay, Prof. Iti Saha Misra, Prof. Debatosh Guha, Dr. Chinmoy Saha, and Dr. Mrinal Kanti Mandal. A welcome address was given by Dr. Koushik Dutta, chair, IEEE AP-MTTs Kolkata Chapter & Head, ECE, NSEC). Prof. Nuno Borges Carvalho, IEEE MTTs President, gave a video message followed by the welcome address of Prof. (Dr.) Amal Kumar Ghosh, Principal, NSEC and Prof. Sukumar Roy, Dean, NSEC. After that, Prof. Iti Saha Misra, Prof. Debatosh Guha, and Dr. Chinmoy Saha addressed the students with their valuable messages. Dr. Goutam Chattopadhyay, the chief guest of our event, then addressed the gathering with a motivational speech. The benefits and opportunities available to IEEE members were discussed. Additionally, he discussed various funding and fellowship opportunities for SBs and SBCs. In addition to reimbursement of memberships for participants with IEEE AP and MTT memberships, there was a special gift for each participant.

After the grand inauguration, Dr. Mrinal Kanti Mandal delivered a lecture to kick off the technical session of the workshop. The industry session was conducted online by Ms. Manisha K of ANSYS CADFEM India Private Ltd. and her team. Sk Rafidul conducted hands-on sessions I and II on both days of the workshop. On day two, Dr. Debasis Mitra and Mr. Dhruba Das were invited to deliver two lectures respectively. In their presentations, they share their practical experience in the design of microwave and millimetre-wave

systems. Resource persons interacted actively with participants and provided theoretical knowledge combined with hands-on activities.

- **IEEE International Seminar on (Fostering technological innovation and excellence for benefit of humanity)**

The event was aimed to spread awareness amongst Faculty and students about IEEE, the world's largest technical professional organization and its benefits by being its Member in suitable category. Dr. Goutam Chattopadhyay, Senior Scientist from JPL - NASA, spoke on the topic "Novel NASA Technologies to Explore the Universe." He discussed in brief about NASA and its various activities. Dr. Chattopadhyay shared his experience working in JPL - NASA and his association with various Noble Laureates. At the end, he discussed briefly discussed about benefits of joining IEEE and IEEE MTT Society. Dr. Chinmoy Saha, Associate Professor - IIST, Thiruvananthapuram, spoke on the topic "Antennas for Ground and Space Applications: An overview." He discussed in brief about IIST and its various activities of both ISRO and IIST. Dr. Saha also discussed at length about IEEE to spread its awareness among students and highlighted the benefits of joining IEEE and IEEE MTT Society. He spoke about the opportunities provided by IEEE MTT Society towards its members for their career upliftment. He also requested the departmental authorities to open an IEEE MTTS Student Branch Chapter at BBIT-Kolkata so that the members can utilize the full benefits of the concerned society. Prof. Dr. Soumen Banerjee proposed the formal vote-of-thanks to the distinguished speakers and to all others whose joint efforts made the international seminar a successful one.

- **Hands-On Workshop on MATLAB & SIMULINK**

IEEE MTTS Student Branch Chapter of UEM, Kolkata along with the Electronics and Communications Engineering department of University of Engineering & Management, Kolkata, organised a Hands-on workshop on Digital Signal Processing & Control Systems using MATLAB and SIMULINK for the students of the University in association with Matworks India Pvt. Ltd. The workshop session was arranged in the computer laboratory of the department of ECE, UEM Kolkata.

The session was conducted by Mr. Pickon Majumdar & Mr. Shubrojyoti Moitra, both being Application Engineers at Elmax Systems & Solutions, North-East service partner to MathWorks India Pvt. Ltd. The Workshop was coordinated by Prof. Mandar Chakrabarti and Prof. (Dr.) Ayan Chatterjee. Faculty members of the ECE department of the university were present all throughout the workshop, to supervise and assist in any means deemed necessary.

- **IEEE Lecture Meeting**

The event was attended by about 60 students, research scholars, and faculty members. The coordinator Dr. Sujit Kumar Mandal first welcomed the speaker and invited Prof. Rowdra Ghatak to introduce him to the listeners. There was a good interaction among the attendees and the speaker, specifically, few research scholars were curious about the lecture.

- **Technical lecture on: GUI-based Rotman Lens Designer: Design Principles, Implementation and Lessons Learned**

The IEEE AP/MTTs Kolkata Chapter in association with IEEE AP-S and MTT-S Student Branch Chapters, University of Calcutta (CU) organised a lecture meeting on GUI-based Rotman Lens Designer on 2nd May 2023 at Institute of Radio Physics and Electronics, University of Calcutta. Dr. Ravi Kumar Arya graced the occasion as the esteemed speaker. He elaborated on Rotman lens which is a beam forming network used in wide-angle scanners to feed an antenna array. However, the design of Rotman lens is not easy as it requires very intricate design equations. The main aim of his talk was to provide a detailed analysis on how to design a Rotman lens using GUI (Graphical User Interface) software, which facilitates the quick design of such lenses. The lens generated by software can even be imported into modern commercial simulators as needed. This informative lecture was followed by an interactive question-answer session. Our respected speaker was felicitated with a small token of appreciation by Dr. Kaushik Mandal, Secretary, IEEE AP/MTTs Kolkata Chapter and faculty advisor, IEEE MTT-S SBC, CU. Finally, in the valedictory session Sk. Rafidul, Chair, IEEE AP-S SBC, CU delivered the vote of thanks. The event was concluded with a group photo.

- **Two Days IEEE Workshop SYNCLIPSE 2023**

Netaji Subhash Engineering College (NSEC), Kolkata has organized a two-day technical program "SYNCLIPSE 2023" on 12th and 13th May 2023 on the college premises. The initiative has been taken by the Department of Computer Science and Business Systems (CSBS) for developing a global acumen among the students. The event was technically sponsored by IEEE AP-MTTs Kolkata Chapter. The program began with a message from the Guest of Honour, Mr Satyam Roychowdhury (MD, TIG) and was followed by another message from Mr Sanku Bose (GCEO, TIG). The Patron of SYNCLIPSE 2023, Dr. Hrishikesh Mandal (Director, NSEC) inaugurated the program with a welcome speech and by lighting the lamps along with all the invited dignitaries and in-house Chairpersons. The prime focus of the program was the seven compelling talks delivered by eminent speakers and industry experts in various fields. The other noteworthy attraction of the program included a spectacular theme-based cultural program performed by the students of the institute. The

General Chair of SYNCLIPSE 2023, Prof. (Dr.) Amal Kumar Ghosh addressed the participants regarding the future scopes. The program has received a huge response in social media, such as Facebook, Instagram and even Linkedin and turned out to be one of the most popular events of 2023. The program concluded with a vote of thanks delivered by the Organizing Chair, Prof. (Dr.) Anirban Kundu (HoD, CSBS).

- **IEEE Lecture Meeting**

The IEEE AP/MTTs Kolkata Chapter in association with IEEE AP-S and MTT-S Student Branch Chapters, University of Calcutta (CU) organised a lecture meeting on Simulation-based Inference using Structured Data: A case study on "Dark Matter Detection" on 12th May 2023 at Institute of Radio Physics and Electronics, University of Calcutta. Dr. Venkat Roy graced the occasion as the esteemed speaker. He elaborated on Simulation-based Inference (SBI) a new paradigm in the statistical inference which finds wide application in several scientific domain like biology, astrophysics, earth sciences, oceanography and many more. He also illustrated about the growing interest in structure-aware inference methodologies, where structure is related to non-Euclidian connectivity patterns (like a graph structure) of unknown physical parameters. The main goal of his discussion was to improve the classical SBI methods by incorporating kernel-based learnable graph 54eionizer (KBLG). He also showed how the 54eionizer has been applied in the problem of SBI of the position of an interaction in a 'dark matter detection' experiment in the field of astroparticle physics. This informative lecture was followed by an interactive question-answer session. Our respected speaker was felicitated with a small token of appreciation by Prof. Debatosh Guha, Faculty advisor, IEEE AP-S SBC, CU. Finally, in the valedictory session Mr. Arjun Ghosh, Treasurer, IEEE MTT-S SBC, CU delivered the vote of thanks. The event was concluded with a group photo.

- **IEEE Distinguished Lecture (APS DL) on Overview of Electromagnetic Selective Structures**

A Distinguished lecture event on "Overview of Electromagnetic Selective Structures" was successfully hosted by IIEST, Shibpur ETCE department at ETCE seminar hall IIEST, Shibpur in association with the IEEE AP & MTTs SBC of IIEST, NSEC, and CU on May 18, 2023.The presentation is delivered by Prof. Zhongxiang Shen, APS DL, from the School of Electrical and Electronic Engineering Nanyang Technological University, Singapore. The lecture was exciting and full of participation from everyone who attended. Prof. Susanta Kumar Parui and the IIEST volunteer team are to be commended for their assistance in ensuring the success of the event in person mode. Some photographic memories have been shared here.

- ### Industrial Visit

Netaji Subhash Engineering College's Department of ECE arranged a one-day visit to Doordarshan for its B.Tech 3rd and 4th year IEEE students on August 28, 2023. Among the accompanying faculty was Dr. Koushik Dutta, Head of the ECE Department and Chair of the Kolkata Section. The students were shown the studios and were given explanations for its way of functioning and designs. Industrial visits are a vital part of any professional course where students are exposed industries of their field. Doordarshan, for any media student, would be a prominent area of interest because it was the first channel of Indian television and hence have seen the evolution of Indian media. This visit has been very enlightening. The students were divided into four groups, each guided by a representative of DD. The students were taken around the Art Station Room, PVR Room, Studio and the Editing Room. They were briefly explained how the videos are shot, synchronized by audio, edited, uplinked to the satellite and downlinked and distributed as programmes to the houses of viewers. The machines and it's technicalities in each room were discussed concisely. The students spent 3-4 hours studying and assimilating valuable information.

- ### IEEE Advanced School of Antennas (International Workshop)

IEEE AP/MTT-s Kolkata chapter and the School of Electronics Engineering, KIIT University, Bhubaneswar jointly organized a summer school cum workshop Advanced School of Antennas (ASA) on AI and ML in Antenna Engineering during June 22-24, 2023. This was the 4th edition of ASA and was sponsored by the IEEE APS Membership and Geographic Activities Committee. The event brought together experts, professionals, and learners from the field of antenna engineering to explore the applications and advancements of Artificial Intelligence (AI) and Machine Learning (ML) with an objective to give basic level ideas of AI and ML in antenna design, optimization, and performance analysis. Total 70 numbers of participants joined all over the India ranging from undergraduate to research scholar and university faculty members. Most of them (95%) were the IEEE AP-S members. The experts and mentors were from leading universities and industries such as Italy, UK, and USA.

- ### Technical lecture on COSMOS: The Final Frontier

The IEEE MTT-S Student Branch Chapter (SBC), University of Calcutta (CU), and Astronova Club, University of Calcutta, in association with IEEE AP/MTTs Kolkata Chapter, organized a lecture meeting on 'COSMOS: The Final Frontier' on 14th July 2023 (Friday), at Institute of Radio Physics and Electronics, University of Calcutta. Dr. Debiprosad Duari graced the occasion as an esteemed speaker. He elaborated on the birth of our universe, the formation of our solar system, the life cycle of stars from their birth as stellar nebulae till their death in supernova explosions, in case of massive stars or white dwarfs, in case of average stars. These supernova explosion results in either neutron stars or black holes. He also gave a brief

overview of the planets in our solar system and their natural satellites, and elucidated how the traces of ice caps in Mars have indulged scientists to search for life in it. He also showed and explained about different celestial objects lying in our Milky Way galaxy and galaxies several light years away. At the end, he briefly explained the huge contribution of technology in the field of astronomy, without which it would have been impossible to explore the deepest mysteries of our universe, and showed how Indian space research is advancing through its Chandrayaan missions, Mars Orbiter Mission, and many more. This immensely interesting and informative lecture was followed by an interactive question-answer session. Our respected speaker was felicitated with a small token of appreciation by our Head of the Department, Prof. Ashik Paul. Finally, in the valedictory session Miss. Suryatapa Ray, member of Astronova Club, CU, delivered the vote of thanks. The event was concluded with a group photograph.

- **Technical lecture on: Recent Trends in RF Design on 20th July**

B. R. Nag Auditorium, 3rd floor, IRPE, University of Calcutta (CU), 92, A.P.C. Road, Kolkata-700009. The IEEE MTT-S Student Branch Chapter (SBC), University of Calcutta (CU), in association with IEEE AP/MTTs Kolkata Chapter, organized a lecture meeting on 'Recent Trends in RF Design' on 20th July 2023 (Thursday), at Institute of Radio Physics and Electronics, University of Calcutta. Dr. Arani Ali Khan graced the occasion as an esteemed speaker. He mainly discussed RF and microwave amplifier design. He elaborated on inter-disciplinary antenna designing, and active antennas. He showed how to design transmitters and receiver antennas backed by amplifiers. He also explained the physical reasoning behind the working of HEMT devices and amplifier designing using HEMT transistors. Finally, he showed some of the works done by his research team and shared his personal experiences in amplifier designing. This interesting and informative lecture was followed by an interactive question-answer session. Our respected speaker was felicitated with a small token of appreciation by Prof. Abhirup Das Barman, senior faculty member of our department. Finally, in the valedictory session Miss. Shrabani Mukherjee, Secretary, IEEE MTT-S SBC, CU delivered the vote of thanks. The event was concluded with a group photograph.

- **Membership Development & Seminer**

The Netaji Subhash Engineering College Student Branch Chapter (NSEC-SBC) organized a membership development programme at the Electronics and Communication Engineering Department, 3rd year class room on 4th August, 2023. NSEC student branch advisor and Chair Kolkata section, Dr. Koushik Dutta opened this program. In his presentation, Dr. Dutta described the benefits of participating in an IEEE Student Branch, which offers opportunities to meet and learn from other IEEE Student and Graduate Student members in

the area, as well as to engage with professional IEEE members. With IEEE Student membership, you can apply for travel grants, scholarships, awards, and much more. You'll be able to advance to the next level with all this support. At that programme, the Chair of the AP/MTTs student branch, the Chair of the MTTs student branch, and other members were present. All of them spoke about how IEEE has benefited them. There is a lot of excitement among the students, and they actively participate with their questions.

- **Membership Development & Seminer**

The Netaji Subhash Engineering College Student Branch Chapter (NSEC-SBC) organized a membership development programme at the Electronics and Communication Engineering Department, 1st year class room on 16th August, 2023. The program was opened by Dr. Koushik Dutta, advisor of NSEC student branch and chair of Kolkata section. He described the many benefits of being a member of an IEEE Student Branch, including meeting other IEEE Students and Graduate Students and engaging with IEEE professionals. What grants, scholarships, awards, and more are available to IEEE Student members.

- **Engineers' Day Celebration**

A warm welcome address was delivered by Prof. (Dr.) Amal Kumar Ghosh, Principal, NSEC and Prof. Sukumar Roy, Dean, Netaji Subhash Engineering College, which marked the beginning of the program. The contribution of M Visvesvaraya to science and technology and why that particular day is celebrated were explained by Dr. Koushik Dutta, chair of the IEEE AP-MTTs Kolkata Chapter and Head of the ECE Department of NSEC. The first speaker Dr. Prasun Ghosal, Asso. Professor, Department of IT, IIEST, Shibpur, India. During his speech, he highlighted his contributions as a pioneer who helped develop India's infrastructure in a significant way. The speaker also discusses our nation's current goals for the current year. The theme for National Engineers' Day in 2023 is 'Engineering for a Sustainable Future' was properly explained by Dr. Ghosal. The event was graced by 70 attendees (40 IEEE+ 30 non-IEEE) from different colleges and Universities. Finally, in the valedictory session and the event was concluded with a group photo.

- **Workshop: Design of antennas for communication system using High Frequency Structure Simulator on 29th September**

The IEEE MTT-S HITK Student Branch Chapter, Department of Electronics and Communication Engineering (ECE) & Institution's Innovation Council of HITK (IIC-HITK) organized a hands-on workshop on Design of antennas for communication system using High Frequency Structure Simulator on 29th September 2023. The workshop aimed to provide students with an opportunity to learn about the practical aspects of antenna design and gain hands-on experience in designing and testing patch antenna. The workshop was conducted by Dr. Satyajit Chakraborty, Scientist-E from SAMEER, Kolkata, who have

extensive experience in the field of RF circuit design. Agenda: The workshop was designed to provide hands-on experience in designing and simulating antennas using industry-standard software tools. The workshop was divided into two parts: theory and practical sessions. The workshop started with an introduction to the basics of RF circuit design.

- **IEEE APS Distinguished Lecturer (APS DL) Talk on: Can perfectly electric conducting obstacles modify the permeability of metamaterial?**

IEEE AP-MTTs Kolkata Chapter in association with IEEE AP/MTTs SBC of Indian Institute of Engineering Science and Technology (IIEST), Shibpur, IEEE AP/MTTs SBC of Calcutta University and IEEE AP/MTTs SBC of Netaji Subhash Engineering College jointly organized IEEE AP-S Distinguished Lecturer (DL) Talk On "Can perfectly electric conducting obstacles modify the permeability of metamaterial?" by Dr. Arun Bhattacharyya, RF Center of Excellence Lockheed Martin Space Systems Littleton, CO, USA at SAMEER Kolkata Centre, Salt Lake Electronics Complex, Kolkata-700091on 10th October,2023 at 3pm to 4pm. In the inaugural session of this event welcome speech offered by Dr. Koushik Dutta, Chair, IEEE AP-MTTs Kolkata Chapter and by our speaker Dr. Arun Bhattacharyya. As part of the inaugural session, several membership development activities were conducted by IEEE volunteers led by Dr Koushik Dutta. Dr. Arun Bhattacharyya provided a brief overview of metamaterials, which can be designed using conducting materials, but they have a very different property from conducting materials. It is explained in detail how the characteristics of metamaterials are integral part of a modern communication system.

- **Education Excursion and Industrial Visit**

An education excursion and an industrial visit to IIT Kharagpur, DRDO Chandipur, and Salua Air Force Radar station was organized for BTech 3rd and 4th year IEEE members at no cost by the Department of ECE of Netaji Subhash Engineering College on 11-12 October 2023. There were several faculty members accompanying the students, including Dr. Koushik Dutta, HOD of the ECE Department, Mr. Tapash Dawn, and Mr. Anirban Chatterjee. Students visited antenna practical measurement sites and were shown how measurements are carried out by research scholars at KGP's IIT. Dr. Mrinal Kanti Mandal, Asso. Professor, IIT Kharagpur, demonstrated the theory behind each device. A variety of measuring instruments is demonstrated after his session, along with a prototype antenna that has been fabricated. IEEE IIT student chapters and NSEC students interact, sharing ideas, and enjoying lunch on the same campus.

- **3rd IEEE International Conference on "Applied Electromagnetics, Signal Processing & Communication (AESPC-2023)**

The School of Electronics Engineering, KIIT University, Bhubaneswar and IEEE AP/MTT-s Kolkata chapter jointly organized the 3rd IEEE International Conference on "Applied Electromagnetics, Signal Processing & Communication (AESPC-2023)" during 24-26 Nov

2023 at KIIT University, Bhubaneswar, India. The conference was organized in a hybrid mode where experts, professionals, and learners participated from the fields of electromagnetics, Signal processing & communication engineering. Over 150 participants from India and abroad attended the conference. A total of 13 keynote lectures were delivered where speakers and experts were from leading universities and industries such as India, UK, and Italy. Over 100 contributory papers were presented and accepted for possible publication in IEEE Explore in the conference proceedings.

- **8th IEEE International Conference on "Computer and Devices for Communication (CODEC 2023)"**

Institute of Radio Physics and Electronics, University of Calcutta, India organized the 8th IEEE International Conference on "Computer and Devices for Communication (CODEC 2023)" during 14-16 Dec 2023 at Ramakrishna Mission Institute of Culture, Golpark, Kolkata, India. The conference was technically sponsored by IEEE AP/MTT-S Kolkata Chapter, IEEE Kolkata Section, IETE, IEEE EDS Kolkata Chapter, IEEE Photonics Kolkata Chapter, WIE Kolkata, Computer Society of India, and IEEE SBCs of CU. Over 450 participants from India and abroad attended the conference. The conference includes 40 keynote lectures and invited talks, 5 workshops, and special sessions by AP-MTTs Kolkata Chapter and WIE Kolkata chapter. Over 120 contributory papers were presented and accepted for possible publication in IEEE Explore in the conference proceedings.

- **IEEE Technical Event on:"Meet Your President, IEEE MTT-S" followed by A Panel Discussion on "Latest Trends, Techniques and Opportunities in Microwave & Antenna Technologies"**

IEEE MTT-S HITK Student Branch Chapter & IEEE AP MTT Kolkata Chapter organized "Meet Your President, IEEE MTT-S" followed by a Panel Discussion on "Latest Trends, Techniques and Opportunities in Microwave & Antenna Technologies" on 15th December 2023. The event was attended by 35+ students. The session was hosted by Saumodip Das and Ankita Chakraborty (both ECE, 3rd SBC members), and commenced with a welcome note by the Principal of HIT-K, Prof. Dr. Basab Chaudhuri. The gathering was briefed by IEEE MTT-S Vice Chapter Chair, Rito Gupta about the recent SBC activities; and was followed by felicitation of the distinguished speakers. The first speaker of the event was Prof. Dr. Nuno Borges Carvalho, Professor, Universidade de Aveiro, Portugal, and the current IEEE MTT-S President. Dr Nuno. laid stress on why IEEE MTT-S is rechristened from 'Techniques' to 'Technologies' and stressed the need for such an inclusive name. He highlighted some of the important activities conducted by IEEE MTT-S and AP-S, addressed how microwave engineering is relevant in everyday lives, and welcomed the attendees to engage in more upcoming IEEE MTT-S events. Dr. Debabani Choudhury, Principal Research

Director, Intel Labs, shared glimpses of her life, and her struggles as an Indian woman in NASA, and motivated the students to strive ahead. Dr. Chinmoy Saha, IEEE MTT-S Region-10 Coordinator; and Dr. Jawad Y. Siddiqui Visiting Researcher, Queen's University, Canada, also provided their valuable insights.

All the distinguished guests stressed the importance of Microwave engineering in everyday life, shared their personal experiences, and highlighted the initiatives taken by IEEE, and IEEE MTT-S Region-10 community in this regard. The event also marked the official formation of the IEEE MTT-S SBC of Budge Budge Institute of Technology and was attended by the Director, the Principal and the faculty advisor, IEEE MTT-S SBC of Budge Budge Institute of Technology. The session concluded with an interactive session wherein the role of Microwave technology in the medical sector, the interplay between Microwave engineering and AI, the potential of Microwave engineering in India, future challenges/opportunities and other topics were discussed.

- **APS DL on: Electromagnetic Diffraction Modeling and Simulation**

IEEE MTTs Student Branch Chapter of JU organized an APS DL in association with IEEE AP/MTTs Kolkata Chapter on June 22, 2023. Prof. Dr. Levent Sevgi (APS DL), Atlas University, Istanbul, Turkey delivers a lecture on "Electromagnetic Diffraction Modeling and Simulation". The programme started at 3:00pm. Interested students from different schools and colleges like Calcutta University, Indian Institute of Space Technology, Rajabazar Science College, Acharya Prafulla Chandra College attended the event. Finally, the speaker was felicitated by Prof. Bhaskar Gupta, Jadavpur University (Faculty Advisor of IEEE MTTs SBC, JU) after his lecture and the Q&A session. Participants: 34 (20+14)

- **Inauguration of Smart Class Facility at Konnagar Hindu Girls' High School, Konnagar, West Bengal on 16th December 2023**

- **IEEE Talk on: Mobile Satellite Communications for Humanitarian Assistance on 27th December 2023**

IEEE CSS/IMS KOLKATA CHAPTER

- **Invited Talk on "Image Processing for Precision Health Care"**

IEEE Joint CSS-IMS Kolkata Chapter and IIIT Guwahati jointly organized an Invited Talk on "Image Processing for Precision Health Care" on March 13, 2023. At the outset, Dr. Surajit Panja, Executive Committee Member of IEEE Joint CSS-IMS Kolkata Chapter, briefed the activities of the Chapter and introduce the speaker, Dr. Gajendra Kumar Mourya, Assistant Professor, NorthEastern Hill University, Meghalaya. Dr. Shovan Barma, HoD ECE, IIIT

Guwahati felicitated the speaker with Gamocha. Then, Dr. Mourya delivered his lecture on "Image Processing for Precision Health Care." In his talk, Dr. Mourya primarily focused on the role of medical image processing in planning the diagnosis and therapeutic procedures in the Indian scenario. He discussed various real-time challenges that need to be addressed to achieve precision healthcare measures. The Talk was of a duration of one and a half hours. At the end Dr. Rusha Patra, Assistant Professor, Dept. ECE, presented a memento to Dr. Mourya as a token of appreciation. Total 38 participants have joined virtually in this meeting.

- **FDP on Recent Advancement on Control & Instrumentation**

Department of Electrical & Electronics Engineering Department (EEE), Institute of Engineering & Management (IEM) has organized a five-day Faculty Development Program (FDP) on "Recent Advancement on Control & Instrumentation" from July 10 to 14, 2023. The program was technically co-sponsored by IEEE Joint CSS-IMS Kolkata Chapter. The main aim of this FDP is to focus on the area of Computational intelligence and their application in the field of Control, Instrumentation, Bio-Medical, Power Systems and Robotics. The FDP began with energetic & motivating inaugural session with a speech from President Sir and Principal Sir. FDP included nine (9) speakers, 180 participants from all over India form different IITs, NITs, State Universities. Also we have participants from Woosong University, South Korea. The conference was concluded in Valedictory session on 14th July 2023.

- **One Day Workshop on Recent Development of Electrohydraulic system and Control**

Center for Robotics and Mechatronics and Student activity Centre, NIT Meghalaya in Collaboration with IEEE Joint CSS-IMS Chapter, Kolkata, India organized One Day Workshop on Recent Development of Electrohydraulic system and Control Under the aegis of Amrit-Kal Vimrsh, A resurgent India-A Viksit Bharat@2047 on Sept. 30,2023. Two lectures are delivered such as, Design of wind turbine system controller for enhancement of performance and Energy saving in off-road vehicles using leakage compensation technique. The first lecture covered application of Electrohydraulic system in horizontal axis wind turbine and what are the different control techniques are used in wind turbine system. Further the details about wind turbine pitch control system discussed. Various control strategies applied to the wind turbine pitch control system Is discussed. The second lecture delivered the hydraulics in a excavator and its performance with leakage and leakage compensation. Further the effect of controller design on the performance of the excavator is discussed. Total 57 participants have joined in this two-day long event.

- **"Simulating Soft Landing in Real Time-A Hardware-in-loop Approach"**

IEEE Joint CSS-IMS Kolkata chapter and Department of Electrical Engineering, IIEST Shibpur organized a lecture of recent success of Chandrayaan-3 a project by Indian Space Research Organisation (ISRO) on October 10, 2023. The topic was of this lecture "Simulating Soft Landing in Real Time-A Hardware-in-loop Approach", which is the one of the key factors of successful landing of Chandrayaan-3 lander "Vikram". This lecture was delivered by Prof Amitava Gupta and Prof Sayan Chatterjee, Jadavpur Univesity, who were responsible for the successful completion of the project on soft landing of lander "Vikram". The event was started with inaugural speech by Prof Anindita Sengupta, Head of the department of Electrical Engineering, IIEST. She also give brief description of the activity of IEEE Joint CSS-IMS Kolkata chapter. The lecture was ended with small interaction/Q&A session between the speaker and the audience followed by the vote of thanks by Prof Roshni Mati. Total 51 participants have joined in this two-day long event.

- **Symposium on "MEASUREMENT ASPECTS IN NEW-AGE POWER ELECTRONIC SYSTEMS"**

IEEE Joint CSS-IMS Kolkata Chapter organized a Symposium on "MEASUREMENT ASPECTS IN NEW-AGE POWER ELECTRONIC SYSTEMS" on November 25, 2023. The Symposium was held in ONLINE mode and it comprised two Expert Talks by two very eminent academicians in the domain of Power Electronics and measurement aspects. Each Expert Talk was of duration of one and a half hours. At the outset, Prof. Kaushik Das Sharma, Chairman, IEEE Joint CSS-IMS Kolkata Chapter, delivered the Inaugural Address. Then Dr. Olive Ray, Assistant Professor, Department of Electrical Engineering, Indian Institute of Technology, Bhubaneswar, India, delivered his Expert Lecture on "Current Estimation in High-Frequency Power Electronic Converters." In his talk, Dr. Ray primarily discussed the necessity of current programmed control for power flow management of power electronic converter. Then, Dr. Ray focused on how current estimation can be applied as an alternate means for current mode control in DC-DC converters. Dr. Ray's lucid presentation and great explanation skills turned the session into a very lively one, marked by extensive audience interactions in the end. Next, another very active researcher and academician, Dr. Soumya Shubhra Nag, Assistant Professor, Indian Institute of Technology, Delhi, India, delivered his Expert Talk on "PCB embedded Rogowski Coil based current sensing in wide band-gap power converters". He mainly concentrated on the requirement of high bandwidth current sensing for the wide bandgap switching devices. His session was equally informative in that he talked about the development of a PCB- embedded non-invasive Rogowski coil as well as the signal processing and instrumentation circuit for overcurrent sensing. This session also concluded with a lively audience interaction and an extensive question-answer session. The Symposium came to a conclusion when Prof.

Amitava Chatterjee, Executive Committee Member, IEEE Joint CSS-IMS Kolkata Chapter, delivered the Vote of Thanks. Initially, there were 127 registered participants for this Symposium. Finally, 40 participants attended the Symposium and out of which 14 were IEEE members and 26 were non-IEEE members. This included 04 IEEE-IMS members and 03 IEEE-CSS members. The audience comprised a large population of enthusiastic undergraduate and graduate students, research scholars, young faculties as well, and senior Professors. Total 40 participants have joined in this two-day long event.

- **Invited Lecture Series**

Department of Applied Physics, University of Calcutta organized an invited lecture series on December 12, 2023. The program was started with an introductory session delivered by Prof Jitendra Nath Bera. Two lectures were delivered in this program. The topic of the first lecture was "Challenges of Forecasting Weather Extremes: A Combined Approach of AI and NWP" which was delivered by Dr. Partha Sarathi Mukhopadhyay. He mainly discussed the application of machine learning techniques and artificial intelligence and its advantages, and disadvantages in weather forecasting. The next lecture was delivered by Dr. Anindya Nag on the topic "Flexible wearable sensors: Current status and future opportunities". This lecture was on recent developments in wearable biomedical sensors and the materials, and their challenges. Both lectures comprised a small interaction/Q&A session between the speakers and the audience followed by a vote of thanks by Mr. Aritra Ghosh. Total 20 participants have joined in this two-day long event.

IEEE DEIS KOLKATA CHAPTER

- **First Executive Committee Meeting**

The First Executive Committee Meeting of the DEIS Chapter of IEEE Kolkata Section, held on Tuesday 17 th October 2023 at 5-15 PM, in online Google Meet Software Platform. The meeting was attended by 6 Exe-Com members Kolkata Section-2023.

- **Second Executive Committee Meeting**

The Second Executive Committee Meeting of the DEIS Chapter of IEEE Kolkata Section, held on Wednesday 22 nd November
2023 at 5-30 PM, in online Google Meet Software Platform. The meeting was attended by 6 Exe-Com members.

- **Novel Condition Monitoring Techniques for Power Cables on 27th March 2023**

A technical review on Power Cables performance in terms of ageing (mechanical, physical or chemical parameters) of the
insulation materials, Dielectric property, power signature (how the current and voltage), Prevent electrical failures also to provide practical exposure of testing the Power Cables

& to the extent for effective utilization of transmission system by reducing the losses and transmit the power economically.

- **Partial Discharges: Challenges in Measurement and Interpretation on 4th October 2023**

Conventional PD measurements are interpreted by studying phase resolved PD (PRPD) patterns. While PD measurement is indeed a fundamental tool for insulation system diagnostics, measurement and interpretation of PD data are still obstacles which continue to baffle engineers. Online measurement of PD is even more complex due to the predominance of noise which can make it difficult to measure PD. Measuring PD under DC voltage is even more complex since the lack of phase correlated PD does not allow even an expert to separate PD from noise easily, or one PD source from another. The lecture successfully addressed some of these issues, and facilitated better understanding of signal processing techniques in PD measurement and interpretation.

- **A Motivational Speech regarding "How to Choose the Right Path for Higher Studies Among Lucrative Alternatives" at the Event 'PROYOG 2023' 4th October 2023**

A Motivational Speech regarding "How to Choose the Right Path for Higher Studies Among Lucrative Alternatives".

- **High Voltage Testing and Testing Equipment on 7th November 2023**

High voltage testing is a must to check the reliability of electrical insulation and insulation coordination for any electrical equipment and component. Different testing methods are adopted to test electrical equipment and components in the manufacturing and commissioning stage. We will discuss different testing methods as stipulated by national and international standards with testing equipment used for the evaluation of the insulation system. Since the Capacitance and loss factor of the insulation system of different electrical equipment and components under test varies widely, testing methodology and selection of test equipment are extremely important. We will also discuss the problem of testing for systems with high capacitance such as cable and corresponding solutions. We will also discuss safety precautions during high-voltage testing.

IEEE PES KOLKATA CHAPTER

Administrative
Total Number of Administrative Committee meetings: 4
- The Annual General Meeting of PES Chapter of IEEE Kolkata Section was held on 14th January, 2023 **06:00 P.M. (IST)** at **Calcutta Club,** 241, Acharya Jagadish Chandra

Bose Rd, Gokhel Road, Elgin, Kolkata, West Bengal 700020. Fifteen members attended this meeting.

- The 1st Administrative Committee meeting of the PES Chapter of IEEE Kolkata Section, 2023 was held at Hotel **Mocambo, Park Street, Kolkata** on 4th April. Ten members attended this meeting.

- The 2nd Administrative Committee meeting of the PES Chapter of IEEE Kolkata Section, 2023 was held on October 09, 2023, at 5.30 PM at the Seminar Room of High Tension Laboratory, Electrical Engineering Department. Nine members attended this meeting.

- The 3rd Administrative Committee meeting of the PES Chapter of IEEE Kolkata Section, 2023 was held on December 06 2023, at 6.15 PM at the Seminar Room of High Tension Laboratory, Electrical Engineering Department. Ten members attended this meeting.

Subsection, Student and Affinity Group Activities

1. IEEE Power & Energy Society (PES) Kolkata Chapter jointly with Jadavpur University EE Students' Forum organized a two-round competition "**Inquizzitive**" with final round hosted at Electrical Engineering Department,Jadavpur University in our Annual Techno-Managerial Meet CONVOLUTION 8.0 on 26.03.2023

2. VEGA Workshopthe **Nationwide Roadshow** on Digital India **RISC-V - VEGA Processors**, organized on the 17th and 18th November, 2023, at Netaji Subhash Engineering College, Kolkata. This program will be jointly organised by IIC NSEC, EE department of NSEC, IEEE PES Kolkata Chapter.

3. Power & Energy Society (PES) Kolkata Chapter organized a techno-management fest, "**Kritanj**" to be held 11th and 12th May 2023 atNarula Institute of Technology.

Professional Activities

Technical Co-sponsored Conferences

Power & Energy Society (PES) Kolkata Chapter had a technical co-sponsorship in the National Conference "**Luminescence 2023**" that was held on 26th and 27th May, 2023 at Jadavpur University in association with Indian Society of Lighting Engineers (ISLE).

II. Distinguished Lecturer Program

Distinguished Lecture Program-I

The Power & Energy Society Chapter of IEEE Kolkata Section organized PES Distinguished Lecture (DL) Program on **Advanced Prediction Techniques Applied to Smart Grids** in online mode on **Tuesday, 25th July, 2023, 3:00 P.M. (IST)**. Speaker was Prof. C.Y. Chung, PhD, P.Eng, FHKIE, FAAIA Chair Professor of Power Systems Engineering and Head, Founding Director of Research Centre for Grid Modernization, Department of Electrical Engineering, The Hong Kong Polytechnic University, HK SAR, China.

Distinguished Lecture Program-II

The Power & Energy Society Chapter of IEEE Kolkata Section in association with CSIR-CMERI, Durgapur organized PES Distinguished Lecture (DL) Program on **Dynamic Modelling for Analysis of Wind Farm and Grid Interaction** in physical mode on **Thursday, 21/12/2023, 3:30 PM to 4:30 PM (IST)**. Speaker was Prof. Bikash Pal, Fellow IEEE, Fellow Royal Academy of Engineering, UK, Professor of Power Systems, Department of Electrical and Electronic Engineering, Imperial College of London, UK. Venue was M.M. Suri Hall, CSIR-CMERI, Durgapur.

III. Technical Activities:

1. Power & Energy Society (PES), IEEE, Kolkata Section jointly with Gargi Memorial Institute of Technology (GMIT) Electrical Engineering (EE) department of Gargi Memorial Institute of Technology (GMIT) organized a One Week Virtual **FacultyDevelopment Programme (FDP)**on "**Present Scenario and Future Scope of Research and Advancement in the field of EVs &Renewable Energy Sector**".

2. The Electrical Engineering Department of St. Thomas' College of Engineering & Technology (STCET), jointly with the IEEE PES Kolkata Chapter organized a Technical Seminar on "**Smart Grid & Smart Home for Energy Conservation**" on 27th April, Thursday, 2023.

IV. Educational Activities:

Power &Energy Society (PES)Kolkata Chapter and Educational Activity Sub-committee of IEEE Kolkata Section organized science and technology project competition based program named **Proyog 2023** at Electrical Engineering Department, Jadavpur University on 4thOctober, 2023.

Industry-academia activities:

1. Power & Energy Society (PES) Kolkata Chapter and IEEE Kolkata Section and Industry - Academia program from the along with Electrical Engineering Department, Jadavpur University organized a two-day hands-on workshop on VEGA Microprocessor ecosystem during 17-18 April, 2023 at Electrical Engineering Department, Jadavpur University. For this a team of 3-scientist from CDAC (**Center for Development and Advanced Computing, Trivandrum, Govt. of India**) came and nicely provided a hands-on training on the indigenous **VEGA Microprocessor** boards. There were 56 participants (40 IEEE members + 16 Non-IEEE members) attended the workshop successfully.

2. IEEE Power and Energy Society Kolkata Chapter conducted a one-day plant visit to the Purulia Pump Storage project on 1st April, 2023. The workshop was a step in the Net-Zero journeys and is focused on industry-academia collaboration to identify research areas and innovation in carbon footprint reduction. The full day workshop consisted of **power house and overall visit** by students along with faculty members.

Social activities:

Power & Energy Society (PES) Kolkata Chapter conducted a social meet at Hotel **Mocambo, Park Street, Kolkata** on 4th April.

IEEE SPS KOLKATA CHAPTER

The SPS Kolkata Chapter has been formed on 10th of March 2017, under IEEE Kolkata Section to look after the regional activities of the SPS Society. The aim of this Chapter is to provide a local platform and forum for the members and also for the individuals, industries and academia to share their ideas and knowledge in the science of Signal Processing. Signal processing has immense importance in every sphere of life. It is the science behind our digital lives. Signal processing is at the heart of our modern world, powering today's entertainment   and tomorrow's technology. The geographic area under the jurisdiction of IEEE Kolkata Section has several groups active in the area of Signal Processing. This chapter provides a platform for close interaction between academicians, researchers and practicing engineers.

- **First Executive Committee Meeting**

The First Executive Committee Meeting of the Signal Processing Society Chapter of IEEE Kolkata Section was held on Wednesday 08th March 2023 at 6-30 PM, in High Voltage Laboratory, Electrical Engineering Department, Jadavpur University, Kolkata-700032, India. The meeting was attended by 8 Exe-Com members.

- **Second Executive Committee Meeting**

The Second Executive Committee Meeting of the Signal Processing Society Chapter of IEEE Kolkata Section held on Wednesday 12th July 2023 at 6-00 PM, at the High Tension Laboratory, Jadavpur University, Kolkata-32. The meeting was attended by 10 ExeCom members.

- **Third Executive Committee Meeting**

The Third Executive Committee Meeting of the Signal Processing Society Chapter of IEEE Kolkata Section, held on Thursday 14th September 2023 at 6-00 PM, at the High-Tension Laboratory, Jadavpur University, Kolkata-32. The meeting was attended by 08 ExeCom members

- **Fourth Executive Committee Meeting**

The Fourth Executive Committee Meeting of the Signal Processing Society Chapter of IEEE Kolkata Section was held on Friday 22th December 2023 at 6-15 PM, in High Voltage Laboratory, Electrical Engineering Department, Jadavpur University, Kolkata 700032. The meeting was attended by 8 Exe-Com members.

- **AlgoManiac of Convolution 2023**

A two-round coding-contest "AlgoManiac" with final round hosted at Electrical Engineering Department, Jadavpur University in our Annual Techno-Managerial Meet CONVOLUTION 8.0 on 25.03.2023, The coding-contest was sponsored by IEEE Signal Processing Society, and JUEE Students' Forum.

There were two rounds:

Round 1- Online Coding contest hosted on Hacker Rank platform with 257 participants. Out of which top 20 were short-listed for round 2.

Round 2- Held in Department of Electrical Engineering, Jadavpur University, Top 3 performers were judged by our judges.

- **Workshop: Empowering India's Technological Future: Nationwide Roadshow on VEGA Processors.**

A revolutionary step towards embracing technological advancements unfolded on the 17th and 18th of November 2023 as the Nationwide Roadshow on Digital India RISC-V - VEGA Processors swept across 15 centers throughout the nation.

A collaborative effort between IEEE India Council, C-DAC, and MeitY, this grand event aimed at empowering minds and fostering technological prowess at 15 distinguished centers across India. Netaji Subhash Engineering College proudly stood as the epicenter for Eastern India, hosting a captivating exploration into the VEGA series and ecosystems.

With a promise of immersive experiences comprising hands-on sessions and profound theoretical insights, the event at Netaji Subhash Engineering College, Kolkata, was a beacon for aspiring minds. Participants were privileged to glean expertise from the very pioneers at the forefront of VEGA Processor development.

- **Technical Lecture Meeting: Radio frequency remote control - An innovative way to decode and use a 433 MHz RF remote control on 21st April**

- **Workshop: One Day Workshop on Modeling on Electrical Power System Network by MATLAB/SIMULINK on 18th May**

One day workshop on Modeling of Electrical Network by MATLAB/ SIMULINK. was held on 18 May 2023 at High Voltage Laboratory, Electrical Engineering Department, Jadavpur University. There were 28 participant (UG and PG students) in this workshop.

- **Awareness on Professional Membership and Engineering Research on 1st August**
- **3rd IEEE Applied Signal Processing Conference, 2023**

IEEE Signal Processing Society and Electrical Engineering Department, HIT (Haldia Institute of Technology) organized the 3rd IEEE Applied Signal Processing Conference, 2023 from 24th November 2023 to 25th November 2023 at Haldia Institute of Technology, Haldia. More than 350 participants attended this conference which included research scholars, faculty and

scientists from different colleges/universities from India and abroad along with delegates from renowned industries.

- **5 days Hands-On Workshop on "Machine Learning: An Industry Academia Initiative**

The 5 days Hands-On Workshop on "Machine Learning: An Industry Academia Initiative" is held in the Department of Electronics and Communication Engineering, NIT Rourkela, on December 11 to 15, 2023. A total of 24 speakers delivered lectures in this workshop.

- **Synergism of Signal Processing and Machine learning tools for Condition monitoring of electrical and biomedical systems**
- **Stem Activities "Proyog 2.0" on 4th October**
- **Title of the Lecture: Contribution of women in Signal Processing: An Indian Perspective on 17th August**

Technical Essay competition for UG and PG female students on the topic of 'Contribution of women in Signal Processing: An Indian Perspective'. There were 12 participants in these activities.

IEEE SSCS KOLKATA CHAPTER

- **Talk on Verification Techniques**

24th March 2023, IEEE SSCS Kolkata chapter organized a technical talk on verification techniques at the Meghnad Saha Institute of Technology. The lecture was delivered by Debadi Prasanna Gongopadhyay, Design & Verification Engineer, Tech Mahindra-Cerium Systems. It was an interactive session. More than 40 students and faculties of the institute attended the event.

IEEE GRSS KOLKATA CHAPTER

- **2023 IEEE YP AI/ML Hackathon 1.0 : GRSS Kolkata Chapter**

This hackathon was focused on Young Professionals and consists of a problem from the geoscience domain. The problem was designed to test skills on a variety of AI/ML tasks including data cleaning, data visualization, algorithm design, etc.

- **IEEE Day 2023 Special Webinar**

Event Date and Time: October 03 2023, 6 – 7.30 PM (IST)
No. of Participants: 26 (IEEE Members: 5, Guests: 21)
Webinar 1 (6 – 7 PM):
Title of Talk: Geo-Spatial Data Analytics using Deep Learning
Speaker: Dr. Vijender Busi Reddy, Scientist, ADRIN, ISRO, Dept. of Space, GoI
Webinar 2 (7 – 7.30 PM):
Title of Talk: IEEE and GRSS Membership and its benefits.

Speaker: Mr. Munir Mohammed, Senior Manager – Standards, IEEE

- **GRSS Kolkata Chapter Mini-Olympiad 2023**

The 2nd Mini Olympiad aims at providing an opportunity to the young and talented youth to showcase their knowledge in the field of Remote Sensing applications in climate studies on 7th October 2023.

- **GRSS Kolkata Chapter Talkathon 2023**

Initial Schedule for Talkathon:
Release of Advertisement: 18th September 2023
Submission of Abstract: By 8th October 2023
Scrutiny and Communication of selected abstracts: By 14th October 2023
PPT & Video on the presentation topic: By 24th October 2023
Decision on final selection of topics: By 1st November 2023
Registration for the Talkathon: By 5th November 2023
Event Date: 18th November 2023

- **International Workshop on Machine Intelligence: Reliability Analysis and Applications**

Event Date: January 13, 2023
Venue: IDEAS-TIH, Indian Statistical Institute, Kolkata
No. of Participants: 60

- **National Seminar titled "Information and Knowledge System (NSIKS-2023)**

On 10th and 11th March 2023, National Seminar aimed to gather both researchers and practitioners in the fields of Information Systems, Artificial Intelligence, Knowledge Management and Decision Support. NSIKS seeks to promote discussions on various organizational, technological, and socio- cultural aspects of research in the design and use of information and knowledge systems in organizations. Considering the large amount of data, information, and knowledge created and used in the organizations, especially with the evolution of information and communications technology platforms, organizations under the process of digital transformation constantly search for innovative concepts and creative applications. More importantly, NSIKS aims beyond the predominant role of technologies, seeking discussions on the essential interactions between individuals, who are the ultimate technology users.

- **One Day Seminar on Earth Observation Data Analysis**

Event Date: April 26, 2023
Venue: Indian Statistical Institute Kolkata, West Bengal, India
No. of Participants: 40 (IEEE Members: 25, Guests: 15)

- **Two Day Workshop on "Remote Sensing and Their Applications"**

A two-day workshop on "Remote Sensing and Their Applications" organized by the IEEE GRSS Kolkata Chapter in collaboration with the IEEE BBSR WIE AG and Siksha 'O' Anusandhan Deemed to be University, on June 2nd and 3rd , 2023. The workshop aimed to explore the various facets of remote sensing and its practical applications in today's world.
The event witnessed the presence of eminent speakers, including Prof. Barun Raychoudhary from Presidency University, Kolkata, Prof. U. C. Mohanty, a distinguished Professor at the Centre for Climate and Smart Agriculture at SOA Deemed to be University, Prof. Avik Bhattacharya from the Centre of Studies and Resources Engineering at IIT Bombay, and Prof. Debadatta Swain from the School of Earth Ocean and Climate Sciences at IIT Bhubaneswar. Their expertise and knowledge added immense value to the discussions and presentations throughout the workshop.

- **A training programme on Earth Observation (EO) Data Analytics for Disaster Management Focusing on Flood and Drought on 10th -14th July 2023**

Water is a necessary component for life, sustenance and requires effective management strategies for a sustainable future. The distribution of water is non-uniform over space and time depending upon the local geographical conditions, but water-based (hydrological) events like floods and droughts are sweeping across the globe in recent years. Over the past two decades, a phenomenal rising trend of floods and droughts are noticed across the entire South Asia with a concern for increasing frequencies of flashy events from short but high-intensity precipitation or dry spells, respectively. The global average annual loss from disasters is estimated to rise from a yearly average of US$ 260 billion in 2015 to US$ 414 billion by 2030. This puts economic growth, poverty reduction, peace, or, commonly, the achievement of Sustainable Development Goals at risk. It is essential to map the nature and extent of the flooding and drought events to develop mitigation and adaptation policies at the local to national scale. This could help to provide valuable information for the implementation of different policy frameworks, for instance, Sendai Framework for Disaster Risk Reduction (SFDRR), United Nations Sustainable Development Goals (UN-SDGs), National/ State Action Plan for Climate Change (NAPCC/ SAPCC). Geospatial sciences, earth observation data, and the latest techniques related to data sciences have opened the gates of opportunity to monitor and assess the losses due to disasters, including floods, droughts and others. Objectives of the course focus on understanding the physical processes

related to floods and droughts and emphasize the current capabilities using open-source datasets, freely available cloud-computing web platforms and other advanced operational tools relevant to these applications.

- **ImpactGeo 2023 Talk Series: Unleashing the Power of Earth Observation for a Sustainable Future, Webinar 1 on 29th July 2023**

This lecture emphasizes the utilization of Earth Observation (EO) data for mapping flood and drought risks. It investigates the significance of using satellite imagery and remote sensing technologies to gather comprehensive and up-to-date information on flood and drought risk mapping. By harnessing EO data, participants will learn how to identify vulnerable areas, map floodplains, and locate regions prone to drought with remarkable accuracy. Ultimately, the lectures aim to equip attendees with the knowledge and tools necessary to utilize EO data for mapping flood and drought risks effectively.

- **ImpactGeo 2023 Talk Series: Unleashing the Power of Earth Observation for a Sustainable Future, Webinar 2 on 26th August 2023**

In the dynamic landscape of today's challenges, harnessing the potential of geospatial data has become paramount in shaping resilient solutions for multifaceted challenges. This presentation delves into the dynamic interplay between Geospatial Data, Automation, and Artificial Intelligence (AI) to forge innovative pathways towards enhanced resilience. Exploring real-world applications across disaster management, climate adaptation, and urban planning, we unveil how automation and AI augment geospatial insights, enabling data-driven decisions with remarkable precision and speed. By synergizing these transformative technologies, we unveil a future where resilient solutions emerge from the convergence of data's depth, automation's efficiency, and AI's cognitive prowess.

- **One day workshop on "Unleashing Earth Observation Insights for flood and drought Management: Data to build Resilience" on 15th September, 2023**

This event marks the conclusion of the "Training Program on Earth Observation (EO) Data Analytics for Disaster Management, with a specific focus on Flood and Drought". The presentation day will be a full-day program showcasing participants' collective efforts and achievements through the hackathon followed by the 5-day training programme held during 10-14 July. We anticipate an informative and enriching event that underscores our commitment to advancing our expertise in Earth Observation data analytics for disaster management.

- **ImpactGeo 2023 Talk Series: Unleashing the Power of Earth Observation for a Sustainable Future, Webinar 3 on 30th September 2023**

- **One Day Online Workshop: Flood-Prone Riverine Ecosystem Management in Assam on 7th October 2023**

This workshop welcomes researchers, policymakers, environmentalists, and practitioners engaged in flood management and ecosystem preservation in Assam. Participants will gain practical knowledge and skills to harness EO data effectively for flood-prone riverine ecosystem management. They will be better equipped to contribute to sustainable practices, disaster resilience, and informed decision-making in Assam's unique context.

- **ImpactGeo 2023 Talk Series: Unleashing the Power of Earth Observation for a Sustainable Future, Webinar 4 on 28th October 2023**
- **ImpactGeo 2023 Talk Series: Unleashing the Power of Earth Observation for a Sustainable Future, Webinar 5 on 25th November 2023**
- **International GIS Day 2023 Seminar: IIIT Bhubaneshwar on 15th November 2023**
- **3 Days Training Workshop On Digital Data And Tools For Managing Agriculture on 21st to 23rd December 2023**

In the era of climate change, the agricultural sector faces unprecedented challenges that threaten food security worldwide. Innovative technologies can provide actionable insights and foster resilience against climate variability. This workshop is designed to empower students, researchers, scientists, academicians, decision-makers and policymakers with the cutting-edge knowledge and tools to integrate digital data into agricultural management practices. Participants will learn about the latest advancements in Earth observation technologies, big data analytics, and digital tools that can help predict and make robust, evidence-based decisions as they confront challenges in the food system, urban water pollution, implementation to reduce greenhouse gas (GHG) emissions, and nexus.

- **Outreach Program for St. Paul's School Rourkela on 19th August 2023**

Explore the fascinating realm of Earth observation data and analytics, where cutting-edge satellite technology captures information about our planet from space. Dive into the world of data analysis, where experts decode this information to gain insights into environmental changes, weather patterns, and more. Learn how these skills are becoming crucial in various fields, offering opportunities to solve real-world challenges and drive positive changes for our planet.

- **One Day Workshop on "Remote Sensing, GIS - A New Light of Hope in the Horizon for Thriving Your Career Opportunities" on 23rd September 2023**

B.3 Formation of New Student Branch

Newly formed Student Branches (SB) / Student Branch Chapters (SBC) 2023

1. Indian Inst of Tech-Guwahati,PE31
2. University of Engineering and Man-Kolkata,MTT17
3. Netaji Subhash Engineering College,MTT17
4. National Institute of Technology - Patna,SP01
5. Indian Inst of Tech-Guwahati,IA34
6. National Institute of Technology - Patna,MTT17
7. Indian Institute of Technology - Patna,AP03
8. Indian Inst of Tech-Guwahati,IE13
9. Kalinga Institute of Industrial Technology,IA34
10. Kalinga Institute of Industrial Technology,CT08
11. National Inst of Technology-Silchar,IM09/CS23/SP01
12. National Institute of Technology - Meghalaya,MTT17
13. Kalinga Institute of Industrial Technology,CIS11
14. Indian Institute of Technology - Patna,MTT17
15. Asansol Engineering College,AP03
16. Trident Academy of Technology,EP21
17. Netaji Subhash Engineering College,PE31
18. Trident Academy of Technology,GRS29
19. Trident Academy of Technology,C16
20. Academy of Technology,C16
21. Budge Budge Institute of Technology,MTT17
22. Jadavpur University,COM19
23. National Inst of Tech-Rourkela,PE31
24. National Inst of Tech-Rourkela,IA34
25. Jagannath Inst for Tech & Mgmt,IA34

B.4 Affinity Group Activities

Total Affinity Groups: 04

i) Young Professional (YP) Affinity Group
ii) Women in Engineering (WIE) Affinity Group
iii) Life Member (LM) Affinity Group
iv) SIGHT Affinity Group

YOUNG PROFESSIONAL (YP) AFFINITY GROUP

- ## Name of the Event: Industry Visit at Haldia Dock Complex, Haldia, West Bengal

MCA department of Techno International New Town in technical association with IEEE Young professionals, Kolkata Section jointly organized an excursion cum industry visit at Haldia Dock Complex on 20th March, 2023. Around 58 participants including 5 IEEE members joined the event. Participants are mostly students and faculties of different institutes. Participants are very much excited visiting the dock.

- ## Technical Lecture on "Transfer Learning"

Cooch Behar Government Engineering College in technical collaboration with IEEE Young Professionals, Kolkata Section had organized an Technical Lecture on "Transfer Learning" on 5th April, 2023 at the seminar room of the college campus. Around 120 participants (IEEE 04) including students, faculties and staffs were present at the programme. Around 120 participants (IEEE 04) including students, faculties and staffs were present at the programme. The speaker discussed the following points:

- ## Expert Talk on "React Native"

MCA department of Techno International New Town in technical association with IEEE Young professionals, Kolkata Section jointly organized an Expert Talk on React Native at Techno International New Town on 27th April, 2023. Around 50 participants including 2 IEEE members joined the event. Participants are mostly students and faculties of different institutes. The speaker explained in brief how react native is used to develop the Android and iOS applications at Facebook, Microsoft, and virtual reality applications at Oculus. The participants enjoyed the session very much.

- ## Lecture on "Unleashing the Power of Optimization and Machine Learning In Large Scale Industrial and Business Problems"

IEEE Young Professionals, Kolkata Section organized alecture on Unleashing the Power of Optimization and Machine Learning in Large Scale Industrial and Business Problemsat CSE department, Jadavpur University on 20th July, 2023. Around 52 participants including 10 IEEE members joined the event. Participants are mostly PhD scholars and students of different institutes. The speaker discussed a powerful optimization technique in machine learning in largescale industrial and business problems. The event was very much interactive. The talk was very much helpful to the participants.

- ## Membership drive program by The Chairperson, IEEE Young Professionals on "IEEE Membership-Benefits"

The Chairperson, IEEE Young Professionals , Kolkata Section delivered a lecture about the benefits of IEEE membership at Calcutta Institute of Technology, Uluberia on 2nd August, 2023. Around 135 participants including 10 IEEE members joined the event. Participants inquire about different aspects of membership, such as student membership, Society membership, and Lifetime membership, by posing various questions.

- ## One day Seminar on "IOT & Machine Learning"

IEEE Young Professionals, Kolkata Section organized a One day seminar on IOT & Machine Learning at Calcutta Institute of Technology, Uluberia on 2nd August, 2023. Around 133 participants including 8 IEEE members joined the event. Participants are mostly students and faculties of different institutes. The speakers discussed the following points:

- i) Fundamentals of IOT and its application
- ii) Fundamentals of Machine learning and its application
- iii) Application of machine learning in IOT

- ## Name of the Event: Invited Talk on Harnessing AI powered methods for social impacts

Kalyani Govt. Engg. College and IEEE Young Professionals, Kolkata Section jointly organized an invited talk at Kalyani Govt. Engg. College, Kalyani on 29th August, 2023. The topic of the invited talk was Harnessing AI powered methods for social impacts. Around 110 participants including 18 IEEE members joined the event. Participants are mostly students and faculties of different institutes. The participants found the lecture to be extremely beneficial.

- ## Name of the Event: Invited Talk on "When language meets society"

Kalyani Govt. Engg. College and IEEE Young Professionals, Kolkata Section jointly organized an invited talk at Kalyani Govt. Engg. College, Kalyani on 15th September, 2023. The topic of the invited talk was "When language meets society". Around 115 participants including 16 IEEE members joined the event. Participants are mostly students and faculties of different institutes. This outstanding event was mostly interactive and participants enjoyed the session very much.

- ## Name of the Event: Short Term Course on Deep Learning Applications for smart cities

Department of CSE, NIT Rourkela in technical collaboration with IEEE Young Professionals, Kolkata Section organized ashort term course at NIT Rourkela from 11th to 15th September, 2023. The topic of the short term course was "Deep learning application for smart cities". Around 212 participants including 23 IEEE members joined the event. Participants are students and faculties of different institutes. Each session is highly interactive and notably relevant within the current context of recent research.

Name of Speaker/Delegates present with affiliation:

- a) Prof. Sankar Kumar Pal, ISI Kolkata
- b) Prof. Sumantra Dutta Roy, IIT Delhi
- c) Prof.Amitava Chatterjee, Jadavpur University
- d) Prof. VinitJakhetiya, IIT Jammu
- e) Prof. Amit Singh, NIT Patna
- f) Prof. Prakash Choudahry, Central Univ. Raj
- g) Prof.BasantAgrwal, Central University of Rajasthan
- h) Prof. Vibhorkant, BHU, Banaras
- i) Prof. Vibhorkant, BHU, Banaras

j) Prof.Pramod Gaur, BITS-Pilani, Dubai Campus
k) Prof. KshitizVerma, JKLU, Jaipur

- **Name of the Event: Invited Talk on Video Representation Learning**

Kalyani Govt. Engg. College and IEEE Young Professionals, Kolkata Section jointly organized an invited talk at Kalyani Govt. Engg. College, Kalyani on 18th December, 2023. The topic of the invited talk was Video Representation Learning. Around 105 participants including 15 IEEE members joined the event. Participants are mostly students and faculties of different institutes. The speaker very lucidly explained about video representation learning. The participants found the lecture to be extremely beneficial.

WIE AFFINITY GROUP

- **The Sixth International Workshop on Networking Women In Distributed Computing And Networks**

This workshop mainly focuses on recent researches in networking and distributed computing fields which have given immense rise to the emerging areas like Internet of Things, mobile & cloud computing, Big Data analytics, machine learning, 5G etc on 4th January ' 23. The workshop aims to encourage specially the women researches who are enthusiastically working in these areas and consider their research works which have escalated the change in the computing world. The program consists of invited talks from renowned scientists of the world, a few selected paper presentations and a panel discussion. One best paper award is offered. The program is partially sponsored by IEEE Women in Engineering (WiE). This workshop was started in 2018 and the earlier workshops were held in IIT(BHU), IISc Bangalore, Jadavpur University, Kolkata, Nara, Japan and IIIT Delhi. In 2021 and 2022, due to pandemic the workshop was held in virtual mode.

- **Training series towards a net-zero automotive sector in India- ISC**

Experts and industry stalwarts elucidated an approach for (gender) equitable decarbonization of the automotive omponent manufacturers, deliberating about the financial and technical aspects of the process with a lens of gender equity in the first training series of ISC towards a net-zero automotive sector in India.

- **Networking Night: Early Career Researchers in Academia jointly organized by IEEE WIE Kolkata Section and IEEE WIE Singapore Section**

On 16.02.2023 at Fusionopolis, Singapore,Dr. Ankita Pramanik, Chairperson of IEEE WIE Kolkata Section was invited by the IEEE WIE Singapore Section and IEEE PES Singapore Chapter to speak on the topic "Early Career Researchers in Academia" as part of "Networking Night" for the beginning of collaboration between the two IEEE WIE sections of Kolkata and Singapore. Dr. Pramanik spoke about the challenges young academicians face globally and especially in developing countries. She also spoke about the various outreach activities of IEEE WIE Kolkata Section to reach out to marginalized women under the Kolkata section. The event was well attended by the members of industry and academia.

- **International Women's Day Celebration**

08th March, 2023, IEEE WIE Kolkata Section celebrated International Women's Day with a two-part event. The first event was held offline at IEM Kolkata on 6th March 2023 and the second event was held online on 8th March 2023. The theme of this year's celebration was "Colors of Equity". Prof. Konika Das (Bhattacharya), Head of the Department, Electrical Engineering Department, IIEST Shibpur and Director of EICC Projects Private Limited was the invited speaker on 6th March 2023. The offline event was well attended by budding engineers, young professionals and academicians and saw participation of members of both the gender.

The online meet on 8th March 2023 saw a spontaneous participation of all the members. The meet ended with a determined resolution to enthusiastically follow the vision and mission of IEEE WIE Kolkata Section i.e., to promote women engineers and scientists while encouraging young girls to choose career in science and engineering.

- **PPT Making Competition on the topic "INTERNET CONNECTIVITY FOR EVERYONE**

Elevate'23, the annual flagship event of IEEE IEM SB, was organized by IEEE IEM Student Branch in association with the IEEE IEM Computer Society and was held between 6th - 9th April 2023 from 10.00 AM - 6.00 PM.

The PPT Making Competition held on 7th April was a part of this flagship event. It was organized in association with IEEE WIE Kolkata Section on the topic "INTERNET CONNECTIVITY FOR EVERYONE". A total of 23 teams, with a maximum of 2 members in each team had registered for the event. The competition was a huge success, overflowing with enthusiastic participation and innovative ideas which muddled the judge to pick out the winner. Total 46 participant participated in this program.

- **Exploring the Wonders of Science: Igniting Curiosity in Young Minds through Outreach Program**

IEEE WIE Kolkata Section had organized a visit to Birla Industrial & Technological Museum Kolkata for the students of NGO Pratyush on 24th May'23. These first-generation learners come from marginalized families and are mostly from the minority community. This outreach event, the first of the two-part event, was sponsored by the 2023 IEEE Region 10 Educational Activities Development Grant and a matching grant by IEEE Kolkata Section. The event saw enthusiastic participation not just from the children but also from the IEEE WIE Kolkata Section members and volunteers. In this day-long event, the students were taken through museum tour, science show and hands-on science activities.

Eco-friendly gifts were handed out to the students as return-gifts. The project has successfully started a ripple effect, with the students' newfound love for science spreading to their families, friends, and classmates, ultimately impacting the education and career prospects of these children and the community as a whole.

- **Net Zero Transition IEEE Awareness**

India's long-term goal of reaching net-zero is by 2070. However, in a big country like India it is really a challenging task. IEEE Kolkata Section jointly with IEEE PES, Kolkata, IEEE WIE Kolkata Affinity Group, and IEEE India Council has taken initiative in creating the awareness of this Net Zero Transition. As a part of that the first event was held in collaboration with Center for Global Affairs and Public Policies on 1st July, 2023 from 5:00 PM.

- **Learning Networking with Outreach Engineering & Polytechnic Students of Remote Districts in West Bengal: One-day Hands-on Workshop on "Hardware Development and Testing of Switching Power Supplies"**

IEEE Industry Applications Society, Kolkata Chapter and IEEE Women in Engineering (WIE) Kolkata Affinity Group had organized One-day Hands-on Workshop on "Hardware Development and Testing of Switching Power Supplies" on 3rd July 2023 at Siliguri Government Polytechnic, Siliguri, Darjeeling district, West Bengal and 4th July 2023 at Islampur Government
Polytechnic, Islampur, Uttar Dinajpur, West Bengal. These workshops were organized as a part of the IEEE R10 EAC and IEEE Kolkata Section project "Learning Networking with Outreach Engineering & Polytechnic Students of Remote Districts in West Bengal".
The workshop included technical talks on recent trends in Power Converter usage in Renewable Energy Applications and Electric Vehicles (EV). The participating students of Electrical and Electronics Engineering disciplines got hands-on training from Power Electronics researchers on hardware development and testing of switching power supplies. The enthusiastic response of the students during the sessions proved the success of the program.

- **Women in Engineering (WIE) Day #IEEEWIEDay & Quarter Tech Talk Table 10.0 (QT3)**

On the occasion of Women in Engineering (WIE) Day #IEEEWIEDay, the IEEE Women in Engineering Kolkata Section and IEEE IEM student branch and a group of IEEE Young Professionals & Impact Creators gathered on July 22, 2023 (09:00 AM – 5:00 PM IST) to create awareness on Professional Communication by forming a collaborative platform at

"Quarter Tech Talk Table 10.0 (QT3)" in the form of a Panel Discussion on the topic - "Professional Communication: Nurturing oneself for community building". This was conducted in collaboration with the Students Professional Activities Committee (SPAx, IEEE Students), Universal Access to Technology (IEEE SSIT), IEEE Industry Committee, IEEE Collabratec, and IEEE WIE Kolkata section hosted at Institute of Engineering and Management, Kolkata India.

- **'SHE POWERS GREEN'-PPT competition**

The IEEE IEM WIE Student Chapter and the IEEE WIE Kolkata Section had organised a captivating PPT competition named "She Powers Green"; to commemorate WIE Day on 31st July 2023 at the IEM Gurukul campus. The event aimed to promote sustainability and women's empowerment in the field of technology. The competition received an ever-whelming response from the students, attracting participants from diverse disciplines and backgrounds. The theme centred on harnessing technology to nurture eco-friendly practices and the pivotal role of women in leading such endeavours. Among the outstanding submissions, seven teams were selected for the final round, which unfolded on the aforementioned date.

The participants unveiled their ingenious ideas and solutions through visually captivating PowerPoint presentations.

Each participant demonstrated dedication and enthusiasm in presenting their ideas, showcasing their deep understanding of the issues surrounding climate change and proposing potential solutions.

The judging criteria included the innovativeness of ideas, clarity of expression, feasibility, and potential impact. After thorough evaluation, the judges made their decisions and selected the winners. The top-performing participants were recognized for their outstanding efforts and were awarded certificates and cash prizes (by IEEE WIE), serving as a token of appreciation for their exceptional contributions. Each participant received a participation certificate, signifying their dedication to combating climate change and their commitment to creating a sustainable future. The event was meticulously organized, thanks to the collaborative efforts of the IEEE IEM WIE team and IEEE WIE Kolkata section. The smooth coordination and execution of the event ensured a seamless experience for all participants and attendees. "She Powers Green"; not only stirred enthusiasm among the participants but also left an indelible mark on the audience, instilling a heightened sense of responsibility towards building a sustainable world. The event served as a testimony to the dedication and fervour of the IEEE IEM WIE Student Chapter in fostering a forward-thinking and eco-conscious academic milieu. It showcased the potential of young minds to effect positive change and kindled a collective determination towards a greener and more inclusive future.

- **IEEE WIE Hackathon 2023**

IEEE WIE Kolkata Affinity Group had organized IEEE WIE Hackathon. The submissions for the events were opened on 10 th June 2023. From the submitted entries shortlisting of ideas was done for presentation on the grand finale day. The Hackathon focused on three thematic areas, "Smart Technology for Women Empowerment, Green Energy based Sustainable Technology and Smart Resource Management System."

The grand finale of IEEE WIE Hackathon 2023 was held on 21st August 2023, Monday at Jadavpur University Campus. A diverse group of students with mentors from different universities, and institutes participated in the event. This
event was sponsored by IEEE R10 EAC and IEEE Kolkata Section. Innovative solutions that can address social challenges in the areas of smart technology for women empowerment, green energy-based sustainable technology, and smart resource management system came out from the presentations of the participants. In the first round, the teams had submitted brainstorm ideas for their projects. In the second round, only the selected teams had the opportunity to develop and present their solutions. A panel of judges evaluated the projects based on their creativity, technical complexity, and potential impact. The top teams from each of the three themes were given away cash prizes and were encouraged to make prototypes with the guidance of IEEE mentors and build their skills in the future. We were privileged to have Dr. Arundhati Misra, Former Group Director, of Advanced Microwave and Hyperspectral Technique Development Group, SAC ISRO, Ahmedabad, Prof. Susanta Kumar Parui, Professor & Head, Department of Electronics & Telecommunication Engineering, IIEST Shibpur, Dr. Sarbani Roy, Professor, Department of Computer Science & Engineering, Jadavpur University and Dr. Sayan Chatterjee, Professor, Department of Electronics &Telecommunication Engineering, Jadavpur University as the expert panel. Their valuable advice left an indelible mark on each participant.
The Department of Electronics & Telecommunication Engineering, Jadavpur University had provided the venue. Mrs. Sampa Paul of SR Enterprises, Kolkata had sponsored a special prize for the event. The volunteers and members of the IEEE WIE Kolkata section worked tirelessly behind the scenes to ensure smooth coordination, seamless logistics, and an engaging atmosphere bringing this event to fruition. It was a unique opportunity to promote innovation and creativity in developing solutions to social challenges. By bringing together industry experts, students, and professionals, we at IEEE Women in Engineering- WIE, Kolkata Section hope to create a community of like-minded individuals who are committed to making

a positive impact on society.

- **From Diploma to Dreams: Empowering Students to Pursue Higher Studies, Innovation, and Entrepreneurship**

IEEE WIE Kolkata Affinity Group had organized a career counseling workshop at Shree Ramkrishna Institute of Science and Technology, Baruipur, South 24 Parganas District, West Bengal on 29th August. Many of the participants were first-generation learners. This event was sponsored by the 2023 IEEE Region 10 Educational Activities Development Grant and a matching grant by IEEE Kolkata Section.

Talks on Self-Motivation, Start-Up, Innovation, IPR, Job Scenario specially Government Jobs, Scope of Skill Development and Higher Studies were conducted during the event.

The event saw enthusiastic participation from a 200 strong crowd of Diploma students of second- and third-year students from the Departments of Electrical Engineering, Electronics and Telecommunication Engineering, Mechanical Engineering, Architecture, Computer Science and Technology and Civil Engineering. The enthusiastic response of the students during the sessions proved the success of the program.

- **Empowering Girls with Data: A One-Day Outreach Workshop**

IEEE WIE Kolkata Affinity Group had organized "Empowering Girls with Data: A One-Day Outreach Workshop" at IEM Public School, New Town, South 24 Parganas District, West Bengal on 31st August'23. Many of the participants were first-generation learners. This event was sponsored by the 2023 IEEE Region 10 Educational Activities Development Grant and a matching grant by IEEE Kolkata Section. Talks on Self-Motivation, Start-Up, Innovation, IPR, Job Scenario specially Government Jobs, Scope of Skill Development and Higher Studies were conducted during the event.

The event saw enthusiastic participation from a 200 strong crowd of Diploma students of second- and third-year students from the Departments of Electrical Engineering, Electronics and Telecommunication Engineering, Mechanical

Engineering, Architecture, Computer Science and Technology and Civil Engineering. The enthusiastic response of the students during the sessions proved the success of the program.

Name of the Event: Dare to Dream

Date and venue of Event: 16th December 2023, 2-3 PM at Premananda Hall, The Ramakrishna Mission Institute of Culture, Golpark

Short description of the event:

The Dare to Dream talk series, conducted by IEEE Kolkata Section and IEEE Women in Engineering (WIE) Kolkata Affinity Group is a talk series on pioneer Indian Women in STEM, who started their career more than 50 years ago. The goal of this series is to make aware and inspire today's women with examples from the history which speaks of the determination, grit and focus they had to pursue their dream irrespective of the undoubtedly more difficult ecosystem they had compared to today's world. The 7th Episode of the talk was organized on 16th December 2023 and it focused on the pioneering women in Medicine and was titled, "The Pioneering Female Doctors of India: Anandibai Gopalrao Joshi, Kadambini Bose Ganguly, Rukhmabai". The talk was delivered by Prof. Sujit K. Biswas, Dean (Academic) of St. Thomas College of Engineering and Technology, Kolkata and formerly with EE Department, Jadavpur University. The talk focused on the stories of struggles, overcoming societal prejudices, support of family etc. in the journey of these women to become first Indian female doctor of western medicine or first Indian female doctors educated in India. Prof. Nabanita Das, retd. Professor of the Advanced Computing and Microelectronics Unit of Indian Statistical Institute was the Session Chair. The event was attended by the likes of Prof. Sankar K. Pal, Prof. P. K. Basu, Prof. Susanta Sen, Prof. Basabi Chakraborty etc. Participants had come from Intel Labs, USA, IIT Madras, IPU Japan, IRPE, Calcutta University, Jadavpur University, IIEST Shibpur, IEM, Techno India, St. Thomas College of Engineering and Technology, KIIT University, TCS, Global Foundries etc. The thunderous applause after the talk proved the success of the event.

Name of Speaker/Delegates present with affiliation:

1. Prof. Sujit K. Biswas, Dean (Academic) of St. Thomas College of Engineering and Technology, Kolkata and formerly with EE Department, Jadavpur University - Speaker
2. Prof. Nabanita Das, retd. Professor of the Advanced Computing and Microelectronics Unit of Indian Statistical Institute - Session Chair

No. of total participants: 38
No. of IEEE member participated: 26
No. of Non-IEEE member participated: 12

Name of the Event: International Conference on Computers and Devices for Communication (CODEC)

Date and venue of Event: 14th-16th December 2023, The Ramakrishna Mission Institute of Culture, Golpark

Short description of the event:

IEEE Women in Engineering (WIE) Kolkata Affinity Group was the technical co-sponsor of International Conference on Computers and Devices for Communication (CODEC) 2023, a flagship event organized by Institute of Radio Physics and Electronic, University of Calcutta. WIE Kolkata had sponsored the WIE Best Poster Award for first and second prize for the poster session of CODEC 2023. Over the years, WIE had been sponsoring the Best Poster Awards for CODEC. This year, a total of 32 posters had been received in the conference, a staggering number compared to the papers received in each track of the conference. The judges had a difficult time selecting the winners. So, two posters were judged joined first and two were judged joint second. The enthusiasm of all the participants during the poster session proved the success of the event.

Name of Speaker/Delegates present with affiliation:

1. Dr. Ankita Pramanik, Associate Professor, Department of Electronics and Telecommunication Engineering, Indian Institute of Engineering Science and Technology, Shibpur, Chairperson, IEEE WIE Kolkata Affinity Group
2. Prof. Sudipta Chattopadhyay, Professor, Department of Electronics and Telecommunication Engineering, Jadavpur University
3. Prof. Susanta Kumar Parui, Professor, Department of Electronics & Telecommunication Engineering, IIEST Shibpur
4. Prof. Abhirup Das Barman, Professor, Radio Physics & Electronics, Calcutta University
5. Dr. Sumitra Mukhopadhyay, Assistant Professor, Radio Physics & Electronics, Calcutta University
6. Dr. Soumya Pandit, Professor, Radio Physics & Electronics, Calcutta University
7. Dr. Jayanta Ghosh. Associate Professor, National Institute of Technology Patna
8. Dr. Bratati Mukhopadhyay, Assistant Professor, Radio Physics & Electronics, Calcutta University
9. Dr. Ratna Chakraborty, Assistant Head of the Department, IEM Kolkata
10. Dr. Dibakar Roy Choudhury, Institute of Engineering & Management, Kolkata
11. Dr. Swati Chowdhuri, Professor, Department of Electrical and Electronics Engineering, Institute of Engineering & Management, Kolkata
12. Dr. Senjuti Khanra, Techno India, Kolkata

No. of total participants: 50-55
No. of IEEE member participated: 35-40
No. of Non-IEEE member participated: 10-15

7TH INTERNATIONAL CONFERENCE ON ELECTRONICS, MATERIALS ENGINEERING & NANO-TECHNOLOGY (IEMENTEch 2023)

Date and venue of Event: 18th to 20th December, 2023, IEM, Salt Lake, India

Short description of the event:

7th International Conference on Electronics, Materials Engineering and Nano Technology" IEMENTech 2023 was held at IEM Gurukul campus, Saltlake, Sec-V, Kolkata, India during 18th to 20th December, 2023 under technical collaboration of IEEE Kolkata Section. The Conference aims to focus on different collaboration and network building with the industry and academicians along with the technical paper submissions in different tracks related to the theme of the conference. The conference was enriched with the notable keynote speeches by different scientists from all over India and abroad.

Among the 3 days conference one day was particularly dedicated for Women in Engineering (WiE) session where eminent scientist Dr. S Geetha delivered the talk related to her journey and experiences as a woman scientist in the prestigious ISRO, VSSC.

There was one technical paper presentation session under IEEE Women in Engineering (WiE). To encourage and enlighten the young minds there was one Drone workshop where participants acquired skills in drone assembly, flight control, and troubleshooting. Overall the conference received enthusiastic response from all the attendees and it was a successful event with lots of positive insights.

Name of Speaker/Delegates present with affiliation:

Prof. Dr. Keshav Singh (National Sun Yat-sen University, Kaohsiung, Taiwan)

Prof. Dr. Achintya Singha (Bose Institute)

Prof. Dr. Satyanarayana Bheesette (TIFR, Mumbai)

Dr. S Geeta (ISRO, VSSC)

Prof. P. K. Giri (IIT, Guwahati)

Dr. Shubhankar Basu (Entrepreneur)

Dinesh Sain (Cofounder & COO Drona Aviation Pvt. Ltd)

No. of total participants: 300 (approx)

No. of IEEE member participated: 100 (approx)

No. of Non-IEEE member participated: 200 (approx)

- **IEEE WIE ILS 2023 by WIE AG MP Section**

Sudeshna Choudhury, IEEE, India Council Vice Chair (WIE) was invited as a Speaker in IEEE WIE ILS 2023(26th August 2023) by WIE AG MP Section on "Climate and Sustainability". She spoke on technology for climate change and sustainability and its role in the betterment of the same.

- **Outreach Activity at a Women's Self-Help Group**

IEEE WIE Kolkata Affinity Group had organized an outreach program at Ushoshee Hasta Shilpa Kendra, Barasat, West Bengal, a women's self-help group on 5th November 2023. The women are mostly from marginalized sections of the society. The visit was undertaken to motivate the women by acknowledging the profound impact of their work on both artistic and economic fronts as well as highlight the importance of self-sufficiency through collective efforts. Talks focusing on emphasizing the value of community and mutual support for fostering empowerment and financial independence were also organized. The women from the self-help group were encouraged to share their inspiring stories of resilience to defy all adversities. The women were also encouraged to complete their education so that they can inspire their children and can also market their goods as well as keep track of sales etc. The event ended with a happy note with WIE members vowing to spread the stories of these women.

- **IEEE WIE International Leadership Summit -IEEE WIE Vizag Section**

It's was a great experience talking on "Women rights in 2030: Vision, Mission and agenda for sustainable development" during IEEE WIE International Leadership Summit on 24th November 2023.

- **5 days International Faculty Development Program on Innovative Research Prospects in Electrical and Electronic System Integrating AI & Machine Learning Techniques**

IEEE WIE Kolkata Affinity Group had organized a 5 days International Faculty Development Program in association with Institute of Engineering & Management, Kolkata in virtual mode. The FDP Program aimed to introduce the foundations and state-of-the-art techniques of Electrical and Electronic System integrating AI/ML, in addition to delving into the applications of AI/ML in various research domains of Electrical and Electronic System, while studying the impact of AI/ML in future technologies and also aimed to bring in the practical insights into the current development of the field. Various faculty members from India and abroad were the resource person for the FDP program. The event was well attended by 130 faculty and participants.

- **Popular Science Lecture**

IEEE WIE Kolkata Affinity Group in collaboration with Indian National Young Academy of Science (INYAS) East Zone had organized a half day Popular Science Lecture to motivate school girls to take up STEM as their career choice for girl students of Class 9 and 10 studying in Howrah Ramkrishna Adarsha Balika Vidyalaya, Shalimar Area, a Bengali Medium Government School. Prof. Syed Minhaz Hossain, Head of the Department,

Department of Physics, IIEST Shibpur talked about the various natural phenomenon like rainfall, rainbow, colour of the sky, sun etc on 8th December'23. He interspersed his talk with interesting hands-on demonstrations. Dr. Upasana Roy, Senior Scientist, CSIR-Indian Institute of Chemical Biology (CSIR–IICB) talked about disease causing germs especially dengue. Prof. Santi P. Maity, Professor, Department of Information Technology, IIEST Shibpur brought the world of artificial intelligence and machine learning to the young minds. The inquisitive questions of the young minds showed the success of the event.

ACTIVITY OF IEEE WIE MEMBERS

- **50th Triennial and 3rd International Conference of Indian Women Scientists' Association (IWSA)**

It was a lovely experience to participate in the 50th Triennial and 3rd International Conference of Indian Women Scientists' Association (IWSA) between 11th and 13th June in Mumbai.

The theme of the conference was "Women in Science & Technology Soaring on the Wings of Change" and Tata Consultancy Services was a Gold sponsor for the event. There was an overwhelming response from the visitors to our stall on the Tata Consultancy Services AI based automated sanitation inspection success story in Andhra Pradesh and other stories of work done by Tata Consultancy Services around women welfare across Research, Business and CSR.

- **Digitization in Water Cycle- The Digital Water India Subgroup (IWA-DWI)**

The Digital Water India Subgroup (IWA-DWI) is a subgroup of the International Water Association's Digital Water Programme. IWA-DWI held its first Webinar on "Digitization in Water Cycle", on 19 August 2023 (Saturday) at 6 p.m. (Indian Standard Time). This lecture was delivered by Mr. Prateek Khattri, Manager of Business Development, Siemens India and was moderated by Ms. Sudeshna Choudhury

- **IEEE WIE ILS 2023 by WIE AG MP Section**

Sudeshna Choudhury, IEEE, India Council Vice Chair (WIE) was invited as a Speaker in IEEE WIE ILS 2023(August 2023) by WIE AG MP Section on "Climate and Sustainability". She spoke on technology for climate change and sustainability and its role in the betterment of the same.

- **Artificial Intelligence and Smart Technologies for Humanity -IEEE R10 HTC 2023**

Sudeshna was a Keynote Speaker in IEEE R10 HTC 2023 (Humanitarian Technology Conference) on 18th October in Marwadi University, Rajkot. The theme of the conference, "Artificial Intelligence and Smart Technologies for Humanity" was to draw special attention

to the societal expectation on humanitarian technologies' ability to provide practical and lasting solutions. She spoke on Tata Consultancy Services ASI (Automated Sanitation Inspection) and how it harnesses the potential of AI to enable rapid and efficient inspection along with accurate classification and effectively helps the Indian state of Andhra Pradesh enable quality education for its children by making clean water and sanitation accessible.

- **IEEE Women in Engineering Social Innovation Camp** (**Online** + **In-person**)

IEEE WIE Social Innovation Camp is the motivation from IEEE Women in Engineering Student-Teacher and Research Engineer/Scientist (STAR) to motivate Pre-University students, especially girls to step into technical fields 4th -5th November'23. This event is organized to motivate and give awareness about "Social Innovation" and "Pre-University Education" among Pre-University Students (Grade 10-12th), Teachers/Educators & IEEE Volunteers. The program consists of invited talks from renowned IEEE members of the world. 30 countries participated in the IEEE Region 10 WIE Social Innovation Camp and IEEE R10 WIE Pre-U Championshp. Tanima Bhowmik was nominated by WIE chair Kolkata section, and she was awarded the "IEEE Region 10 WIE Pre-University Active-Champion 2023".

- **IEEE WIE International Leadership Summit -IEEE WIE Vizag Section**

It's was a great experience talking on " Women rights in 2030: Vision, Mission and agenda for sustainable development" during IEEE WIE International Leadership Summit on 24th November 2023.

- **Training series towards a net-zero automotive sector in India- ISC**

Experts and industry stalwarts elucidated an approach for (gender) equitable decarbonization of the automotive component manufacturers, deliberating about the financial and technical aspects of the process with a lens of gender equity in the first training series of ISC towards a net-zero automotive sector in India on 24th January 2023.

- **UN HRC 2023**

Two days in Geneva was an amazing experience of Sustainability Ecosystem built on the foundation of inclusive partnership between businesses, government, civil societies in a global   level   on   16th   March   2023.
As an invited speaker for the AI based sanitation inspection story(which was approved as an intervention in 52nd UN HRC session) I got the opportunity of a day long experience inside the assembly to hear petitions from across the world for rights of education, health and well-being, gender equality, reduced inequality, peace and justice, poverty and many more.
The following day was the side event on "Sustainability Enablement Through Technology"

where leaders from ServiceNow, Tata Consultancy Services, MathCo, World Meteorological Organisation, Open Health Network, Women In Data™ and Centre For Global Affairs and Public Policy shared their perspective and experiences on capabilities that exists in the Ecosystem which can be considered for partnerships for a sustainable development agenda.

- **Humanitarian Technology for Sustainable Development - IEEE Kolkata Section SIGHT Group & IEEE Kolkata Section**

The IEEE Kolkata Section SIGHT Group hosted its first in-person event on May 31, 2023, on "Humanitarian Technology for Sustainable Development" along with IEEE Kolkata Section. Ms. Sudeshna Choudhury from TCS, Kolkata was honoured to be one of the speakers along with Prof. Iti Saha Misra, Prof. Jawad Y. Siddiqui and Dr. Susanta Ray amidst nearly 200 participants. I spoke on Partnership for Sustainable Development and walked through the success story of Tata Consultancy Services ASI (Automated Sanitation Inspection) Solution.

IEEE LMAG KOLKATA SECTION

- **FIRST LMAG Activity of IEEE Kolkata Section**

Venue: Online (Zoom)
Organizers: IEEE LMAG India, IEEE LMAG Kolkata Section and IEEE Kerala Section
Title of the talk: Vision towards beyond 5G: Security and Vulnerability
Speaker: Dr. Budhaditya Bhattacharyya, Associate Professor, School of Electronics Engineering (SENSE), VIT University, Vellore
No. of Participants: 15 IEEE Members and 5 Guests – Total 20

On 27th July 2023 IEEE LMAG India, IEEE LMAG Kolkata Section and IEEE Kerala Section organizes a technical Lecture session on "Vision towards beyond 5G: Security and Vulnerability".
Fifth Generation Communication Networks (5G) promise to usher in a new era of high-speed data service. It is expected to offer a wide range of services, notably HetNet, D2D, Massive MIMO, and SDN networks, in addition to extremely low latency and delays with high throughput. This broad variety of services is anticipated to be effective when augmented with Enhanced Mobile Broadband (eMBB), Massive Machine Type Communications (mMTC), and Ultra-reliable low-latency communications (URLLC). All of these promises, however, can only be fulfilled if several robust and efficient security measures are put in place to protect and secure user data. In addition, researchers would employ particular tactics to provide a trustworthy communication environment to the massive user database. In preparation for this, the talk started with an emphasis on the evolution of security challenges in mobile communication and how the concerns of one generation developed the path for a solution for the next generations. Keeping in view the

security concerns and vulnerabilities of 5G were discussed lucidly to engage the audience at large. Furthermore, a DNN-based MAC protocol for intrusion detection in a 5G network was also discussed giving a direction of research in years to come. The highly engaged audience interacted with the speaker enthusiastically. Total 20 participants are participated in this program.

- **SECOND LMAG Activity of IEEE Kolkata Section**

Venue: Online (Zoom)
Organizers: IEEE LMAG India and IEEE LMAG Kolkata Section
Title of the talk: Indoor Communication in the 21st Century
Speaker: Dr. Anindita Kundu, Associate Professor, Department of Software Systems, School of Computer Science and Engineering (SCOPE), VIT, Vellore
No. of Participants: 15 IEEE Members and 6 Guests – Total 21

On 26th October 2023 IEEE LMAG India, IEEE LMAG Kolkata Section organizes a technical Lecture session on "Indoor Communication in the 21 st Century". Wireless communication has become inevitable in the 21 st century. With the evolution of the Internet of Things (IoT), wireless networks are being used to deliver numerous multimedia services, and high-speed data. With 5G networks establishing pervasive connection in the background, mobility is expected to be effortless. However, network connectivity-related problems are frequent in indoors and have an impact on the 5G performance. Indoor coverage is crucial as 87% of our time is spent in enclosed buildings. Building Entry Loss (BEL), or the attenuation of radio signals by walls and windows, is the primary cause of connectivity loss indoors. This issue is particularly problematic for 5G mid-band frequencies, where BEL is typically 20-30 dB. As customers walk indoors, this loss might drastically lower service quality or completely obstruct it. The IoT is revolutionizing buildings with smart-building services, such as safety, signage, and staff communication. Over the last few decades, Wi-fi, has evolved to offer better indoor coverage. Wi-Fi may be supplemented with 5G technologies, which may enhance the user experience by providing a combination of private and public mobile network services. 5G can also play a significant role in real estate, as buildings with good indoor connectivity are more in demand than those without. Femto Cells, which are small cells with a 10-20 meters coverage range, offer an affordable option for 5G indoor services. Planning is necessary for location and power control, though, as the presence of high-power macro base stations and multiple femto base stations in the vicinity may cause interference and reduced throughput. Femto base stations can also contribute to network capacity enhancement through cognitive underlay technology. Femto base station deployment promises to be the most affordable and straightforward solution in the 21 st century. Total 21 participants are participated in this program.

- ## THIRD LMAG Activity of IEEE Kolkata Section

Venue: Online (Zoom)
Organizers: IEEE LMAG India and IEEE LMAG Kolkata Section
Title of the talk: Applications of Deep Learning in Healthcare
Speaker: Dr. Ananthakrishna Chintanpalli, Professor, Department of Communication Engineering, School of Electronics Engineering (SENSE), VIT, Vellore
No. of Participants: 14 IEEE Members and 5 Guests – Total 19

On 30th November 2023 IEEE LMAG India, IEEE LMAG Kolkata Section organizes a technical Lecture session on "Applications of Deep Learning in Healthcare". Deep Learning (DL) is a subset of artificial intelligence and is significantly making contributions to healthcare sectors. DL models learn the important features from the training data, that aid in decision-making for the testing data. In this talk, through applications, we will discuss how DL has revolutionized the healthcare sectors for better detection, diagnosis, early prediction, and treatment of diseases. DL has been used to analyze medical images (e.g., X-rays, MRIs, and CT scans) for the detection of cancers, tumours, fractures, and more recently COVID-19. The non-invasive wearable devices (e.g., smart watch) can utilize DL to monitor vital measurements (e.g., heart rate, blood pressure level, blood glucose level) and detect any abnormalities. This would enable the user to track any issues, thereby providing immediate health assistance if required. In recent years, DL has been used extensively in predicting speech recognition scores in younger adults with normal hearing, older adults with normal hearing, and older adults with hearing loss. More recently, DL has been used in hearing-aid technology (e.g., Oticon More) to improve speech intelligibility for hearing-impaired users in complex listening environments. DL is also integrated into robotic surgery (e.g., joint replacement), thus resulting in precise procedures and less invasive. Healthcare accessibility has been improved as DL can be used to develop personalized treatment plans and schedule appointments for each patient based on their previous medical history and current health status. These applications suggest that DL is transforming the health sector by improving its diagnosis, treatment, and prosthetic devices. These advancements in DL provide a better opportunity to improve the lives of patients suffering from pathological conditions. Total 19 participants are participated in this program.

SIGHT AFFINITY GROUP

- **'Pre-University STEM Training Workshop' for teachers of Vivekananda Adarsha Vidyalaya.**

A 'Pre-University STEM Training Workshop' for teachers of Vivekananda Adarsha Vidyalaya located in Sankijahan Village, Kultali in South 24 Parganas, West Bengal was held on April 29, 2023.

Vivekananda Adarsha Vidyalaya is a primary school that caters to children of fishermen and agricultural workers in the locality and aims to bring them within the ambit of quality school education and provide them basic academic resources, quality mentoring & one meal a day. Currently the school has 182 students and provides primary education.

Dr. Mousiki Kar, IEEE Kolkata Section SIGHT Group Chair and IEEE TryEngineering Champion, conducted the workshop and discussed various new methodologies and techniques of introducing new concepts of Science and Mathematics to the kindergarten and primary school children. This included sample class flow examples and sample projects which can be executed by the teachers and the students during class. Some simple methods of design thinking, EDM (Engineering Design Process) and EHM (Engineering Habits of Mind) were also introduced. The workshop was conducted online and was attended by 11 primary school teachers who participated enthusiastically and wholeheartedly.

- **IEEE seminar on 'Humanitarian Technology for Sustainable Development'**

A seminar on the topic, 'Humanitarian Technology for Sustainable Development' was organized on May 31, 2023, at Heritage Institute of Technology, Kolkata. The event was attended by 196 academicians, professionals and students from across the state of West Bengal.

The event began with Prof. Iti Saha Misra, IEEE Kolkata Section Chair and Prof. Jawad Siddiqui, IEEE AP-S SIGHT Chair presenting their past SIGHT (Special Interest Group on Humanitarian Technology) projects. They encouraged the participants to think of simple technology-based solutions for the society. Members of IEEE Kolkata Section SIGHT Group, Ms. Sudeshna Choudhury from TCS, Kolkata and Dr. Susanta Ray from Jadavpur University discussed various interesting scalable technology based humanitarian projects.

Dr. Mousiki Kar, IEEE Kolkata Section SIGHT Group Chair, concluded the event by emphasising how students could make a difference by learning about sustainable development and implementing SIGHT group projects for their local communities.

- **'Empowering Young minds through STEM education'**

A workshop 'Empowering Young minds through STEM Education', was conducted at Shishu Tirtha, a primary school for the underprivileged, run by the NGO Society 5-0 on July 12, 2023.

The workshop was designed to introduce young students from underprivileged backgrounds to the exciting world of STEM (Science, Technology, Engineering, and Mathematics) through hands-on learning experiences using electronics kits. The workshop started off with a brief introduction to robotics by Dr. Mousiki Kar, IEEE Kolkata Section SIGHT Group Chair, explaining what robots are, how they work, and their significance in today's world using age-appropriate language and visual aids to make the concepts easily understandable. The children were shown examples of robots used in everyday life. This segment aimed to connect the workshop's subject matter with real-world applications.

The children were also introduced to basic electronic circuits through interactive presentations and simple demonstrations. Each participant was subsequently provided with a pre-designed circuit building kit containing various components, such as motors, integrated circuits, LEDs, batteries, and switches. Dr. Kar, along with two undergraduate engineering student volunteers, Aratrika Bhattacharya and Archisman Majumdar, demonstrated how to build basic circuits step-by-step, and the children followed along. The workshop was successful in sparking curiosity and interest in STEM among the participants studying in standard IV by providing hands-on experiences with electronics.

- **Outreach program at 'Piyali Learning Center-PACE Universal'**

An outreach program was organized at 'Piyali Learning Center-PACE Universal' located at Piyali Junction, Gaurdaha, West Bengal on September 21, 2023. Piyali Learning Center is an educational oasis created for underprivileged girls in order to prevent sex trafficking and child marriage which was once rampant in the area.

The event was aimed at initiation of a sustained STEM (Science, Technology, Engineering, and Mathematics) program for the underprivileged children. Prof. Iti Saha Misra, IEEE Kolkata Section Chair and Dr. Mousiki Kar, IEEE Kolkata Section SIGHT Group Chair, were joined by Dr. Deepa Willingham, Founder & CEO – PACE Universal, USA and past president of the Rotary Club of Santa Ynez Valley, California, Prof. Mostafa Mortezaie, Educational Activities Chair, IEEE Region 6, Professor and faculty chair at DeVry University, USA and Prof. Bhaskar Biswas, Senior Professor at DeVry University and Keller School of Management, Sacramento, California.

The program marked the beginning of a long-term relationship of providing educational empowerment through hands-on and activity-based learning to the girl children at the school, leading to STEM education in the future and thus making them self-sufficient.

- **Interactive session on 'Sustainable Development through Humanitarian Technology'**

An interactive session on 'Sustainable Development through Humanitarian Technology' was organized by IEEE Kolkata Section SIGHT Group at Heritage Institute of Technology, Kolkata on October 03, 2023.

Prof. Mostafa Mortezaie, IEEE Region 6, Educational Activities Chair and Professor at San Jose State University and DeVry University, USA interacted with engineering undergraduate students.

Prof. Mostafa Mortezaie discussed various IEEE global humanitarian grants that can be secured by students to participate in humanitarian activities. Globally implemented projects were discussed to aid the students in writing their own project proposals. The participants got an overview of the entire lifecycle of a humanitarian project that is executed under the aegis of IEEE HTB (Humanitarian Technologies Board) or IEEE SIGHT (Special Interest Group on Humanitarian Technology). The session was attended by 23 participants.

B.5 Student Activity:

IEEE EDS MSIT SBC

1. IEEE Technical Talk, delivered by Dr. Saptarshi Das from Penn State University, USA , jointly organized by MSIT IEEE Signal Processing Society Student Branch Chapter, and IEEE MSIT EDS SBC, CARREST- MSIT. on 6TH January 2023. A total of 39 students attended the program, out of which 15 were IEEE student members.

2. IEEE EDS MSIT SBC in association with the Rotaract Club, organized Prabha: Chapter III for the underprivileged students in the Sundarbans area. School bags study materials, and medicines have been provided and a technical awareness program has been organized. A total of 17 IEEE members participated in the event.

3. An Industrial visit at Central Mechanical Engineering Research Institute, Durgapur was jointly organized by the Dept of ECE, SNU, and IEEE EDS MSIT Student Branch Chapter, Dept. of ECE, MSIT on July 26, 2023. The visit was attended by students of the Department of ECE, MSIT, and SNU. All students benefited immensely from the visit.

4. IEEE ED MSIT SBC in association with the Department of ECE, MSIT organized a technical talk on "Recent trends on optical devices" on 8th February 2023. Mr. Niloy Ghosh, Ph.D. scholar, at IIT Kharagpur delivered the talk. A total of 45 students attended the talk out of which 12 were IEEE student members.

5. IEEE ED MSIT SBC in association with IEEE ED SB, IEEE SSCS Kolkata chapter & Department of ECE, MSIT, Kolkata organized a technical talk on 14th September 2023 on "Posit number system and its application" by Mr. Hemanga Banerjee, Ph.D. scholar at the University of Strathclyde, Glasgow, UK.

6. IEEE Membership orientation program on 14th July 2023. 7. A total 76 students attended the program. Mr. Debadi Prasanna Gangopadhyay, Design and Verification Engineer, Tech Mahindra Cerium Pvt. Ltd. delivered a technical talk titled "Verification techniques in VLSI engineering" on 24th March 2023 organized by the IEEE SSCS Kolkata chapter and IEEE ED MSIT SB in association with the Department of ECE, MSIT. A total of 46 students attended the program, out of which 13 were IEEE student members.

7. Dr. Angsuman Sarkar, Professor, ECE Department, Kalyani Government Engineering College delivered an IEEE Technical talk on "TFET based Biosensors", on 11th May 2023, jointly organized by the IEEE ED MSIT SBC and the Dept. of ECE, MSIT. A total of 66 students attended the program, out of which 21 were IEEE student members.

8. IEEE ED MSIT SBC in association with the Department of ECE, MSIT organized a Project presentation competition on 22nd May, 2023. A total of 63 students attended the project competitions. Mainly VLSI devices, circuits, and system-based projects have been presented. Prof. Debasish De, Professor, MAKAUT, and Prof. Angsuman Sarkar, Professor, Kalyani Government Engineering College judged the best projects.

9. IEEE Hands-on training on "machine learning-based modeling of the device characteristics" on October 19th, 2023. Dr. Papiya Debnath, associate professor, tint, New Town Kolkata was the resource person in the event. a total of 51 students participated in the events out of which 17 were the student members. IEEE ED MSIT SBC in association with the dept. of ECE, MSIT organized the event.

IEEE Electron Devices HIT Student Branch Chapter

1. **Distinguished Lecture on 75th Year of Transistors: Dielectrics responsible for the Transistor's Scaling**

The IEEE Electron Devices HIT Student Branch Chapter jointly with the IEEE EDS Centre of Excellence and Department of E.C.E. Heritage Institute of Technology organized a Distinguished Lecture by Prof. Durga Mishra, Professor and Chair of the E.C.E. Department of New Jersey Institute of Technology, Newark, USA on 15th February 2023 at 11:00 A.M.(IST). The lecture was on "75th Year of Transistors: Dielectrics responsible for the Transistor's Scaling". Prof. Mishra gave an insight into his work and observations over the years in the field of transistors and dielectrics. He talked about the use of different gate dielectrics and their reliability, discussing the evolution of dielectric science in nanoelectronics that enabled the effective scaling of transistors. The audience included professionals, students, and professors from different institutes. The talk was attended by 147 participants.

2. Student Paper Competition 2023

In order to foster an environment of research among undergraduate students, the Robotics Club, HITK in collaboration with IEEE EDS Center of Excellence and IEEE EDS SBC organized a 3-day event 'Student Paper Competition 2023' on March 29 - March 31, 2023. Students submitted their review/research articles on application of robotics in healthcare. A total of 19 papers were accepted through review. The papers were presented in front of a panel of judges in 6 sessions spread out over two days. 5 finalists presented on the third day at the grand finale event. Three papers were selected and awarded cash prizes. The finale was event was attended by 52 students and 11 faculty members.

3. EMPOWERING YOUNG MINDS THROUGH STEM EDUCATION

The IEEE EDS Center of Excellence, Heritage Institute of Technology in collaboration with IEEE SIGHT (Special Interest Group on Humanitarian Technology) Kolkata Section and University Women's Association of Calcutta organized a workshop '**Empowering Young minds through STEM education**', at Shishu Tirtha, a primary school for the underprivileged, run by the NGO Society 5-0 on July 12, 2023.

The workshop was designed to introduce young students from underprivileged backgrounds to the exciting world of science, technology, engineering, and mathematics (STEM) through hands-on learning experiences using electronics kits. The workshop aimed to inspire curiosity, foster creativity, and develop critical thinking skills among the participants. The workshop was conducted by Dr. Mousiki Kar, coordinator of IEEE EDS Center of Excellence, Heritage Institute of Technology and Chair of IEEE SIGHT (Special Interest Group on Humanitarian Technology) Group, Kolkata Section. The workshop started with a brief introduction to robotics, explaining what robots are, how they work, and their significance in today's world using age-appropriate language and visual aids to make the concepts easily understandable. The children were shown examples of robots used in

everyday life, such as automated machines, robotic toys, and robotic vehicles. This segment aimed to connect the workshop's subject matter with real-world applications. The children were also introduced to basic electronic circuits through interactive presentations and simple demonstrations. Each participant was subsequently provided with a pre-designed circuit building kit containing various components, such as motors, integrated circuits, LEDs, batteries, and switches. Dr. Kar, along with two undergraduate engineering student volunteers, demonstrated how to build basic circuits step-by-step, and the children followed along. The workshop was successful in sparking curiosity and interest in STEM among the 6 young participants of class IV. By providing hands-on experiences with electronics, the workshop helped them develop practical skills and fostered creativity and problem-solving abilities. The initiative was facilitated by Ms. Sumita Roy, President of University Women's Association of Calcutta in order to bridge the educational gap and ensure equal access to STEM opportunities for all children, irrespective of their socio-economic backgrounds.

4. THE BALANCING ACT: A WORKSHOP ON THE APPLICATION OF PID CONTROLLER IN THE FIELD OF ROBOTICS

IEEE EDS Student Branch Chapter, Heritage Institute of Technology, Kolkata, in collaboration with IEEE EDS Center of Excellence organized 'The Balancing Act' (A workshop on the application of PID controller), on February 23, 2023.

The speakers of the workshop discussed regarding the basics of circuit design required for building the PID controller. The application of these concepts in a ball balancing model that was built to balance a ball at a set point was demonstrated. The components, algorithm and the working principle of the model were elaborately presented by the student volunteers of the Institute. The event was attended by 186 students from all departments of the Institute.

5. ELECTRONIC PRODUCT DESIGN AND DEVELOPMENT WORKSHOP

The IEEE EDS Student Branch Chapter, Heritage Institute of Technology and the IEEE EDS Center of Excellence in collaboration with the Department of Electronics and Communication Engineering organized a workshop starting on July 26, 2023 with a session on 'Electronic Product Design and Development'. The theoretical sessions held on July 26 were extended to a practical hands-on 'Electronic Product Design Workshop' for undergraduate students which had its first hands-on session on Wednesday, August 02, 2023.

The workshop stretches over a period of two months consisting of eight, two-hour sessions where the students are being trained to build market ready products starting from discrete

circuit components. Since the students have different class schedules, the timing has been kept flexible and in accordance with empty slots available in the class routine.

IEEE Student Branch, Jadavpur University

1. Cypher 3331: 14th and 15th April 2023

Cypher was one of the many events that were part of Srijan, the annual tech fest of Jadavpur university. The event spanned over two days and was divided into two rounds, each round held on a day. The participants were taught about different kinds of cyphers, following which they engaged in a hands on workshop and contest. The event received an overwhelming response, attracting 45 teams (each with a maximum of 3 members).

2. Recruitment Drive at IEEE Jadavpur University Student Branch

In April 2023, the IEEE Jadavpur University Student Branch (JUSB) orchestrated a dynamic recruitment drive to welcome new members. The event aimed to reinforce various teams within IEEE JUSB, each specializing in key areas.

3. EarthXchange Program organized by IEEE Student Branch, Jadavpur University: 5th June 2023

EarthXChange, a unique event organized by IEEE Jadavpur University Student Branch aimed to address the urgent need for action on climate change. The event brought together industry professionals, students, and participants interested in finding sustainable solutions to combat climate change.The event began with a warm welcome note delivered by Urwah Jawed, the Chair of IEEE SB, Dr. Sarbani Roy, CS Chair, and Dr. Sayan Chatterjee, the branch Counsellor. The inauguration was marked by an inspiring speech from Prof. Iti Saha Misra, Chair, IEEE Kolkata Section, which set the tone for the day's activities. Apart from the invited speeches, there are two competitive tracks for the students: Climate Connect and Venture Quest, which aimed to foster data analysis techniques, problem-solving capabilities, and entrepreneurial spirit.

4. IEEE STUDENT CONGRESS 2023: 29/11/23

This year, Jadavpur University proudly hosted the IEEE Student Congress, an esteemed yearly ritual for IEEE Student Branches. The event featured enlightening technical talks, a thought-provoking panel discussion, an engaging debate competition, and a comprehensive recount of the yearly activities by all Student Branch members. The IEEE Student Congress 2023 proved to be a dynamic platform for knowledge exchange, collaboration, and celebration of the accomplishments within the IEEE community.

IEEE MTT-S Student Branch Chapter, Jadavpur University

1. Annual General Meeting (AGM) of 2022 on 29th December 2022
2. Membership drive was conducted on 29th March 2023 where six ME and PhD students became an IEEE and MTT-S members. Many others have shown interest and will avail the IEEE and MTT-S memberships in the upcoming weeks.
3. General Meeting of Members on 21.6.23
4. Annual General Meeting of 2023 on 31.12.23
5. National Symposium on Innovative Technology and Management for Sustainable Growth on 17th January 2023
6. Seminar on Advancement of Microwave Communications and Systems on 15th May 2023
7. Invited Talk on High frequency Communications: Recent Advancements on 22.6.23
8. Seminar on Neuromorphic Computing: Mapping Neural Networks to Hardware on 25.8.23
9. Seminar on Electromagnetic Diffraction Modeling and Simulation on 15.12.23

IEEE Calcutta University Student Branch and IEEE Photonics Society Student Branch Chapter

1. On 08.05.23 Student Branch Meeting With Chairman of All Chapters
2. On 27.06.23 Student Branch Meeting for Career Fair
3. On 12.09.23 A General Awareness Meeting with the Newbies of E.C.E
4. On 01.12.23 Meeting Regarding the Election of New Exe-Com of IEEE Photonics Society CUSB Chapter
5. On 21.12.2023 Inaugural Meeting for the New IEEE Student Branch Chairman and Team

IEEE EDS Calcutta University Student Branch Chapter

1. Administrative meeting: 8/5/23
2. Executive Committee meeting: 10/5/23
3. Meeting with Student Branch to organize a Career Fair: 27/6/23
4. IEEE-EDS Continuous Promotional Campaign: Throughout the year
5. Out-Reach Program: 11/8/23
6. CODEC-2023 IEEE-EDS Membership Drive: 16/12/23
7. DL talk on "Quantum Computing: Harnessing Power of Atomic States for Accelerated and Secure Computing"28/3/23
8. Career Fair: 11/10/23-12/10/23
9. Student Branch and Chapter Awareness Program: 12/10/23

10. Distinguished Lecture Talk to Celebrate 75th Anniversary of Transistor: 11/12/23
11. A.K. Choudhury Centenary Memorial Workshop: 13/12/23

Student branch activity IEEE SB NIT Durgapur

1. HACKHUSTLE on 25.3.23 and 26.3.23: It was a collection of events ranging from seminars on hacking technology to NLP
2. ARCANE on 6th -8th October 2023: It was capture the flag event where participents had to solve the questions based on the hints given
3. NVISION on 19th -20th December: It was a worshop on IOT and basics related to circuit development for 1st years

Gauhati Univ/Assam Engrg College Student Branch of IEEE

1. Annual general meeting on 20th January 2023
2. Administrative meeting on 7th February 2023
3. Meeting for upcoming proposal for IEEE EPICS on 10th October 2023

4. Outreach activity:

An outreach event was organised on 24th February 2023 for popularising science among young students. The student branch members along with faculty coordinator organised a trip to SOS Children's village, Azara to educate students about basics of electricity. The high school students received hands-on experience about how electricity flows, the basics of a circuit, basic experiments about electricity and safety in dealing with electricity. The session had a team of 4 student volunteers, and over 60 high-school student participants.

5. Poster presentation competition:

The student branch organised a poster presentation competition entitled "Budding Minds" on 15th March 2023. The event saw participation from over 5 institutes, presenting on topics like emotion detection algorithms, Pollution monitoring and communication systems. The competition had over 20 participants.

6. Invited Talk:

The student branch organised an invited talk on 5th october 2023. The talk was aimed at encouraging students to learn about continuing education after their graduate degree. The speaker elaborated on how the field was developing, both in academic research and in industrial applications.

7. **VLSI Design Seminar:**

The student branch also organised a VLSI design seminar for students on 22 september 2023. The session covered the basics of using simulation tools for designing VLSI technologies and circuits.

IEEE VSSUT STUDENT BRANCH

1. Administrative meeting on 11th February 2023
2. Administrative meeting on 4th April 2023
3. Administrative meeting on 22nd September 2023
4. Administrative meeting on 10th December 2023
5. **Orientation Program:**

10th April 2023 (Orientation) -The IEEE VSSUT Student Branch organized an engaging orientation event, "आह्वान," on April 10 at the E-learning Center. The event aimed to welcome new members and ignite their passion for innovation and technology. The vibrant welcome poster set the tone for an exciting journey into a world where imagination transforms into reality.

6. **Paper Presentation:**

21st August (Paper Presentation)-The paper presentation was conducted in offline mode among our IEEE VSSUT Student Branch members. This event continues 1 week from 21st Aug to 28th Aug 2023 aiming to provide a platform for participants to present their research and innovative ideas in various domains of technology and engineering.

7. **Technical Quiz Competition:**

30th September (Technical Quiz Competition) :On September 30, 2023, in celebration of IEEE Day, an engaging technical quiz event "Techtrivia" was organized at the E-Learning Centre by the IEEE VSSUT Student Branch. With mind-breaking and brain-challenging questions, this event was conducted to enhance the technical knowledge of the participants, while experiencing the thrill and competitive spirit of quizzes.

8. **28th September to 4th October 2023 (Ideathon/ Idea Submission):**

From September 28th to October 4th, 2023, the IEEE VSSUT Student Branch conducted "Sparkathon" an online event for fostering innovation and encouraging participants to present novel ideas to solve pressing issues. This event aimed to engage participants in addressing critical societal challenges through innovative technological solutions.

9. 1st October 2023(Coding Competition):

On 1st October 2023, a coding contest titled "Binary Battle" was organized in the celebration of IEEE Day by the IEEE VSSUT Student Branch in online mode. The contest aimed to develop a competitive environment for participants to showcase their coding skills and problem-solving abilities.

10. 4th Oct and 5th Oct 2023 (Online Symposium Of Problem Solving Hackathon):

The flagship event of IEEE VSSUT, the Hackathon event, "Symposium" was conducted in online mode in celebration of IEEE Day, by the IEEE VSSUT Student Branch. This event took two days from October 4th to October 5th, 2023 aiming to provide a platform for participants to present their research and innovative ideas in various domains of technology and engineering for solving real world issues.

11. 4th October 2023(Creative Painting Competition):

On 4th October 2023, Artopia, an art contest held as part of the IEEE Day celebrations conducted by the IEEE VSSUT Student Branch. This event provided a creative platform for participants to showcase their artistic talents. The event aimed to merge technology and art, providing an imaginative exploration of the technology.

IEEE Student Branch, Tezpur University

1. ROBOCON

The IEEE Student Branch of Tezpur University organized a comprehensive bootcamp program, "DD ROBOCON," on March 25, 2023. The event aimed to provide participants with a thorough understanding of robotics, with a focus on robot design, FreeCAD usage, robot electrical and control systems, and practical demonstrations.

2. Invited talk

The IEEE Student Branch of Tezpur University had the privilege of hosting Mr. Srinivas Chamarthy for an nsightful and inspiring talk on March 27, 2023. Mr. Chamarthy shared his life experiences and objectives, emphasizing the importance of realizing oneself. He commenced the talk by providing a glimpse into his life journey. He shared personal anecdotes, challenges faced, and lessons learned throughout his career. Participants gained valuable insights into the experiences that shaped Mr. Chamarthy's professional and personal growth. Mr. Chamarthy elaborated the significance of contributing to scientific advancements that have a positive impact on society. He spoke about the need for individuals to align their skills and knowledge towards constructive and impactful goals He

stressed the importance of research and innovation in driving progress and creating a sustainable and inclusive society.

3. Technical webinar

The IEEE Student Branch of Tezpur University organized a webinar on "Opto-Electronics and its Future Scope in Research and Industry" on March 29, 2023. The guest speaker for the event was Mr. Rahul Singh, a Ph.D. scholar in the Department of Chemistry at SRM University AP. Mr. Singh's research focuses on the optoelectronic properties of colloidal semiconductor nanocrystals, particularly Quantum Dots, and he has a notable record of publishing 11 research articles.

The webinar commenced with a comprehensive introduction to opto-electronics, shedding light on its principles and applications. Mr. Singh provided an overview of the interdisciplinary nature of opto-electronics, emphasizing its role in devices. Mr. Singh provided an insightful analysis of the future scope of opto-electronics in both research and industry. He highlighted emerging trends, potential applications, and the role of ongoing research in shaping the future landscape of opto-electronics.

The webinar featured an interactive question-and-answer session where participants had the opportunity to engage with Mr. Rahul Singh. Attendees posed thoughtful questions, further enriching the learning experience and fostering a sense of community among participants.

4. Induction Programme for IEEE Smart Village

The IEEE Student Branch of Tezpur University organized an induction program for IEEE Smart Village Student Volunteers on April 25, 2023. The program aimed to familiarize volunteers with the mission of IEEE Smart Village, focusing on sustainable and scalable development in underserved communities through a three-pillar strategy encompassing technology, education, and entrepreneurship. The program began with an introduction to the IEEE Smart Village initiative, highlighting its overarching goal of providing sustainable solutions to address the energy, education, and entrepreneurial needs of underserved communities globally. The induction program clarified the rolesand responsibilities of student volunteers within IEEE Smart Village. Volunteers were encouraged to actively participate in projects, collaborate with communities, and leverage their technical and leadership skills to drive positive change. A key aspect of the program was fostering a sense of community and collaboration among the volunteers. Networking sessions provided an opportunity for volunteers to connect, share ideas, and form teams for future projects.

5. Web3Adda by Web3Assam

Web3assam, in collaboration with the IEEE Student Branch of Tezpur University, organized a groundbreaking event, "Web3adda," on May 6, 2023. The event started with an engaging

introduction, setting the stage for a deep exploration of the transformative potential of Web3 technologies. Participants were welcomed to a journey that promised insights into the evolution of the web and its future trajectory.

The talks covered emerging technologies, trends, and paradigms that are reshaping the digital landscape. Participants gained valuable perspectives on how the web is evolving beyond its current state. A significant focus of Web3adda was on the concept of decentralization. Speakers elucidated the amazing power decentralized systems bring to the web, ranging from enhanced security and privacy to the potential for a more inclusive and democratic digital environment.

A significant focus was also put on Blockchain, as a key enabler of decentralization, was thoroughly explored. Experts delved into the intricacies of blockchain technology, its applications beyond cryptocurrencies, and its role in reshaping trust and transparency on the web.

"Web3adda" was a resounding success, capturing the attention of participants and providing them with a comprehensive understanding of the future of the web.

6. IEEE Week

The IEEE Student Branch at Tezpur University orchestrated a spectacular IEEE WEEK 2023 from September 25th to 27th. This three-day event was a harmonious blend of learning sessions, innovation, networking, and a celebration of the engineering spirit.

7. International Representation

Dr. Rupam Goswami, the Faculty Coordinator of IEEE Student Branch (SB) at Tezpur University, played a pivotal role in representing Tezpur University's India-Assam Sustainable Livelihood Project as an ISV Developer sponsored by IEEE Smart Village. This international representation occurred at the 10th IEEE PAC and IEEE Smart Village Meeting held in Marrakech, Morocco, from November 5 to November 11, 2023.

Dr. Rupam Goswami holds a significant position as a member of the 16-membered IEEE Smart Village South Asia Working Group. This group plays a crucial role in shaping and implementing initiatives related to sustainable development and access to technology in the South Asia region. Dr. Goswami presented the India-Assam Sustainable Livelihood Project, highlighting its objectives, methodologies, and outcomes. The presentation showcased how the project aligns with the broader vision of IEEE Smart Village in promoting sustainable development.

8. MOU Signed with Samatrix.io

Samatrix.io is leading technology solution and training provider in India, specializing in AI, Machine Learning, and Blockchain solutions for research organizations and technical

institutions. The MOU signing between Samatrix.io and the IEEE Student Branch at Tezpur University marked a significant collaboration aimed at fostering a mutually beneficial partnership. The primary objective is to enhance academic and professional growth by leveraging the expertise and resources of Samatrix.io in the areas of AI, Machine Learning, and Blockchain. Samatrix.io brings to the table extensive experience and expertise in cutting-edge technologies, including AI, Machine Learning, and Blockchain. The MOU facilitates the exchange of knowledge through workshops, seminars, and expert sessions, enriching the academic environment at Tezpur University.

IEEE Dibrugarh Univ Student Branch

1. Administrative Meetings: 12.4.23
2. Administrative Meetings: 16.4.23
3. Administrative Meetings: 2.5.23
4. Unleashing the power of vega: A virtual exploration of advanced processor technology: 29/06/2023
5. Design Principles of Embedded System for Safety Critical Operation: 23/07/2023
6. Technical Talk on RF and Microwave Engineering. Date: 17/08/2023
7. Photonic Integrated Circuit (Recent Trends and Future Demands): 31/08/2023
8. Session on "AI and ML": 04/10/2023
9. "Intelligent System - Is it IoT": 08/10/23
10. Classroom to Cubicle: An Engineer's Roadmap for a Rewarding Career: 20/10/2023
11. A Hybrid session on the Importance of IEEE and a webinar "Superconducting Filter Bank Spectrometer Technology for Microwave Atmospheric Remote Sensing and Numerical Weather Prediction": 03/11/2023
12. Gears To Code: A Transition from Mechanical Engineer to Software Engineer. Date: 11/11/2023

IEEE Student Branch BBIT

1. BBIT KOLKATA MEET AND GREET: 2/8/23
2. INAUGURATION CEREMONY OF IEEE STUDENT BRANCH-BUDGE BUDGE INSTITUTE OF TECHNOLOGY: 18/8/23
3. IEEE STUDENT BRANCH MEETING AND OFFICER'S SELECTION FOR MTTS CHAPTER: 27/9/23
4. FACULTY DEVELOPMENT PROGRAM: 20TH – 24TH NOVEMBER 2023
5. IEEE STUDENT BRANCH GENERAL BODY MEETING: 19/12/23

IEEE Student Branch, JGEC

1. Annual General Meeting: February 2023
2. Membership Drive: 17.03.2023 - 14.04.2023
3. Ricerca - Case Study Competition: 7th May 2023
4. Tech Exhibition - Intra College Innovation Challenge: 5th August, 2023 – 6th August, 2023
5. MITACS GRI 2024 - APPLICATION GUIDANCE: 19th September, 2023
6. Intra Ricerca - Tech Fest: 9th October, 2023

SSU-IEEE Student Branch

1. IEEE Student Branch Orientation Program: 30/9/23
2. IEEE Awareness Program with Make-a-thon Zero Coding Competition: 7/10/23
3. Official Inauguration of SSU-IEEE Student Branch: 8/11/23
4. Interaction Session with IEEE Chair Head Prof. (Dr.) Chinmoy Kumar Panigrahi: 18/11/23
5. Participated in 2023 International Conference on STPEC at KIIT University, Bhubaneswar: 10/12/23

IEEE Student Branch Birla Institute of Technology-Deoghar

1. Administrative meetings: 22/1/23
2. Administrative meetings: 18/2/23
3. Administrative meetings: 28/2/23
4. Administrative meetings: 15/3/23
5. Administrative meetings: 19/4/23
6. Administrative meetings: 22/1/23
7. Administrative meetings: 10/8/23
8. Administrative meetings: 15/9/23
9. Administrative meetings: 10/10/23
10. Administrative meetings: 3/11/23
11. Administrative meetings: 4/1223
12. Administrative meetings: 6/12/23
13. Administrative meetings: 26/12/23
14. Orientation program of new IEEE Student Members: 5/12/22
15. IEEE Xtreme Preparation: 4/10/23
16. Orientation program of new IEEE Office bearers Members 2023: 5/12/23
17. Orientation program of new IEEE Student Members: 19/12/23

18. Live seminar on "Innovation Processes: From Lab to Market.": 13/2/23
19. TRIAL BY TRIVIA 2.0 15th & 16th April 2023
20. Last Minute Preparation Tips 18th June, 2023
21. Cloud-based M-Health Systems: 3/10/23
22. ROBO FIFA - THE ULTIMATE ROBOT SOCCER SHOWDOWN: 5/11/23
23. Gyan Ganga Webinar: 23/12/23

IEEE Computer Society IEM SBC

Total Number of Administrative Meetings: 3
1. Administrative Meetings:11/3/23
2. Administrative Meetings:18/12/23
3. Administrative Meetings:22/12/23
Total number of events related to Student Branch and Affinity Groups: 2
4. Squid Game event: 18/3/23
5. Elevate'23: 6th -9th April 2023
Total number of professional lectures/seminars/workshops/technical activities: 3
6. TechXplore webinar on "Applications of IoT and WSN in Smart Agriculture" on July 28, 2023.
7. "Wingardium Deviosa": on August 19, 2023
8. Webinar on "Getting to Know IEEE": November 18, 2023

IEEE RAS Student Branch Chapter Silchar Subsection

1. Administrative Meetings: 18/8/23
2. Orientation program: 11/8/23
3. Deep Dive in Robotics: 14/10/2023 and 9/11/2023 and 10/11/2023

The IEEE Robotics and Automation Society (RAS), Silchar Subsection, hosted a dynamic hybrid webinar on October 14, 2023, bringing together a community of enthusiasts, engineers, and innovators passionate about advancing technology in robotics and automation. The event featured Mr Himajit Aithal a seasoned professional with a decade of experience at Robert Bosch, serving as a Senior Architect in the Engineering Technology and Strategy Group within the Innovation and Incubation unit. The discussion encompassed a range of projects, including the Robotic Snake, Discrete Control of Two-Wheeled Mobile Robot, Path Planning and Obstacle Avoidance for a 6DOF Robotic Arm, AI in Software Engineering utilizing Natural Language Processing, Smart City

initiatives employing Computer Vision, and Collaborative Decision Making. The event occurred in a hybrid format, with 40 participants joining us, some virtually and others in person.

4. Robotics and Autonomous System Workshop: November 10th and 11th, 2023

The workshop's exploration continued with an in-depth focus on "Path Planning and SLAM (Simultaneous Localization and Mapping)"; Participants had the opportunity to delve into the intricacies of autonomous navigation.

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 (IETE), and Computer Society of India is cordial.

C.2 Problems to be anticipated

While each IEEE section is unique, there are some common challenges and problems that may be anticipated. Here are a few:

1. Membership Engagement:
- Retention: Maintaining and increasing membership can be a challenge. Sections may face difficulties in retaining existing members and attracting new ones.
- Inclusivity: Ensuring that the section is inclusive and welcoming to individuals from diverse backgrounds and career stages can be a constant concern.

2. Financial Management:
- Funding: Sections often rely on funding for events, activities, and operations. Securing consistent funding and managing finances effectively can be a challenge.
- Sponsorship: Attracting sponsors for events or other activities may pose difficulties, especially in economic downturns.

3. Event Organization:
- Attendance: Getting members to attend events can be challenging due to busy schedules, competing commitments, or lack of interest.
- Relevance: Ensuring that events and activities are relevant to the diverse interests of members can be a constant struggle.

4. Leadership Transition:

• Succession planning: Ensuring a smooth transition of leadership can be challenging. Having a plan for succession and leadership development is crucial.

5. Technology and Communication:

• Adopting Technology: Keeping up with and adopting new technologies for communication and event organization can be a challenge for some sections.

• Communication: Maintaining effective communication channels within the section can be difficult, especially with a large and diverse membership.

6. Government Regulations and Compliance:

• Compliance: Ensuring that the section complies with local laws and IEEE regulations can be challenging, particularly if there are changes in legislation.

7. Member Benefits and Value Proposition:

• Demonstrating Value: Communicating and demonstrating the value of IEEE membership and section involvement can be challenging, particularly for early-career professionals.

8. Globalization:

• Diversity of Members: Sections may have members from diverse cultural backgrounds. Ensuring that the section is inclusive and sensitive to cultural differences can be challenging.

9. Collaboration: Collaborating with other IEEE sections or professional organizations can be challenging due to differences in priorities, schedules, and organizational structures.

10. Adapting to Change:

• Technological Changes: Adapting to rapidly changing technologies and ensuring that the section remains relevant can be a continuous challenge.

Sections that actively address these challenges through strategic planning, effective communication, and member engagement initiatives are more likely to thrive and provide valuable experiences for their members. Regular feedback from members can also help identify and address specific concerns within a section.

C.3 Best Practices of your Section

- The Section holds EXECOM Meeting almost once a month.
- The AGM is organized every year in January over dinner with at attendance of over 200 members separate student congress for student members.
- IEEE Kolkata Section supports funding a token amount to its members for presenting papers at IEEE conferences.
- The Section strongly supports Technical Co-sponsorship for conferences but at the same time has implemented new rules to improve the quality of conferences. It includes mandatory subscription to IEEE Xplore, active IEEE Student Branch and faculty IEEE members.

- Any organization having a repeated conference must have an increase in its regular IEEE membership .
- Outstanding Volunteer awards are given to promote contribution to IEEE activities.
- Lifetime Achievement awards are given to senior IEEE members of the section in recognition of their contribution to IEEE activities.
- The Section flagship conference CALCON is bi-annual, with all papers uploaded to IEEE Xplore.
- The Section funds student outreach programs with different Societies.
- IEEE Kolkata Section supports funding a token amount to its student members for presenting papers at IEEE conferences.
- The Section promotes growth in Student Branches and student members in an academic institution by making it mandatory to have one in order to qualify for IEEE Xplore in a Conference.
- Outstanding Student Volunteer awards are given to promote student contribution to IEEE activities.
- The Section provides Technical Co-sponsorship to conferences approved by its Sub-Sections.
- IEEE Kolkata Section supports hosting of IEEE India Council flagship conferences like INDISCON and INDICON by its sub-sections.
- The Section invites EXECOM members from its sub-sections to be a part of the EXECOM of the Kolkata Section .
- Outstanding Student Volunteer and Volunteer awards are open for nomination from any of its sub-sections for contribution to IEEE activities.
- The IEEE Milestone Plaque for the "First Millimeter-wave Communication Experiment" by Sir J. C. Bose in 1894-1896 was formally dedicated on 15th September 2012 at the Presidency University in Kolkata.
- The IEEE Milestone Plaque for the "Raman Effect" by Sir C. V. Raman in 1928 was formally dedicated on 15th September 2012 at the Indian Association for the Cultivation of Science in Kolkata.
- The IEEE Milestone Plaque for establishing the first commercial electric supply company in East Asia by The Calcutta Electric Supply Corporation in 1899 was formally dedicated on 18th December 2021 at the CESC House (Victoria House) in Kolkata.
- Outstanding Section Membership Recruitment Achievement and Outstanding Section Retention Performance Award over almost a decade.

PART D
GOALS AND PLANS

D.1 Goals

1. **Member Engagement:** Promoting active participation and engagement of IEEE members within the local community.

2. **Professional Development:** Providing opportunities for members to enhance their professional skills and knowledge through conferences, workshops, seminars, and other educational activities.

3. **Networking:** Facilitating networking opportunities among professionals, researchers, and students in the field of electrical and electronics engineering.

4. **Technical Activities:** Organizing technical events, conferences, and seminars to disseminate knowledge, share research findings, and foster collaboration among members.

5. **Student Activities:** Supporting and encouraging student members through activities such as student branch events, competitions, and mentorship programs.

6. **Community Outreach:** Engaging with the local community to promote awareness and understanding of electrical and electronics engineering, and contributing to societal well-being through technology-related initiatives.

7. **Publication and Communication:** Disseminating information about IEEE activities, events, and technical advancements through newsletters, websites, and other communication channels.

8. **Promoting Diversity and Inclusion:** Fostering an inclusive environment that welcomes individuals from diverse backgrounds and encourages their active participation in IEEE activities.

9. **Collaboration with Industry:** Establishing connections with industry partners to bridge the gap between academia and industry, fostering collaboration for mutual benefit.

10. **Advocacy:** Representing the interests of IEEE members at the local level and advocating for policies that support the advancement of technology and the engineering profession.

D.2 Implementation Plans

1. **Facilitate a Comprehensive One-Day Program:**
   - Coordinate a one-day program that brings together Branch Counselors from all student branches.
   - Foster collaboration, share best practices, and strengthen the network among counselors.

2. **Conduct Annual Memorial Lectures:**

- Host special memorial lectures each year to commemorate distinguished individuals and promote knowledge sharing.
- Provide a platform for insightful discussions on impactful topics within the IEEE community.

3. **Promote Youth and Student Educational Programs:**
   - Emphasize the significance of IEEE involvement through targeted initiatives for Young Professionals (YP) and student members.
   - Create awareness about the educational opportunities and benefits associated with active participation in IEEE activities.

4. **Empower Women in Engineering (WIE):**
   - Organize programs that actively involve Women in Engineering (WIE) members.
   - Advocate for the IEEE WIE cause by engaging in outreach activities to inspire and empower young women in the field of technology.