

Chapter Report 2023

IEEE AP/MTT KOLKATA CHAPTER

Submitted by
Dr Koushik Dutta, Chair, IEEE AP/MTT Kolkata Chapter

Chapter Officers 2023

Chair: Koushik Dutta

Secretary: Kaushik Mandal

Vice-Chair(s): Susanta Kumar Parui, Chittajit Sarkar

Treasurer: Ankita Indu

Membership Count

31st Dec 2023

Last Year (Dec 2022): 458

This Year (Dec 2023): 928

Membership Growth: 102 %

Summary by Product by Region			
Product Name	Region	Total	
IEEE Antennas and Propagation Society Membership	R10		282
	Total		282
IEEE Microwave Theory and Technology Society Membership	R10		646
	Total		646
Grand Total			928

Activity Summary

Last Year Activity Summary (2022):

Total Non-Technical Meeting: 7 (AGM+ 6 ExCom)

Total Technical Events: 11 (2 virtual + 8 Physical + 1 Hybrid)

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Download Brief Report: [Click here](https://rb.gy/yvcifj)(https://rb.gy/yvcifj)

Activity Summary 2023:

Total Non-Technical Meeting: 8 (AGM+ 7 ExCom)

Total Technical Events: 37 (34 Physical + 3 Hybrid)

- **IEEE Conferences:** 2
- **International Workshops:** 6
- **National Workshops:** 2
- **Distinguish Lectures (DLs):** 4
- **Outreach Events:** 12
- **Membership Development:** 6

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VTools Links for all Events in 2023: [DOWNLOAD](#)

Brief Reports on Technical Events

Event 1:

Event: IEEEEDL Talk

Date: Jan 5, 2023

Time: 3 PM to 5 PM

Venue: ETCE Seminar Hall, IEST, Shibpur, Howrah

Speaker: Dr. Arun Bhattacharyya, APS DL,RF Center of Excellence Lockheed Martin Space Systems Littleton, CO, USA

IEEE AP-MTTs Kolkata Chapter in association with IEEE AP SBC of Indian Institute of Engineering Science and Technology (IEST), 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 IEST, 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).

Event 2:

Event: One Day International Workshop/Webinar

Title: Recent Developments in Electromagnetic Metamaterial from RF through THz

Date: Jan 5, 2023

Time: 10.00 AM to 5.00 PM (IST)

Venue: School of Electronics Engineering, Campus-12, KIIT DU Bhubaneswar

Speakers:

1. **Prof. Nagendra Prasad Pathak**, Prof. and HOD of Electronics & Communication Engineering, IIT Roorkee, India.
2. **Prof. Amalendu Patnaik**, Dept. of Electronics & Communication Engineering, IIT Roorkee, India.
3. **Prof. Pankaj Kumar Chaudhary**, Prof. of College of Optical Science and Engineering, International Research Centre for Advance Photonics, Zhejiang University (China)
4. **Prof. B.N. Basu**, ex-Professor, Dept. of Electronics Engineering, IIT, BHU, Varanashi, UP

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.

Event 3:

Event: IEEE Global Microwave and Antenna Conclave

Theme: Scientific Advancements in High Frequency Engineering for a Connected World

Mode: Hybrid Mode

Date: 12th Jan 2023

Time: 9.30 AM to 5.30 PM

Venue: Seminar room, SAMEER Kolkata Centre, Block-GP, Salt Lake Electronics Complex, Sec-V, Kolkata

Speakers:

1. **Dr. Nemaï Chandra Karmakar**, Associate Professor, Department of Electrical and Computer Systems Engineering, Monash University, Australia
2. **Dr. P H Rao**, Director General, SAMEER, MeitY, Govt. of India
3. **Dr. Tapas Chakraborty**, Principal Scientist, TCS Research
4. **Dr. Arijit Majumder**, Officer-in-Charge, SAMEER Kolkata

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. Nemaï 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.

Event 4:

Event: Lecture Meeting

Title: Space Technology for the Last Mile Application

Speaker: **Shri Tapan Misra**, FNAE, Founding Director and Chief Scientist, SISIR Radar Pvt. Ltd, Kolkata

Date: Feb 15, 2023 (Wednesday)

Time: 3:30 PM (IST)

Venue: B. R. Nag Auditorium, 3rd floor, Institute of Radio Physics and Electronics, University of Calcutta (CU)

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. Debatoḥ 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.

Event 5:

Event: IEEE One Day Hands-On Workshop

Date: February 17, 2023.

Time: 10.00 am - 3.30 pm (IST)

Venue: Vivekananda Seminar Hall, Asansol Engineering College

Speakers:

1. **Dr. Koushik Dutta**, Chair, IEEE AP-MTTs Kolkata Chapter
2. **Mr. SkRafidul**, CSIR Senior Research Fellow, IRPE, University of Calcutta

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, SkRafidul, who showcased the design of different antenna designs and finally demonstrated the design of a Pyramidal Horn antenna using Ansys HFSS.

Event 6:

Event: IEEE Lecture Meeting (CELEBRATION OF NATIONAL SCIENCE DAY 2023)

Date: Feb 28, 2023(Tuesday)

Time:2:00 PM(IST)

Venue:B.R.Nag Auditorium,3rdfloor, InstituteofRadioPhysicsandElectronics, UniversityofCalcutta(CU)

Speaker1: Prof.PrasantaKumarBasu,Ex-Professor,Instituteof RadioPhysics andElectronics,CU,Kolkata

Titleoftalk:RamanEffectand itsApplicationto ComputersandCommunication

Speaker2:Dr.ChinmoySaha,AssociateProfessor,IndianInstituteof SpaceScience

andTechnology,Thiruvananthapuram,Kerala

Titleoftalk: Trends,Techniques and FutureChallenges in AntennasEngineeringfor Ground,SpaceandVersatileApplications

Speaker3:Mr.SomnathMaity,Ex-ChiefGeneralManager,CalcuttaTelephones(BSNL),Dept. ofTelecom(DOT),Govt.ofIndia

Titleoftalk:Evolution ofCommunicationTechnology

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 Mukhopadhyay, 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.

Event 7:

Event: Electronics Project Competition

Date: 17th March, 2023

Venue: UEM Kolkata

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.

Event 8:

Event: Inauguration MTT SBCs of IEM and UEM

Venue: IEM Gurukul Campus, Kolkata

Date: 10 April 2023

Time: 9.30 am onwards

Special Guests:

1. **Prof. Nuno Borges Carvalho**, President, IEEE MTTS, Prof, Uni. of Aveiro, Portugal (online).
2. **Dr. Goutam Chattopadhyay**, Fellow IEEE, Chair, MTTS MGA, Sr. Scientist, NASA-JPL.
3. **Prof. Iti Saha Misra**, Chair, IEEE Kolkata Section, Professor, Jadavpur University.
4. **Dr. Chinmoy Saha**, IIST, Thiruvananthapuram, R10 Coordinator, IEEE MTTS.

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)

Event 9:

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

Date: April 10, 2023

Time: 2pm

Venue: SV Auditorium, Heritage Institute of Technology, Kolkata

Special Guests:

1. **Prof. Nuno Borges Carvalho**, President, IEEE MTTS, Prof, Uni. of Aveiro, Portugal (online).
2. **Dr. Goutam Chattopadhyay**, Fellow IEEE, Chair, MTTS MGA, Sr. Scientist, NASA-JPL.
3. **Dr. Chinmoy Saha**, IIST, Thiruvananthapuram, R10 Coordinator, IEEE MTTS.
4. **Dr. Mrinal Kanti Mandal**, Associate Professor at E & ECE Department, IIT KGP

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 MTT-S 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.

Event 10:

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

Date: 11-12 April 2023

Time: 10 am - 5:00 pm

Venue: APC Hall, Netaji Subhash Engineering College, Technocity, Garia, Kolkata 700152.

Special Guests:

1. **Prof. Nuno Borges Carvalho**, President, IEEE MTTs, Prof, Uni. of Aveiro, Portugal (online).
2. **Dr. Goutam Chattopadhyay**, Fellow IEEE, Chair, MTTs MGA, Sr. Scientist, NASA-JPL.
3. **Prof. Debatosh Guha**, Fellow IEEE, Professor, IRPE, CU, IEEE APS DL, Chair, APS MGA, & Chair, APS Meas. Com.
4. **Prof. Iti Saha Misra**, Chair, IEEE Kolkata Section, Professor, Jadavpur University.
5. **Dr. Chinmoy Saha**, IIST, Thiruvananthapuram, R10 Coordinator, IEEE MTTs.

Speakers:

1. **Dr. Mrinal Kanti Mandal**, Professor, IIT Kharagpur, Chair, IEEE Kharagpur Section.
2. **Dr. Debasis Mitra**, Associate Professor, IEST, Shibpur
3. **Sk. Rafidul**, Senior Research Scholar, University of Calcutta
4. **Dhruba Das**, Scientist, SAMEER, Kolkata
5. **Ms. Manisha K**, ANSYS CADFEM India Private Limited

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. SkRafidul 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.

Event 11:

Event: IEEE International Seminar on (Fostering technological innovation and excellence for benefit of humanity)

Date: 11 April 2023

Time: 3 pm

Venue: Budge Budge Institute of Technology (BBIT), Kolkata

Guests and Speakers:

1. **Dr. Goutam Chattopadhyay**, Fellow IEEE, Chair, MTTs MGA, Sr. Scientist, NASA-JPL.

2. **Dr. Chinmoy Saha**, IIST, Thiruvananthapuram, R10 Coordinator, IEEE MTTs.

Co-Ordinator: Prof. Dr. Soumen Banerjee (Professor-ECE Department, BBIT-Kolkata)

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 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.

Event 12:

Event: Hands-On Workshop on MATLAB & SIMULINK

Date: 11th April, 2023

Venue: UEM Kolkata

Resource person: Mr. Pickon Majumdar & Mr. Shubrojoyoti Moitra from Mathworks India Pvt. Ltd.

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 Mathworks 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. Shubrojoyoti 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.

Event 13:

Event: IEEE Lecture Meeting

Speaker: Dr. Chandrakanta Kumar, U R Rao Satellite Centre ISRO, Bangalore

Title of the Talk: Learnings while Burning My Fingers with Antennas

Date: 19th April 2023 (Wednesday)

Time: 3:00 PM – 4.00 PM(IST)

Venue: Auditorium 2, Department of ECE, NIT Durgapur

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.

Event 14:

Event: Technical lecture

Title: GUI-based Rotman Lens Designer: Design Principles, Implementation and Lessons Learned

Speaker: **Dr. Ravi Kumar Arya**, Distinguished Professor, Xiangshan Laboratory, Zhongshan Institute of Changchun, University of Science and Technology, China

Date: 2nd May 2023 (Tuesday)

Time: 3:00 PM - 4:30 PM (IST)

Venue: A. N. Daw Seminar Room, 1st floor, Institute of Radio Physics and Electronics, University of Calcutta (in **Hybrid Mode**)

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.

Event 15:

Event: Two Days IEEE Workshop SYNCLIPSE 2023

Title: SYNCLIPSE 2023

Speakers: from industries and academia

Date: 12th and 13th May 2023

Time: 10:00 AM - 5:30 PM (IST)

Venue: APC Hall, Netaji Subhash Engineering College

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).

Event 16:

Event: IEEE Lecture Meeting

Title: Simulation-based Inference using Structured Data: A case study on “Dark Matter Detection”

Speaker:Dr. Venkat Roy, Senior Engineer, Multicore Ware Inc., San Jose, California, USA

Date:12th May 2023 (Friday)

Time: 3:30 PM - 5:00 PM (IST)

Venue: A. N. DawSeminar Room, 1st floor, IRPE, University of Calcutta, 92- A.P.C Road, Kolkata-700009

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 9eionizer (KBLG). He also showed how the 9eionizer 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.

Event 17:

Event:IEEE Distinguished Lecture (APS DL)

Title: Overview of Electromagnetic Selective Structures

Speaker: Prof. Zhongxiang Shen, APS DL, School of Electrical and Electronic Engineering Nanyang Technological University, Singapore

Date: May 18, 2023

Time: 10:00 AM - 1:00 PM (IST)

A Distinguished lecture event on "Overview of Electromagnetic Selective Structures" was successfully hosted by IEST, Shibpur ETCE department at ETCE seminar hall IEST, Shibpur in association with the IEEE AP & MTTs SBC of IEST, 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 IEST 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.

Event 18:

Event: Industrial Visit

Date: 28th Aug, 2023

Time: 10.00AM to 5.00 PM (IST)

Venue:DoordarshanKendra, Kolkata

Netaji Subhash Engineering College's Department of ECE arranged a one-day visit toDoordarshan 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.

Event 19:

Event: IEEE Advanced School of Antennas (International Workshop)

Speaker: 1. **Paolo Rocca**, ELEDIA Research Center, University of Trento, Italy.

2. **Bo Liu**, University of Glasgow, UK.

3. **Mobayode Akinsolu**, Wrexham Glyndwr University, UK.

4. **Mr. Sourabh Joshi**, MathWorks

Date: June 22-24, 2023

Venue: KIIT University, Bhubaneswar, India

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.

Event 20:

Event: Technical lecture

Title: COSMOS: The Final Frontier

Speaker: **Dr. Debiprosad Duari**, Director, Research and Academics, M. P. Birla Institute of Fundamental Research, Kolkata

Date: 14th July 2023 (Friday)

Time: 3:00 PM - 5:00 PM (IST)

Venue: 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), 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.

Event 21:

Event: Membership Development & Seminar

Speaker: **Dr. Koushik Dutta**, Chair Kolkata section and advisor of NSEC student branch chapter.

Date: 4th Aug, 2023

Time: 3:30 PM (IST)

Venue: ECE Dept., 3rd year classroom

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.

Event 22:

Event: Membership Development & Seminar

Speaker: Dr. Koushik Dutta, Chair Kolkata section and advisor of NSEC student branch chapter.

Date: 16th Aug, 2023

Time: 10.00 AM (IST)

Venue: ECE Dept., 1st year classroom

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.

Event 23:

Event: Membership Development & Seminar

Speaker: Dr. Koushik Dutta, Chair Kolkata section and advisor of NSEC student branch chapter.

Date: 17th Aug, 2023

Time: 10.00 AM (IST)

Venue: ECE Dept., 1st year classroom

The Netaji Subhash Engineering College Student Branch Chapter (NSEC-SBC) organized a membership development programme at the Electronics and Communication Engineering Department, 1st year classroom on 17th August 2023. The program was opened by Dr. Koushik Dutta, advisor of NSEC student branch and chair of Kolkata section. Dr. Dutta described the benefits of being a member of an IEEE Student Branch, which allows you to meet and learn from other IEEE Student and Graduate Student members in your area, as well as engage with IEEE professionals. As an IEEE Student membership, they can apply for various grants, scholarships, awards, and much more. The AP/MTTs student branch members and the MTTs student branch members attended that event. Students are excited and participate actively with their questions. First come, first served, the new membership amount was reimbursed. In the later stages of membership development, these types of programs were conducted.

Event 24:

Event: IEEE lecture meeting & membership development

Date: 18th Aug 2023

Time: 3:30 PM (IST)

Venue: ECE Dept., 2nd year classroom

IEEE meeting was held at the 2nd year classroom of the Electronics and Communication Engineering Department on 18th August by Netaji Subhash Engineering College Student Branch Chapter (NSEC-SBC). An NSEC SBC meeting was called to discuss upcoming events. In this discussion, all members actively participated.

Event 25:

Event: Engineers' Day Celebration

Date: 15th Sept., 2023

Time: 10.00AM to 2.00 PM (IST)

Venue: APC Hall, Netaji Subhash Engineering College

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, IIST, 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.

Event 26:

Event: IEEE APS Distinguished Lecturer (APS DL) Talk

Title: Can perfectly electric conducting obstacles modify the permeability of metamaterial?

Date: 10 October 2023 (Tuesday)

Time: 3 PM to 4 PM

Venue: SAMEER Kolkata Centre, Salt Lake Electronics Complex, Kolkata-700091

Speaker: Dr. Arun Bhattacharyya, RF Center of Excellence Lockheed Martin Space Systems Littleton, CO, USA

IEEE AP-MTTs Kolkata Chapter in association with IEEE AP/MTTs SBC of Indian Institute of Engineering Science and Technology (IIST), 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-700091 on 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.

Event 27:

Event: Education Excursion and Industrial Visit

Venue: IIT Kharagpur, Salua Air force Radar station

Date: 11-12 Oct, 2023

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.

Event 28:

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

Venue: KIIT University, Bhubaneswar, India

Date: 24-26 Nov 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.

Speakers:

Paolo Rocca, ELEDIA Research Centre, University of Trento, Italy.
Prof. Ganapati Panda, Prof. & Research Advisor, CV Raman Global University, Bhubaneswar, India
Dr. Jagannath Malik, Indian Institute of Technology Patna
Dr. Hemant Rath, Principal Scientist, TCS Research Bhubaneswar
Prof. Rudra Sankar Dhar, NIT Mizoram
Prof. Debatosh Guha, Professor, University of Calcutta
Prof. Amalendu Patnaik, Indian Institute of Technology Roorkee
Prof. Kailash Chandra Roy, Indian Institute of Technology Patna
Dr. Ajit Kumar Panda, Director, VVDN Technologies, Bhubaneswar
Dr. Subhransu Ranjan Samantaray, Indian Institute of Technology Bhubaneswar
Prof. Suprava Patnaik, Kalinga Institute of Industrial Technology, Bhubaneswar
Dr. Koushik Dutta, Chair, IEEE AP/MTT Kolkata Chapter
Dr. Debi Prasad Dash, Principal Scientist, IMMT, Bhubaneswar

Event 29:

Event: 8th IEEE International Conference on “**Computer and Devices for Communication (CODEC 2023)**”

Venue: Ramakrishna Mission Institute of Culture, Golpark, Kolkata, India

Date: 14-16 Dec 2023

Organized by: Institute of Radio Physics and Electronics, University of Calcutta, India

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.

Event 30:

Event: Lecture Meeting

Title: High Frequency Communication: Recent Advancements

Speaker: Dr. Somak Bhattacharya, Dept of Electronics Engg., IIT BHU

Date: 22nd June 2023

Time: 2:00 PM

Venue: ETCE Committee Room 4th Floor, Jadavpur University

IEEE MTTs Student Branch Chapter of JU organized a technical lecture in association with IEEE AP/MTTs Kolkata Chapter on June 22, 2023. Dr. Somak Bhattacharya, Dept of Electronics Engg., IIT BHU delivers a lecture on “High Frequency Communication: Recent Advancements”. The programme started at 2:00pm. The dignitaries present were Prof. Bhaskar Gupta, Jadavpur University (Faculty Advisor of IEEE MTTs SBC, JU), Prof. Iti Saha Misra, Jadavpur University (IEEE 2023 Kolkata Section Chair), Prof. Sudhabindu Ray, Jadavpur University, Dr. Chandrima Mondal, Jadavpur University. Dr. Somak Bhattacharya has highlighted that with the advent of the technology, there is an increase in demand of the channel bandwidth; leading to the requirement of high frequencies for communication. In his talk, some modern day aspects and trends of the high frequency communication were presented. Emphasis has been given to applications like radio astronomical techniques, terahertz communication etc. where electromagnetic spectrum plays

critical role. The applications from Indian scenario point of view were discussed in his talk. Interested students from different schools and colleges like Calcutta University, Indian Institute of Space Technology, Rajabazar Science College, Acharya Prafulla Chandra College, Budge Budge Institute of Technology, JLD, BHS attended the event. Finally, the speaker was felicitated by Prof. Iti Saha Misra after his lecture and the Q&A session. Participants: 36 (20+16)

Event 31:

Event: IEEE Technical Event

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

Speakers:

Prof. Dr. Nuno Borges Carvalho, Professor, Universidade de Aveiro, Portugal, IEEE MTT-S President

Dr. Debabani Choudhury, Principal Research Director, Intel Labs

Dr. Chinmoy Saha, IEEE MTT-S Region-10 Coordinator

Prof. Dr. Jawad Y. Siddiqui Visiting Researcher, Queen's University, Canada

Date: 15th Dec 2023

Time: 2:00 PM

Venue: Heritage Institute of Technology, Kolkata

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.

Event 32:

Event: APS DL

Title: Electromagnetic Diffraction Modeling and Simulation

Speaker: Prof. Dr. Levent Sevgi, Atlas University, Istanbul, Turkey, IEEE AP-S Fellow, APS DL

Date: 15th Dec 2023

Time: 3:00 PM

Venue: ETCE Seminar Hall, Jadavpur University

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)

Event 33:

Event: Inauguration of Smart Class Facility at Konnagar Hindu Girls' High School, Konnagar, West Bengal

Sponsored by: IEEE SIGHT of MTTs

Organized by: IEEE MTT Society

In association with: IEEE AP/MTTs Kolkata Chapter

Inaugurated by:

Prof. Nuno B. Carvalho (IEEE MTT President) and **Dr. Chinmoy Saha** (MTT R10 Coordinator)

Other Guests Present:

Prof. Levent Sevgi, Atlas University, Istanbul, Turkey, IEEE AP-S Fellow, APS DL

Dr. Jawad Y. Siddiqui, Visiting Professor, Queen's University, Canada

Dr Koushik Dutta, Chair, AP-MTTs Kolkata Chapter

Date: 16th Dec 2023

Time: 2:00 PM

Venue: Konnagar Hindu Girls' High School, Konnagar, West Bengal

Event 34:

Event: IEEE Talk

Title: Mobile Satellite Communications for Humanitarian Assistance

Mode: In person

Organized by: IEEE AP/MTTs Kolkata Chapter

In association with: IEEE AP and MTTs Student Branch Chapters of CU and NSEC

Date: 27th Dec 2023

Time: 3.30 PM

Venue: Seminar room, SAMEER Kolkata Centre, Block-GP, Salt Lake Electronics Complex, Sec-V, Kolkata

Speakers: Dr. Nemai Chandra Karmakar, Associate Professor, Department of Electrical and Computer Systems Engineering, Monash University, Australia

IEEE AP-MTTs Kolkata Chapter organized an IEEE Talk on "Mobile Satellite Communications for Humanitarian Assistance" in association with IEEE AP and MTTs Student Branch Chapters of Netaji Subhash Engineering College and Calcutta University on 27th Dec 2023 from 3.30 PM. The resource person for this event is Dr. Nemai Chandra Karmakar. Attendance 38 (32 IEEE+ 4 non-IEEE)

Event 35:

Event: Workshop: Design of antennas for communication system using High Frequency Structure Simulator

Date: 29th September, 2023

Venue: ICT 501, Heritage Institute of Technology

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.

Event 36:

Event: IEEE Lecture Meeting

Event: Technical lecture

Title: Recent Trends in RF Design

Speaker: **Dr. Arani Ali Khan**, Assistant Professor, Department of Electrical Engineering, IIT Jodhpur, India

Date: 20th July 2023 (Thursday)

Time: 3:30 PM - 5:00 PM (IST)

Venue: 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 about RF and microwave amplifier design. He elaborated on inter-disciplinary antenna designing, and active antennas. He showed how to design transmitter and receiver antennas backed by amplifiers. He also explained the physical reasoning behind 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.

Event 37:

Event: IEEE Lecture Meeting

Title: COSMOS: The Final Frontier

Speaker: **Dr. DebiprosadDuari**, Director, Research and Academics, M. P. Birla Institute of Fundamental Research, Kolkata

Date: 14th July 2023 (Friday)

Time: 3:00 PM - 5:00 PM (IST)

Venue: 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), 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. DebiprosadDuari 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 explosions result 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.

Non-Technical Events

Meeting 1 (ExCom meeting):

Date: 6th Jan 2023

Mode: Online

Agenda discussed: Events on 5th and 12th Jan 2023

Attendance: 9

Meeting 2 (AGM)

Date: on 14th Jan 2023

Mode: In person**IEEE AP-MTTs Kolkata Chapter (Annual General Meeting) AGM, 2023**

All members of the IEEE AP/MTT Kolkata Chapter are invited to attend the Annual General Meeting (AGM), 2023 on 14th January 2022 from 6:30 pm (IST). The meeting started with a welcome message from the chair Dr. Koushik Dutta. The key points discussed in the AGM are as follows.

1. Address by the Chapter Chair.
2. Adoption of the Annual Report for the year 2022 by the Chapter Secretary.
3. Adoption of Audited Accounts for the year 2022 by the Chapter Treasurer.
4. Confirmation of SLATE for the year 2023.
5. The meeting ends with a vote of thanks by the secretary.

Members Present: 28

Meeting 3 (ExCom meeting):

Mode: In person

Date: 12 Jan 2023

Time: 05:00 PM

Members Present: 10

Meeting 4 (ExCom meeting):

Meeting Mode: Online

Date: 28thFeb 2023

Time: 08:00 PM to 09:00 PM

Members Present: 7

Meeting 5 (ExCom meeting):

Meeting Mode: Online

Date: 18thMay 2023

Time: 08:00 PM to 09:00 PM

Members Present: 10

Meeting 6 (ExCom meeting):

Meeting Mode: Online

Date: 23rd June 2023

Time: 08:00 PM to 09:00 PM

Members Present: 9

Meeting 7 (ExCom meeting):

Meeting Mode: Online

Date: 10th Oct 2023

Time: 07:00 PM to 08:00 PM

Members Present: 9

Meeting 8 (ExCom meeting):

Meeting Mode: Online

Date: 7th Dec 2023

Time: 08:00 PM to 09:00 PM

Members Present: 10