



IEEE Joint Control Systems Society-Instrumentation & Measurement Society Kolkata Chapter



Annual Report 2024

IEEE Joint CSS-IMS Kolkata Chapter
Kolkata Section, CS23/IM09 (CH10673)

Event 1:

Event Name: 2024 IEEE 3rd International Conference on Control, Instrumentation, Energy & Communication

Event Type: International Conference

Date: January 25-27, 2024

Time: 9:30 am – 5:30 pm IST (3 day)

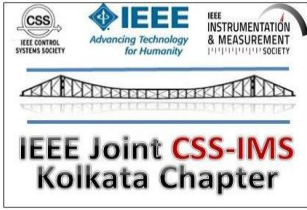
Venue: Dhono Dhanyo Auditorium, Alipore, Kolkata

Organized by: IEEE Joint CSS-IMS Kolkata Chapter and Department of Applied Physics, University of Calcutta

IEEE Joint CSS-IMS Kolkata Chapter, India has proudly organized the IEEE 3rd International Conference on Control, Instrumentation, Energy, and Communication (CIEC24) in collaboration with the Department of Applied Physics, University of Calcutta, India, which is celebrating its centenary year in 2024. The CIEC24 International Conference focuses on Control, Instrumentation, Energy, Communication, and Signal Processing in Electrical and Instrumentation Engineering. Moreover, it incorporates mechatronics and intelligent systems, automation and robotics, and control theory and applications, smart sensors, green energy systems, smart grids and microgrids, machine learning, and cybersecurity.

Professor Wuqiang Yang, FIEEE, The Manchester University, UK inaugurated the conference in an august gathering and then presented his Keynote speech on “Electrical capacitance tomography and industrial applications” on 25th January 2024. Professor Mihaela Albu, Politehnica University of Bucharest, Bucharest, Romania, delivered her plenary speech on “Measurements for Emerging Low-inertia Power Systems” on 26th January 2024. Professor Bobby George, Indian Institute of Technology, Chennai, India delivered his plenary speech on “Sensor Interfacing and Latest Trends” on 27th January 2024.

Along with the keynote and plenary addresses by the distinguished academicians, several prominent industry persons like Mr. Rabi Chowdhury, Managing Director, CESC Ltd., Mr. Chanchal Chakraborty, Managing Director and CEO of ATM Towers India, Mr. Sekhar Sanyal, Director, IET India Services Pvt. Ltd., Mr. P. S. Choubey, Sales Director, HAIP, Hollysys Automation, Mr. Ranjan Ghosh, Ex-Executive Director, GAIL India Ltd., Mr. Chiranjib Bhowmik, General Manager, Haldia Energy Limited, Dr. Anup Kumar Mandal, Managing Director, Digital



IEEE Joint Control Systems Society-Instrumentation & Measurement Society Kolkata Chapter



Communication & Control India Pvt. Ltd., shared their valuable insight into the current industrial scenario and also discussed the importance of industry-academia partnership for shaping future technologies.

Distinguished academicians like Professor Amitava Chatterjee, Jadavpur University, Professor Rajib Bandyopadhyay, Jadavpur University, Professor Debasis Chatterjee, Jadavpur University, Professor Samarjit Sengupta, University of Calcutta, Professor Madhubanti Maitra, Jadavpur University, Professor Rabindra Nath Bera, Sikkim Manipal University, Professor Sugata Munshi, Jadavpur University, Professor Swapan Kumar Goswami, Jadavpur University, Professor Subir Kumar Sarkar, Jadavpur University, Professor Joyanta Kumar Roy, System Advance Control, Kolkata, Professor Amlan Chakrabarti, AKCSIT, University of Calcutta, Professor Anindita Sengupta, IEST Shibpur, chaired different sessions and honored us with their presence.

In this conference, 242 papers were submitted for review, and after review, 79 papers were accepted. Among the accepted papers, authors of 75 papers were registered and presented their research to the august audience. There was zero 'No Show' in this conference.

Around 190 authors and guests attended the three-day conference, among them 56 are IEEE members and 11 are IMS members.

Attendance/ Audience breakup:

IEEE members	IEEE CSS/IMS members	Non-IEEE members
56	11	134



Fig 1: Few glimpses of CIC24: (a) Inauguration of CIEC24, (b) Book of Abstract and CD Proceeding Launch of CIEC24, (c) After the session with Session Chair, (d) Sponsors' Zone.

Event 2:

Event Name: IEEE IMS Distinguished Lecturer Program on “High Reporting Rate Measurements For Smart[er] Grids”

Event Type: IEEE IMS Distinguished Lecturer

Speaker: Prof. Mihaela Albu, Politehnica University of Bucharest, Romania

Date: January 25, 2024

Venue: Institute of Engineering & Management, D1 Management House, Salt Lake Electronics Complex, Kolkata- 700091

Organized by: IEEE Instrumentation & Measurement Society, IEEE Joint CSS-IMS Kolkata Chapter & Department of Electrical Engineering, Institute of Engineering & Management, Salt Lake in association with IET (UK) Kolkata Local Network.

The session was based on High reporting rate measurements, a critical facet in advancing the efficiency and intelligence of modern grid systems. The session started by Prof. Subhajit Kar, Head of the Department, Electrical Engineering felicitating Prof. Albu. Prof. Mihaela M. Albu is from Craiova, Romania. She graduated from Politehnica University of Bucharest (UPB) in 1987 and holds the Ph.D. degree (1998) from the same university. Since 2002 she is a Professor of Electrical Engineering at UPB. Her teaching activity presently counts: Advanced Topics in Instrumentation and Measurement (Master); Smart Distribution Grids (Master); Signal Processing (Bachelor) at the Dept. of El. Engineering of UPB; and "Elektrische Meßtechnik"; "Sensoren" at the German Department of UPB.

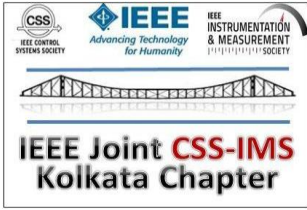
During her lecture, Prof. Albu went into the detailed concepts of Smart Grids and Power Engineering and their applications in today's world. Prof. Mihaela is renowned for her expertise and profound insights into Power Engineering, and shared comprehensive perspectives and cutting-edge methodologies to enhance the functionality of smart grids. She highlighted the prospects as well as the current deployment of Smart Grids in various fields in Romania and several other countries. The session was extremely helpful and informative for every student present there, especially for the students belonging to EE and EEE, who listened in rapt attention. The one-and-a-half-hour lecture was followed by an interesting questions-and-answers session where the speaker addressed the doubts of the participants and engaged them in a constructive discussion.

Attendance/ Audience breakup:

IEEE members	IEEE CSS/IMS members	Non-IEEE members
10	5	50



Fig 2 : Few glimpses of DL program.



IEEE Joint Control Systems Society-Instrumentation & Measurement Society Kolkata Chapter



Event 3

Event Name: Virtual Lecture on "Personalized Wearable Robotics: A Human-Centric Adaptation Framework for Assistance and Rehabilitation"

Event Type: Invited Lecture

Speaker: Prof. Samer Mohammed, LISSI Lab, University of Paris-Est Créteil, France

Date: April 27, 2024

Time: 7:00 pm (IST)

Venue: Google Meet Virtual Platform

Organized by: Department of Applied Physics, University of Calcutta & IEEE Joint CSS-IMS Kolkata Chapter in collaboration with Applied Physics Alumni Association

The Department of Applied Physics, University of Calcutta, in collaboration with the IEEE Joint CSS-IMS Kolkata Chapter and the Applied Physics Alumni Association, organized a virtual lecture on April 27, 2024, as part of the Applied Physics Centenary Celebration Virtual Lecture Series. The event featured Prof. Samer Mohammed from LISSI Lab, University of Paris-Est Créteil, France, who delivered a lecture titled "Personalized Wearable Robotics: A Human-Centric Adaptation Framework for Assistance and Rehabilitation."

Prof. Mohammed shared insights into his current research, focusing on modeling, identification, and control of robotic systems. His lecture explored the design and application of wearable robots, artificial intelligence, and decision-support technologies in assisting dependent individuals. He highlighted the practical applications of personalized wearable robotics in rehabilitation and assistance, emphasizing a human-centric approach.

The session saw active participation from academics, researchers, and students who gained valuable knowledge on emerging technologies in wearable robotics and their societal impact. The event was a significant contribution to the field of robotics and control systems, inspiring further research and innovation.

Attendance / Audience breakup:

IEEE members	IEEE CSS/IMS members	Non-IEEE members
12	6	58

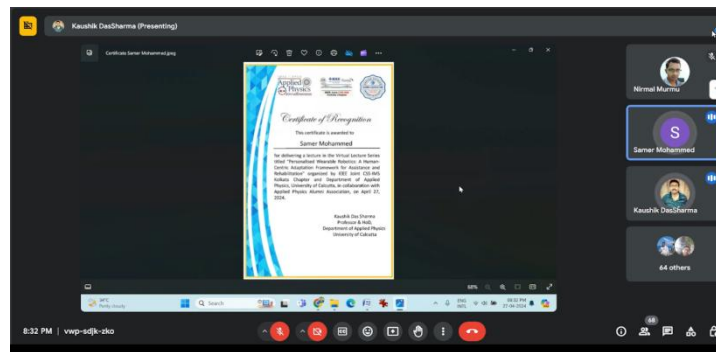
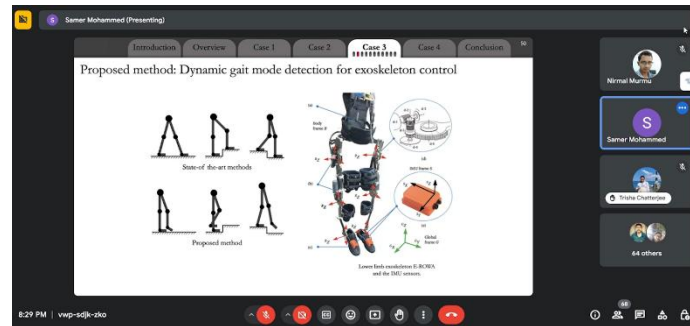


Fig 3 : Few snapshot of the event.

Event 4:

Event Name: IEEE IMS Awareness and Networking Session

Event Type: Networking and Awareness Program

Host: Prof. Rajarshi Gupta, Professor, Department of Applied Physics, Calcutta University (CU)

Date: December 13, 2024

Venue: Virtual, Google Meet Platform

Organized by: IEEE Joint CSS-IMS Kolkata Chapter and : IEEE Instrumentation and Measurement Society, University of Calcutta Student Chapter

Introduction

The IEEE IMS Awareness and Networking Session was convened to foster collaboration, share information, and explore opportunities for IEEE members and affiliates. The session aimed to create awareness about the benefits of IEEE and IMS memberships while addressing queries related to professional growth, student involvement, and resource accessibility. The host, Prof. Rajarshi Gupta, welcomed a diverse group of participants from various academic and professional institutions.



IEEE Joint Control Systems Society-Instrumentation & Measurement Society Kolkata Chapter



Proceedings

The event commenced with an introduction session, where participants presented their backgrounds, affiliations, and research interests. This interaction provided a platform for attendees to connect and identify shared areas of interest. Faculty members, research scholars, and students from Calcutta University (CU), Jadavpur University (JU), Aliah University, RK Mahato Government Engineering College, IEST Shibpur, Heritage Institute of Technology, Techno Main Salt Lake, and IIT Delhi were among the notable attendees.

Awareness Creation on IEEE Opportunities

The discussions revolved around the numerous benefits offered by IEEE and IMS memberships. Participants highlighted access to research journals, technical conferences, and opportunities to organize professional events such as seminars, workshops, and Distinguished Lecturer Programs. Prof. Gupta elaborated on the professional and career development resources available to members, emphasizing the advantages of networking within the IEEE community.

Presentation by Prof. Rajarshi Gupta

Prof. Gupta delivered a detailed presentation focusing on the structure and benefits of IEEE and IMS memberships. His presentation underscored the pathways for academic and professional growth provided by IEEE societies. The discussion also delved into the importance of forming Student Branches and Chapters to enhance student engagement and participation.

Interactive Q&A Session

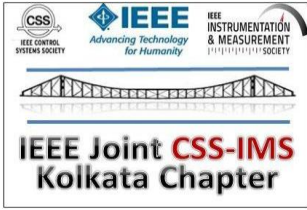
The interactive session addressed a variety of topics, including:

- The structure and functioning of Student Branches.
- Membership charges and resource accessibility.
- Proposals for hosting student-focused webinars to emphasize IEEE membership advantages.
- Suggestions for organizing student visits to laboratories for practical exposure.

Participants actively engaged in discussions, raising valuable questions and sharing constructive ideas for future initiatives.

Key Outcomes

The session concluded with consensus on two major initiatives:



IEEE Joint Control Systems Society-Instrumentation & Measurement Society Kolkata Chapter



1. **Webinars for Student Awareness:** Organizing targeted webinars to highlight the benefits of IEEE memberships and encourage student involvement.
2. **Student Laboratory Visits:** Exploring opportunities for student visits to research and industrial laboratories to enhance practical learning.

Conclusion

The event concluded with a vote of thanks by Prof. Rajarshi Gupta, who acknowledged the active participation and enthusiasm of all attendees. The session successfully laid the groundwork for future collaborations, increased awareness of IEEE benefits, and proposed initiatives aimed at enhancing student engagement and professional growth within the IEEE community.

Attendance / Audience breakup:

The event saw participation from 24 attendees, including:

- Faculty members from leading institutions and IEEE societies.
- Research scholars and M.Tech students from Calcutta University, Jadavpur University, and other institutions.

IEEE members	IEEE CSS/IMS members	Non-IEEE members
22	22	2

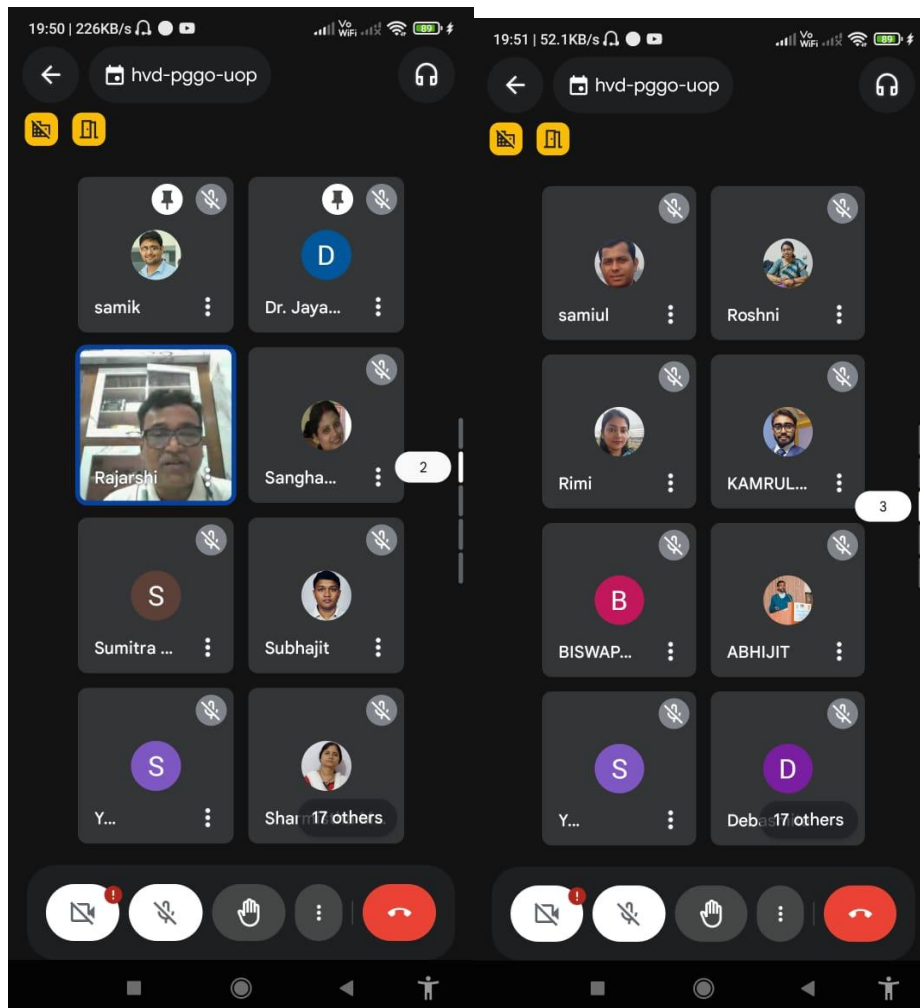


Fig 4: Few snapshots of the event.

Event 5

Event Name: Symposium on “Control and IoT for Cyber-Physical Systems: Challenges and Opportunities”

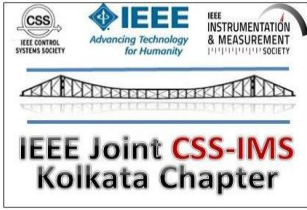
Event Type: Online Symposium

Speaker: Dr. Soumyajit Dey, Associate Professor, Department of Computer Science Engineering, Indian Institute of Technology, Kharagpur, India

Date: December 21, 2024

Venue: Online

Organized by: IEEE Joint CSS-IMS Kolkata Chapter



IEEE Joint Control Systems Society-Instrumentation & Measurement Society Kolkata Chapter



The IEEE Joint CSS-IMS Kolkata Chapter organized an online symposium on “Control and IoT for Cyber-Physical Systems: Challenges and Opportunities.” The session began with an **Inaugural Address** by Prof. Kaushik Das Sharma, Chairman of the IEEE Joint CSS-IMS Kolkata Chapter. Prof. Sharma highlighted the interdisciplinary challenges in cyber-physical systems (CPS) and the transformative potential of IoT in addressing these challenges.

The keynote lecture was delivered by **Dr. Soumyajit Dey**, a renowned academician from IIT Kharagpur, who presented on “**Securing Cyber-Physical Systems: Control Theoretic and Platform Scheduling Approaches.**” His lecture covered:

- The integration of computation, networking, and physical processes in CPS.
- The role of embedded processors and real-time networks in maintaining feedback loops for CPS.
- The identification of vulnerabilities in CPS and the use of control theoretic and platform scheduling methods for prevention.

Dr. Dey’s presentation was well-structured and engaging, offering practical insights and innovative solutions. The session concluded with an interactive Q&A segment, where attendees discussed CPS security, challenges in implementation, and future research directions.

The Symposium concluded when the coordinators, delivered the Vote of Thanks. Initially, there were 135 registered participants for this Symposium. Finally, 43 participants attended the Symposium, 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 the significance of collaborative efforts in addressing modern technological challenges.

Attendance / Audience breakup:

IEEE members	IEEE CSS/IMS members	Non-IEEE members
14	7	26

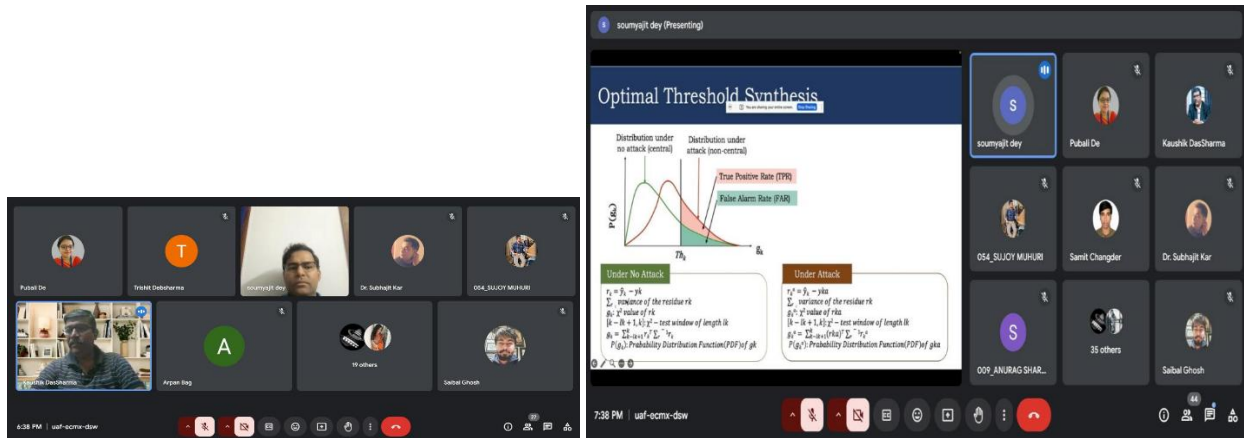


Fig 6.: Few snapshots of the event.



IEEE Joint Control Systems Society-Instrumentation & Measurement Society Kolkata Chapter



Administrative Meeting

- There are **3 executive committee meetings** (ExeCom), **1 emergency ExeCom** and **1 annual general meeting** (AGM) held from January 05, 2024, till November 30, 2024.
- **Executive Committee Meeting:**
 1. The 1st ExCom of 2024 was held on **April 05 (Friday), 2024**, with Prof. Kaushik Das Sharma in the chair, over Google Meet. The meeting was progressed with the following agenda,
 - i. Confirmation of last EXECOM minutes held on January 02, 2024.
 - ii. New event proposals for technical co-sponsorship, if any.
 - iii. Annual program planning of the chapter for the year 2024.
 - iv. Miscellaneous, if any.In this meeting total, **7 members** were present.
 2. The 2nd ExCom of 2024 was held on **September 12 (Thursday), 2024**, with Prof. Kaushik Das Sharma in the chair, over Google Meet. The meeting was progressed with the following agenda,
 - i. Confirmation of last EXECOM minutes held on April 05, 2024.
 - ii. New event proposals for technical co-sponsorship, if any.
 - iii. Miscellaneous, if any.In this meeting a total of **8 members** were present.
 3. The 3rd ExCom of 2024 was held on **November 11 (Monday), 2024**, with Prof. Kaushik Das Sharma in the chair, over Google Meet. The meeting was progressed with the following agenda,
 - i. Confirmation of last EXECOM minutes held on September 12, 2024.
 - ii. New event proposals for technical co-sponsorship, if any.
 - iii. SLATE for 2025.
 - iv. Miscellaneous, if any.In this meeting a total of **7 members** were present.
 4. An emergency meeting of the members of ExeCom 2024 of IEEE Joint CSS-IMS Kolkata Chapter was held on **June 11 (Tuesday), 2024**, with Prof. Kaushik Das Sharma in the chair, over Google Meet. The meeting progressed with the following agenda point,
 - i. Transfer a fund received from IEEE IMS for CIEC24.In this meeting a total of **8 members** were present.



IEEE Joint Control Systems Society-Instrumentation & Measurement Society Kolkata Chapter



- **Annual General Meeting:**

1. The 10th AGM of the IEEE Joint CSS-IMS Kolkata Chapter, Kolkata Section, was held on Wednesday, **January 18, 2024** at 6:00 P.M. at Eastern Metropolitan Club, A-73, Purba Diganta, Santoshpur, Kolkata, West Bengal 700075. The agenda of the meeting was,
 - i. Confirmation of minutes of last AGM (2023)
 - ii. SLATE of Chapter 2024
 - iii. Welcome address by New Chair
 - iv. Activities report of the chapter 2023 and plan for 2024
 - v. Misc if any.

A total of **12 members** were present at this meeting.