Event 1:

One-Day Lecture Meeting on "Smart Grid, AMI and Smart Metering"

Date: 03 Feb 2020

Time: 05:30 PM to 07:00 PM

Venue: Seminar Hall, Department of Applied Physics, University of Calcutta, Kolkata, West Bengal

Lecture tittle: "Smart Grid, AMI and Smart Metering"

Speaker: Mr. Subhadip Pal, Head of Application Engineering Team of Landis + Gyr India

The program started with the welcome address by Prof. Rajarshi Gupta, Chair of the chapter. He also delivered a brief introduction about the objectives of the chapter and introduced the speaker, Mr. Subhadip Pal.
The lecture was mainly covering the following topics,
- Concept of Smart Grid
- Why it is important?
- A small overview
- AMI – basic block
- Smart Metering – an overview
- Initiative in India

The lecture was followed by adequate interaction between the speaker and audience.

Fig 1: Mr. Pal delivering lectures during one-day lecture meeting

Attendance / Audience breakup:

IEEE members	Non-IEEE members
14	46

Event 2:

National Seminar on "Weather Dependent Prediction of Renewable Energy Generation for Grid Management"

Date: 02 Mar 2019

Date: 12 March 2020

Time: 09:30 AM to 06:00 PM

Venue: Meghnad Saha Auditorium, University of Calcutta, Rajabazar Campus.

Department of Applied Physics, CU, had, jointly with IEEE CSS-IMS Kolkata chapter, IEEE PES Kolkata chapter and IET Kolkata Network, organized a one-day international seminar on 'Weather Dependent Prediction of Renewable Energy Generation for Grid Management' on 12 March 2020. That was a day-long technical talk programme about the prediction of weather and generation of electric energy from weather dependent resource for load management. In this regard, the program was arranged with five lectures from different domains of electric power sectors.

The first half of the programme was started at 10 a.m., with welcoming the guests on the dais, among them were Prof. S. P. Gon Chaudhuri, Prof. Hiranmay Saha, Sri Sankar Mukhopadhyay, Prof. Sumana Choudhuri, Head of the Department and Dr. Binoy Kr. Karmakar, Assistant Professor, Department of Applied Physics.

After felicitation the guest on dais, welcome address was given Prof. Sumana Choudhuri, Head of the Department. During his talk, he also gave an overview of the heritage, activities of the Department. Then, Sri Sankar Mukhopadhyay, Chairman, IET Kolkata Network gave the inaugural speech. Prof. S. P. Gon Chaudhuri and Prof. Hiranmay Saha are also gave a small speech on the current aspect and future of the power sector. The inaugural session ends with the delivery of vote of thanks by Dr. Binoy Kr. Karmakar.

The technical talks were divided into two sessions. In the first technical session, start at 11.00 AM, three talks were delivered and continue till 2.00 PM. The other two talks were delivered in the second technical session, after the lunch break, from 3.00 PM. At the end, a panel discussion was taken place with Sri Sankar Mukhopadhyay as session chair and other speakers.

The speakers and topic of their talks are listed below.

Lecture tittle: " Recent Initiative of Solar and Wind forecasting using high resolution NWP model".

Speaker: Parthasarathi Mukhopadhyay, Scientist-E, Indian Institute of Tropical Meteorology (IITM), Pune

Lecture tittle: " Geographical Smoothing of Wind Energy for Better Grid Management".

Speaker: Ms. Anasuya Gangopadhyay, Research Scholar, Centre for climate change, IISc, Bangalore

Lecture tittle: " NCMRWF Weather Data Products for Renewable Energy Applications".

Speaker: Sri Sushant Kumar, Project Scientist – C, National Centre for Medium Range

Weather Forecasting (NCMRWF), Noida.

Lecture tittle: "Issues and Challenges for Integration of Distributed Energy Resources with Electricity Distribution Grid".

Speaker: Rajib Das, Dy GM, Planning, CESC Limited, India.

Lecture tittle: "Large Scale Grid Integration of Renewable Sources: Practical Challenge of Managing Variability and Uncertainty".

Speaker: Sri Surajit Banarjee, DGM. HOD (SO/C&M/SS/ Safety), Eastern Regional Load Despatch Centre, Tollygaunge, Kolkata.

Attendance / Audience breakup:

IEEE members	Non-IEEE members
30	120

| (a) | (b) |

Figure 2: Glimpses of the national seminar (a) Inaugural session, (b)audience during the event.

Event 3:
Webinar on "How to Manage Paper Reviews Effectively?"

Date: 30 Jul 2020

Time: 06:00 PM to 07:30 PM

Venue: Google Meet, Virtual Platform

Lecture tittle: "How to Manage Paper Reviews Effectively?"

Speaker: Prof. Narasimhan Sundararajan, Professor (Retd.), Nanyang Technological University, Singapore.

IEEE Joint CSS-IMS Chapter, Kolkata Section organized a webinar on "How to Manage Paper Reviews Effectively?" The program started with the welcome address by Prof. Rajarshi Gupta, Chair of the chapter and gave small introduction about the speaker.

This talk mainly focused on the writing of research papers, understand the review process, and answer the reviewer's questions properly.

Based on the speaker's experience in both academia and R&D over 50 years, the speaker discussed to present important ways of handling and writing replies to the reviewer's comments properly in a step by step approach. The lecture was highly interactive and the participants interacted and shared their experiences in writing replies to the reviewers and became enlightened of the right ways of handling the reviewer's comments.

Attendance / Audience breakup:

IEEE members	Non-IEEE members
20	40

Event 4:

Webinar on "Algorithms and Architectures for Remote Health Monitoring using Wearable Sensors"

Date: 22 Aug 2020

Time: 07:00 PM to 08:30 PM

Venue: Google Meet, Virtual Platform

Lecture tittle: "Algorithms and Architectures for Remote Health Monitoring using Wearable Sensors"

Speaker: Dr. Dwaipayan Biswas, Digital IC Design for Biomedical Applications, IMEC, Belgium

In the beginning, Prof. Rajarshi Gupta gave a welcome address, He also introduced the speaker and gave a small overview of the lecture. The lecture covered the following topics,

- CVD monitoring (using ECG, PPG) and lifestyle/activity monitoring (IMU sensors)

- Algorithms: Time-domain/Time-frequency domain signal processing, Machine learning, Reinforcement learning

- Hardware: Algorithm-to-architecture mapping, FPGA, ASIC implementation

The lecture was ended with small interaction between the speaker and audience.

Attendance / Audience breakup:

IEEE members	Non-IEEE members
8	17

Event 5:

Webinar on "Assistive Humanitarian Devices: Measurement, Instrumentation and Control Perspective"

Date: 19 Sep 2020

Time: 05:30 PM to 08:30 PM

Venue: Google Meet, Virtual Platform

Lecture tittle: "Assistive Humanitarian Devices: Measurement, Instrumentation and Control Perspective"

Speaker: Professor Celia Shahnaz, Department of EEE, BUET, Bangladesh, and Chair, IEEE Bangladesh Section

IEEE CSS-IMS Kolkata chapter organized a technical lecture meeting on "Assistive Humanitarian Devices: Measurement, Instrumentation and Control Perspective". A brief introduction delivered by the chapter chair, Prof. Rajarshi Gupta, explaining the purpose of organizing such a lecture session and extended a very cordial welcome to the Speaker, Prof. Celia Shahnaz, and participants from a different institution, organizers on behalf of CSS-IMS Chapters.

The technical session was formally started, after a small introduction of the speaker by Prof R. Gupta. The talk mainly focused on assistive humanitarian devices where measurement, instrumentation, and control mechanisms are used to perform intelligent tasks, even applicable and usable by disabled communities. The event ended with interactive sessions.

Attendance / Audience breakup:

IEEE members	Non-IEEE members
10	16

Event 6:

Faculty Development Program on Energy Storage for Sustainable Development

Start time: 26 Sep 2020 09:30 AM

End time: 30 Sep 2020 05:20 PM

Venue: Virtual Platform

Organizer: National Institute of Technology, Silchar, Assam, India

NIT Silchar organized a five-day-long faculty development program on 'Energy Storage for Sustainable Development'. This program was technically co-sponsored by IEEE joint CSS-IMS Kolkata chapter.

The objective of this faculty development program was to promote basic and advanced research related to energy storage in application to sustainable developments. Renewable energy sources are an integral part of sustainable development but are limited mostly in intermittency availability. Electrochemical energy storages like batteries, supercapacitors, fuel cells have been a leading

solution for electrified/green transportation, renewable power grid, consumer electronics, etc., by taking care of the intermittency problem of renewable power sources. Efficient modeling, estimation, diagnosis, energy management, optimal control, and cybersecurity are the primary research concerns for efficient utilization of energy storage devices. In this line, the focus of the FDP was to bring more awareness and instill research interest in the related areas into the minds of experienced as well as budding researchers.

The selection of the speakers and the topics of discussion was made to encompass the whole theme of energy storage for sustainable development.

The program was started with an inauguration session at 9.00 am on September 26, 2020. After that, the technical session began, which was divided into fourteen sessions. The list of topics and speakers is given below.

Speaker 1.:   Dr. Binoy Krishna Roy

Topic: "Introduction to energy storage for sustainable development + Stress management and COVID-19"

Speaker 2.:   Dr. Prabir Kumar Dash

Topic: "Overview of Solar Photovoltaic Power Generation and Energy Storage"

Speaker 3.:   Dr. Arunava Naha

Topic: "Different attacks on the physical layer of the CPS and the state-of-the-art techniques to detect them"

Speaker 4.:   Dr. Arijit Guha

Topic: "Battery modeling, estimation, diagnosis"

Speaker 5.:   Dr. Altaf Q. H. Badar

Topic: "Smart Home Energy Management System"

Speaker 6.:   Dr. Somnath Sengupta

Topic: "Some aspects of predictive energy management in HEVs"

Speaker 7.:   Dr. Hari Om Bansal

Topic: "Battery Modelling and Energy Management Strategies in Hybrid Electric Vehicles"

Speaker 8.:   Dr. Jahangir Hossain

Topic: "The Role of Electric Vehicle in Smart Grids with Renewable Generators; Robust Control for the efficient and reliable operation of microgrids"

Speaker 9.:   Dr. Ashish Khandelwal

Topic: "Battery fault and diagnosis, machine learning application"

Speaker 10.:   Dr. Munmun Khanra

Topic: "Solar Assisted Battery-Supercapacitor based Electric Vehicle: Modelling, Sizing, Energy Management and Techno-economic Performance- Part-1 & 2"

Speaker 11.:   Dr. Kaushik Das

Topic: "Utility-Scale Hybrid Wind Power Plant"

Speaker 12.:   Dr. Monalisa Pattnaik

Topic: "An Overview of Power Electronic Converters for Hybrid Renewable Energy Systems"

A total of 245 participants, including 172 faculty members for the FDP, were confirmed for participation in the event. Approximately 210 participants attended one or more sessions/days, and more than 150 participants had attended 80% or more.

The program ended with valedictory sessions, scheduled between 4.30 pm – 5.10 am on September 30 2020. The dignitaries who attended the program were the Director, Dean (Research & Consultancy), Head of the Departments (EIE, EE) of NIT Silchar, and Prof. Jahangir Hossain (speaker) of the University of Technology Sydney.