

## ANNUAL REPORT FOR 2015

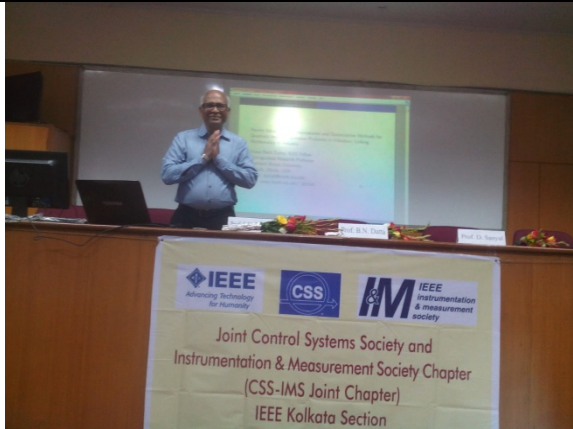
### Introduction:

The joint IEEE Control Systems Society and Instrumentation & Measurement Society Chapter, IEEE Kolkata Section, which was formed in 2014, celebrated its first complete year of activities in 2015. The chapter activities in 2015 included organizing seminars and workshops, participating in student activities, providing technical co-sponsorships to other technical institutes in organizing seminars and workshops, arranging technical lecture meetings, executive committee meetings and announcing the first edition of a biennial International Conference to be organized by the chapter, named CMI 2016. The chapter continues and will continue in future too to provide a platform for regular, close knit interactions among academicians, researchers, and practicing engineers.

### **A. Technical Lecture Meeting - I:**

A Technical Lecture Meeting was organized By IEEE Joint CSS-IMS Kolkata Chapter in collaboration with Electrical Engineering Department, Jadavpur University, at Seminar Room of Electrical Engineering Department, Jadavpur University, on November 09, 2015. On this occasion, Prof. Biswa Nath Datta, IEEE Fellow, Distinguished Research Professor, Northern Illinois University, USA, delivered an invited talk on “Recent Advances on Computational and Optimization Methods for Quadratic Inverse Eigenvalue Problems in Vibration: Linking Mathematics to Industry”. There were 69 participants in this lecture out of which 11 were IEEE members. The audience comprised a large population of enthusiastic students.

<b>Title of the Talk</b>	<b>Speaker</b>	<b>Date</b>	<b>Venue</b>
Recent Advances on Computational and Optimization Methods for Quadratic Inverse Eigenvalue Problems in Vibration: Linking Mathematics to Industry	Prof. Biswa Nath Datta, IEEE Fellow, Distinguished Research Professor, Northern Illinois University, USA	09 November, 2015	Electrical Engineering Department, Jadavpur University



Prof. Biswa Nath Datta delivering his Invited Talk

There were 69 participants in this lecture out of which 11 were IEEE members. The audience comprised a large population of enthusiastic students.

### **A. Technical Lecture Meeting – II and III:**

Two technical lecture meetings were organized at MCKV Institute of Engineering, Liluah, Howrah, West Bengal, India, under the Programme Title of “Invited Talk Programme on Recent Technologies in Electronics”. These two technical lecture meetings were Technically Co-Sponsored by joint IEEE CSS-IMS chapter, Kolkata Section. The first of these two lecture meetings was held on 28 February, 2015 and on this occasion, Dr. Amitava Chatterjee, Electrical Engineering Department, Jadavpur University, delivered an invited talk on “Vision based Autonomous Path

Following and Door Detecting Robots”. There were 68 participants in this lecture out of which 8 were IEEE members. The second of these two lecture meetings was held on 12 March, 2015 and on this occasion, Prof. Subir Kumar Sarkar, Electronics and Telecommunication Engineering Department, Jadavpur University, delivered an invited talk on “Design Issues in Low Power VLSI”. There were 64 participants in this lecture out of which 6 were IEEE members. On both occasions, the audience comprised a large population of enthusiastic students and interested faculties.



Dr. A. Chatterjee delivering his invited talk



Prof. J. K. Roy, Dean, MCKV Institute of Engineering, presenting a memento to Dr. Chatterjee



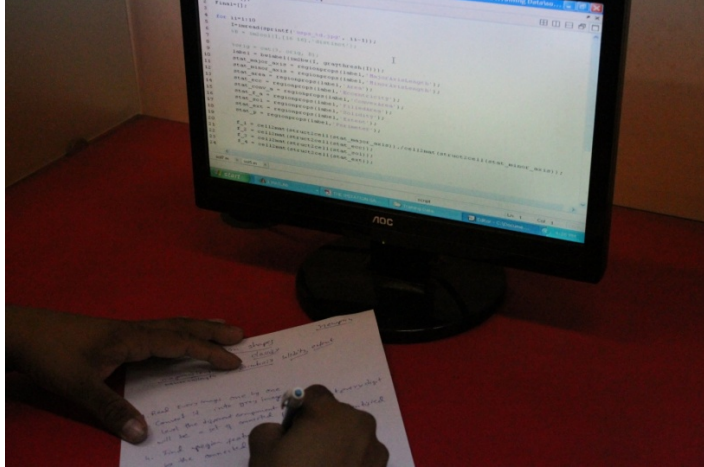
Prof. S. K. Sarkar delivering his invited talk



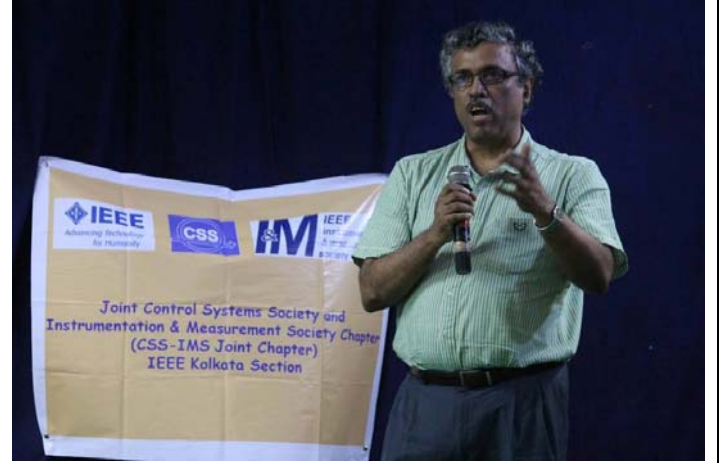
A section of the audience listening to Prof. Sarkar

## B. Student Activity:

“Convolution” is the annual technical meet organized by the students of the Department of Electrical Engineering, Jadavpur University. It is aimed at providing a platform for engineering students to learn and apply their acquired skills. The 3-day event serves to promote extensive interaction among creative solution designers and prominent personalities from academics and industries. In “Convolution 2015”, the event called “THE IMITATION GAME” was organized by the Students of the Department of Electrical Engineering, Jadavpur University, Kolkata, India, in collaboration with IEEE Joint CSS-IMS Kolkata Chapter. This event encompassed problems from a large variety of domains like Digital Image Processing, Computer Vision, Machine Learning, Pattern Recognition, Optimization problems, Artificial Intelligence, Heuristic Search Techniques and so on. Seven teams participated in this event.



Participants deeply involved in coding the problem at hand



Prof. D. Sanyal, Chairman, IEEE Joint CSS-IMS Kolkata Chapter, addressing the audience during the prize distribution ceremony

### C. Conference/Seminar/Workshop Activity - I:

The Joint Control Systems Society and Instrumentation & Measurement Society chapter, IEEE Kolkata section and Jadavpur University, under Teqip-II Programme, jointly organized a One Day Workshop on “INSTRUMENTS & MEASUREMENT – THE ROAD AHEAD” 21<sup>st</sup> April 2015 at Jadavpur University, Kolkata. The Workshop was inaugurated by Prof. Sivaji Bandyopadhyay, Dean (FET), Jadavpur University who welcomed everyone in the workshop and the inaugural session concluded with Prof. Dipankar Sanyal, Chairman of IEEE Joint CSS-IMS Kolkata Chapter, highlighting the importance of conducting such workshops on a regular basis in an educational institute of prominence.

The Inaugural Session was followed by two Technical Sessions on both sides of lunch, delivered by two eminent speakers from Fluke Technologies Pvt. Ltd. Ms. Shaila S. Nadgir delivered a lecture on “Electrical Measurements And Calibration Concepts” before lunch, while Mr. Anirban Saha delivered a lecture on “Thermography Applications In Science And Engineering” after lunch. Both lectures were very informative and immensely enjoyed by the audience. The theoretical lectures were followed by a Practical Demonstration session by the representatives of Fluke Technologies Pvt. Ltd. The workshop concluded with a Vote of Thanks from Dr. Amitava Chatterjee, Secretary of IEEE Joint CSS-IMS Kolkata Chapter. At the end of the workshop the participants also received Participation Certificates. The workshop was attended by 117 participants out of which there were 10 IEEE members.



Ms. S. S. Nadgir delivering her talk during the Technical Session



Prof. D. Sanyal presenting a memento to Ms. Nadgir



Mr. A. Saha delivering his talk during the Technical Session



A group photo comprising the participants and the organizers of the workshop

### C. Conference/Seminar/Workshop Activity - II:

Department of Electrical Engineering, B.P. Poddar Institute of Management & Technology and Joint Control Systems Society and Instrumentation & Measurement Society chapter, IEEE Kolkata section jointly organized a Workshop on “RECENT ADVANCEMENT IN CONTROL & INSTRUMENTATION” in the seminar room of B.P. Poddar Institute of Management & Technology on 21<sup>st</sup> August 2015. The Workshop was inaugurated by the Principal Dr. Sutapa Mukherjee of this institute. The inaugural speech was followed by the speeches of Head of Electrical Engineering, B.P. Poddar Institute of Management & Technology, Prof. Pramathes Das and Dr.

Dipankar Sanyal, Chairman of IEEE Joint CSS-IMS Kolkata Chapter. Dr. Dipankar Sanyal enlightened the audience about different activities of the society since inception.

Inaugural Session was followed by the Technical Session comprising speeches by three speakers, namely, Dr. Rajarshi Gupta of Department of Applied Physics, Calcutta University, Dr. Dipankar Sanyal, Department of Mechanical Engineering, Jadavpur University and Ms. Nandita Sanyal of Department of Electrical Engineering, B.P. Poddar Institute of Management & Technology. Dr. Rajarshi Gupta gave an informative talk on “Telecardiology: an emerging area of remote healthcare technology”. He shared his vivid research experiences in this field and spoke about the future research scopes in this promising area. Dr. Dipankar Sanyal lucidly described “Sliding mode control theory and Laboratory Scale experiments with Electro hydraulic Systems” with student friendly illustrations. He started from the first principle of sliding mode control and gradually discussed the complexities of the topic. The Technical Session ended with an interesting lecture from Ms. Nandita Sanyal on the topic of “Fuzzy VQ based image compression by Bacterial foraging Optimization Algorithms”.

The Technical session was concluded with the Vote of thanks offered by Ms. Sudipta Chakraborty of Department of Electrical Engineering of BPPIMT. The students and faculty members of the Institute were present in the audience who enjoyed the program a lot. The session ended with a High Tea.



Prof. D. Sanyal delivering his talk during the Technical Session



Dr. R. Gupta delivering his talk during the Technical Session



Ms. N. Sanyal delivering her talk during the Technical Session



The speakers with the faculty members of BPPIMT and other organizers and volunteers of the workshop

### C. Conference/ Seminar/Workshop Activity - III:

Department of Applied Physics, University of Calcutta, Kolkata, organized a National Seminar on “Integrated Power Transmission Systems” on 7 February, 2015 at University of Calcutta, Kolkata. This event was Technically Co-Sponsored by Joint Control Systems Society and Instrumentation & Measurement Society chapter, IEEE Kolkata section. In the Inaugural Session, Prof. J. N. Bera delivered the Welcome Address, Dr. K. Das Sharma spoke about the seminar, Prof. D. Chattopadhyay, Pro-Vice Chancellor of University of Calcutta delivered the Inaugural Address and Dr. Rajarshi Gupta proposed Vote of Thanks. Prof. Dipankar Sanyal, Chairman of IEEE Joint CSS-IMS Kolkata Chapter, then spoke at length about the different activities of the chapter.

The Inaugural Session was followed by two Technical Sessions comprising invited speeches by Dr. J. Sridevi, CPRI, Bangalore, Mr. Surajit Banerjee, ERLDC, PGCIL, Kolkata, Mr. Somnath Bhattacharya, WBSETCL and Dr. Siddhartha Duttagupta, IIT, Bombay. Dr. Sridevi delivered a talk on “Power Transmission Systems in India”, Mr. Banerjee talked about “Development of Integrated Power System in India: Challenges”, Mr. Bhattacharya delivered a lecture on “An Overview of Integrated Transmission System of West Bengal With Information of Upcoming Projects of WBSETCL” and Dr. Duttagupta’s topic was “Offshore grid and renewable power”. The audience mainly comprised students and faculty members who showed keen interest in both technical sessions.

### C. Conference/ Seminar/Workshop Activity - IV:

Department of Electrical Engineering and Department of Electronics & Communication Engineering, Bengal Institute of Technology and Management, Santiniketan, organized an One Day Seminar on “Recent Trends of Biomedical Instrumentation, Signal and Image Processing” on 3 November, 2015 at Bengal Institute of Technology and Management, Santiniketan. This event was Technically Co-Sponsored by Joint Control Systems Society and Instrumentation & Measurement Society chapter, IEEE Kolkata section. The Seminar was inaugurated

by The Director, Bengal Institute of Technology and Management, Santiniketan. In the Inaugural Session, the two speakers on that occasion, Dr. Amitava Chatterjee, Electrical Engineering Department, Jadavpur University and Dr. Rajarshi Gupta, Department of Applied Physics, University of Calcutta, and a special guest, Mr. Gautam Sarkar, Electrical Engineering Department, Jadavpur University were also present on the dias.

The Inaugural Session was followed by two Invited Talks on both sides of lunch. In the pre-lunch session, Dr. Amitava Chatterjee delivered a lecture on “Medical Image Segmentation: Multilevel Thresholding Based Approaches “ and in the post-lunch session Dr. Rajarshi Gupta delivered a lecture on “Cardiovascular Signal Compression: An information Theoretic Introduction “.The audience mainly comprised students and faculty members who showed keen interest in both technical lectures. There were a total of 181 participants out of which 4 were IEEE members.



The Director, BITM, addressing the audience during the Inaugural Session



Dr. A . Chatterjee delivering his talk during the Technical Session



Dr. R. Gupta delivering his talk during the Technical Session



Dr. Chatterjee, Dr. Gupta, and Mr. Sarkar with the organizers and the faculty members of BITM



#### **D. Executive Committee Meetings:**

Four Executive Committee meetings of the joint IEEE CSS-IMS chapter, Kolkata Section were held in 2015, all in the Seminar Hall of Mechanical Engineering Department, Jadavpur University, Kolkata, India, with Prof. Dipankar Sanyal in the Chair. The first Executive Committee meeting was held on January 27, 2015 at 05-30 P.M. Six members attended this meeting. The Second Executive Committee meeting was held on June 17, 2015 at 04-30 P.M. Nine members attended this meeting. The third Executive Committee meeting was held on October 08, 2015 at 05-30 P.M. Twelve members attended this meeting. The fourth Executive Committee meeting was held on December 14, 2015 at 05-30 P.M. Seven members attended this meeting.

#### **E. Annual General Meeting:**

The 1<sup>st</sup> Annual General Meeting of Joint Control Systems Society and Instrumentation & Measurement Society Chapter (CSS-IMS Joint Chapter), IEEE Kolkata Section, was held on 15 January, 2015, at 07:00 P.M., at the bar extension upstairs of the Calcutta Club, 241, A.J.C. Bose Road, Kolkata – 700020. Nine members attended the meeting.

#### **F. Other Activities during 2015:**

In 2015, IEEE Joint CSS-IMS Kolkata chapter decided that they will organize a biennial International Conference as the flagship event of the chapter. The first edition has been named as 2016 IEEE First International Conference on Control, Measurement and Instrumentation (CMI) which will be organized on January 8-10, 2016, in Jadavpur University, Kolkata. CMI 2016 is organized in collaboration with Jadavpur University, Kolkata and is Technically Co-Sponsored by IEEE Instrumentation & Measurement Society, USA. At present, CMI 2016 preparations are going on in full swing. The conference received 207 submissions out of which 102 papers are finally going to be presented during the conference.

In 2015, the chapter also decided to apply for the Distinguished Lecture program under IEEE Instrumentation & Measurement Society and the application was successful. Consequently Prof. Wuqiang Yang, University of Manchester, UK, IEEE Fellow, will deliver an IEEE IMS DL on January 11, 2016, at Jadavpur University, Kolkata.

In 2015, the chapter also granted Technical Co-Sponsorships to four events which are going to be held in 2016. The details of these programmes are given below

1. Programme: One Day Distinguished Lecture on "State of Art Computational Methods and Software for Computer Aided Control System Analysis and Design" (Speaker: Dr. Biswa Nath Datta)  
Organizers: Department of Electrical Engineering, National Institute of Technology,  
Silchar  
Venue: Department of Electrical Engineering, National Institute of Technology, Silchar

Date: January 05, 2016

2. Programme: International Conference on Control, Instrumentation, Energy and Communication 2016 (CIEC 2016)

Organizers: Department of Applied Physics, University of Calcutta

Venue: Department of Applied Physics, University of Calcutta

Date: January 28-30, 2016

3. Programme: National Conference on Recent Advances in Science, Engineering & Management [RASEM-2016]

Organizers: Bengal Institute of Technology & Management, Santiniketan

Venue: Bengal Institute of Technology & Management, Santiniketan

Date: February 20-21, 2016

4. Programme: 4th International Conference on Advanced Computing, Networking, and Informatics (ICACNI 2016)

Organizers: National Institute of Technology, Rourkela

Venue: National Institute of Technology, Rourkela

Date: September 22-24, 2016

### **Membership Strength:**

The current membership strength of the joint IEEE CSS-IMS chapter, Kolkata Section is 18 at the end of 2015.