

## ED Calcutta Chapter activity report for February-March 2015

IEEE Electron Devices Society Kolkata Chapter in association with IEST Shibpur organized a technical talk on “Nanoscale Quantum Transport-Beyond Charge based Nanoelectronics”, on February 12, 2015 by Prof. Bhaskaran Muralidharan, Department of Electrical Engineering, Indian Institute of Technology Bombay. The talk was attended by faculty members from IEST Shibpur and 40 post graduate students and research scholars from IEST, University of Calcutta and Jadavpur University. All the students and faculty members benefited immensely from the talk.

IEEE EDS Kolkata Chapter in association with IEST Shibpur organized a One-day workshop on “The Art of Compact Modeling”, on February 19, 2015 by Prof. Santanu Mahapatra, Department of Electronic Systems Engineering, Indian Institute of Science, Bangalore. The event was visited by Prof. Hafizur Rahaman, Director, School of VLSI Technology; IEST Shibpur. The workshop was extremely successful in bringing together students from diverse domains of Electronics Engineering and VLSI Technology and provided them an opportunity for hands-on experience on Semiconductor device modeling. The workshop was attended by faculty members from IEST Shibpur. It was also attended by 45 post graduate students and research scholars from IEST, University of Calcutta and Jadavpur University. All the students and faculty members benefited immensely from the workshop.

The Department of Electronics & Communication Engineering, HITK and IEEE EDS Kolkata Chapter jointly organized a technical talk by Dr. Shubhajit Roy Chowdhury, Assistant Professor, Centre for VLSI and Embedded Systems Technology, IIIT Hyderabad, India at Heritage Institute of Technology on February 6th, 2015. The talk was attended by Senior faculty members from Heritage Institute of Technology. The talk was also attended by 52 under graduate and final year post graduate students of Heritage Institute of Technology. All the students and faculty members benefited immensely from the talk.



Prof. Bhaskaran Muralidharan delivering technical talk at IEST Shibpur



Prof. Shantanu Mahapatra delivering technical talk at IEST Shibpur



Dr. Shubhajit Roy Chowdhury delivering his talk at Heritage Institute of Technology

## **Report on EDS-ETC Programme ED Calcutta Chapter**

ED Calcutta Chapter with active support from the student members of ED University of Calcutta Student Branch Chapter organized an EDC-ETC Program on 31<sup>st</sup> March 2015. The school named 'Brahmo Balika Shikshaloy' was selected for this program. A total number of 16 projects have been carefully selected and are demonstrated to the students with the help of the snap circuits. There were 30 participants and two teachers who attended the workshop. The experiments demonstrated the basic concept of conservation of energy principle and transformation of one energy source to another. The basic ideas of transistor, solar cell, digital logic gates have been explained to the students by the student volunteers.

The students were divided into two groups. The first group, after a brief theoretical introduction to the subject area, were demonstrated 'Electronic snap circuits' which were set up by volunteers of EDS University of Calcutta Student Branch Chapter with great care and expertise. The second group were given hands on training on 'Digital Electronics'. In the second half of the program the two groups were swapped and the teaching learning process was repeated. The students were so engrossed in the hands on experiments that they had to be reminded about the closing session.

During the valedictory session, the students were asked to give their views about the program. The feedback received from the students were really encouraging. It was felt that the students were greatly motivated towards taking up science and technology as their career.



Participants at the workshop on  
March 31, 2015



Participants watching the demonstration of  
the workshop

## ED Calcutta Chapter activity report for April-June 2015

The IEEE EDS Kolkata Chapter, in association with the Department of Electronics and Communication Engineering, Meghnad Saha Institute of Technology organized two DL talks by Prof. Vijay Kumar Arora on "Overview: Trends of Nanotechnology journey" and "Equilibrium carrier statistics" on 6th April 2015, at Meghnad Saha Institute of Technology, Kolkata. The Chief Guest of the inaugural ceremony was Prof. Ajay Kumar Ray, Director IEST Shibpur. Other dignitaries present were Prof. C.K.Sarkar, Chairman IEEE Kolkata Section and Dr. Soumya Pandit, Chairman EDS Kolkata Chapter. The talks were attended by 90 participants, of which 35 were IEEE members. All the participants benefitted immensely from the talks.

Two more DL Talks on "Non equilibrium carrier statistics" and "Carbon-The soul of future Nano electronics" by Prof. Vijay Kumar Arora were organized by IEEE EDS Kolkata Chapter, in association with the Department of ECE, Meghnad Saha Institute of Technology on 7th April 2015 at Meghnad Saha Institute of Technology, Kolkata. The talks were attended by 75 participants, of which 10 were IEEE members. All the participants benefitted immensely from the talks.

The IEEE Kolkata Section, IEEE Electron Devices Society Kolkata Chapter, IEEE EDS HITK Student Branch Chapter, IEEE EDS KGEC Student Branch Chapter and IEEE EDS CU Student Branch Chapter in association with the Department of ECE, Heritage Institute of Technology organized a Distinguished Lecture programme at AV Hall of Heritage Institute of Technology on April 17, 2015 at 3 pm on "Importance of Calibration in Quality Assurance" by Prof. Sivaji Chakravorti, Distinguished Lecturer, IEEE Power & Energy Society and Professor of the Department of Electrical Engineering, Jadavpur University and at 4 pm on "Design Challenges for Low Power VLSI Circuits" by Prof. Subir Kumar Sarkar, Distinguished Lecturer, IEEE EDS and Professor, Department of ETCE, Jadavpur University. The DL talks were attended by more than 105 students and 15 faculty members. The student members as well as the faculties were largely benefited by the talks.



Prof. Vijay Kr. Arora at the Inaugural ceremony of the IEEE EDS DL Talk programme at MSIT on April 6-7, 2015



Participants with some of the organizers of the DL Talks at MSIT.



Prof. Sivaji Chakravorti delivering his DL talk at Heritage Institute of Technology.



Prof. Subir Kumar Sarkar at Heritage Institute of Technology.

## **ED Calcutta Chapter activity report for July-September 2015**

A Technical Talk by Prof. Santanu Mahapatra, Associate Professor of Nano Scale Device Research Laboratory, Department of Electronic Systems Engineering (formerly CEDT), Indian Institute of Science Bangalore, was organized by IEEE EDS Calcutta Chapter in association with IEEE Calcutta University EDS Student Branch Chapter, IEEE HITK EDS Student Branch Chapter, IEEE KGEC EDS Student Branch Chapter, IEEE MSIT EDS Student Branch Chapter and the Department of ECE, MSIT on August 7, 2015 at the Seminar Hall of MSIT. The technical talk was on "Tunnel FET" and it was attended by 66 participants, of whom 1 was IEEE Senior Member and 11 IEEE members. All the participants were immensely benefited by the talk.

An IEEE EDS DL Talk by Prof. C K Sarkar, Professor of ETCE Department of Jadavpur University and IEEE EDS Distinguished Lecturer was organized by IEEE EDS Calcutta Chapter in association with IEEE MSIT Student Branch, IEEE MSIT EDS Student Branch Chapter and the Department of ECE, MSIT on September 16, 2015 at the Language Lab-II Hall of MSIT. The talk was on "IC Fabrication" and it was attended by 67 participants, of whom 1 was an IEEE Senior Member and 7 IEEE members. All the students and faculty members present in the program were immensely benefited by the DL Talk.

Another IEEE EDS DL Talk program by Prof. C K Sarkar, Professor of ETCE Department of Jadavpur University, Chairman of IEEE Kolkata Section and Vice Chairman of IEEE EDS SRC Region 10 was Meghnad Saha Institute of Technology Student Branch, IEEE Meghnad Saha Institute of Technology organized by the Department of ECE, Meghnad Saha Institute of Technology, IEEE EDS Kolkata Chapter, IEEE EDS Student Branch Chapter and IEEE HITK EDS Student Branch Chapter on September 30, 2015 at the Seminar Hall of Meghnad Saha Institute of Technology. Prof. Tirthankar Datta, Principal of Meghnad Saha Institute of Technology and Mrs. Joysree Das Roy, Registrar of Meghnad Saha Institute of Technology were the Patrons of the EDS DL Program. The talk was on "Nanotechnology" and it was attended by 47 participants, of whom 1 was IEEE Senior Member and 7 IEEE members. Some senior members of the Department of ECE, Meghnad Saha Institute of Technology, namely, Dr. Chandi Pani, Dr. Dalia Nandi, Mr. Swarnil Roy, Mr. Manoj Modak and Mrs. Tanushree Ganguli were present in the



program. The talk was part of a Career Development Program for ECE 3<sup>rd</sup> year students of Meghnad Saha Institute of Technology. The welcome address was delivered by Ms. Gunja Chakraborty, Chair of IEEE Meghnad Saha Institute of Technology EDS SBC. The vote of thanks was delivered by Mr. Manash Chanda, the Branch Counselor of IEEE Meghnad Saha Institute of Technology Student Branch. The Secretary of IEEE EDS Kolkata Chapter and the Chapter Advisor of IEEE Meghnad Saha Institute of Technology EDS SBC, Dr. Swapnadip De felicitated Prof. Sarkar on behalf of EDS Kolkata Chapter and the other EDS SBCs. The HOD of the Department of ECE, Meghnad Saha Institute of Technology, Dr. Sudip Dogra felicitated the speaker on behalf of the Department of ECE.



Prof. Mahapatra delivering the Technical Talk at MSIT

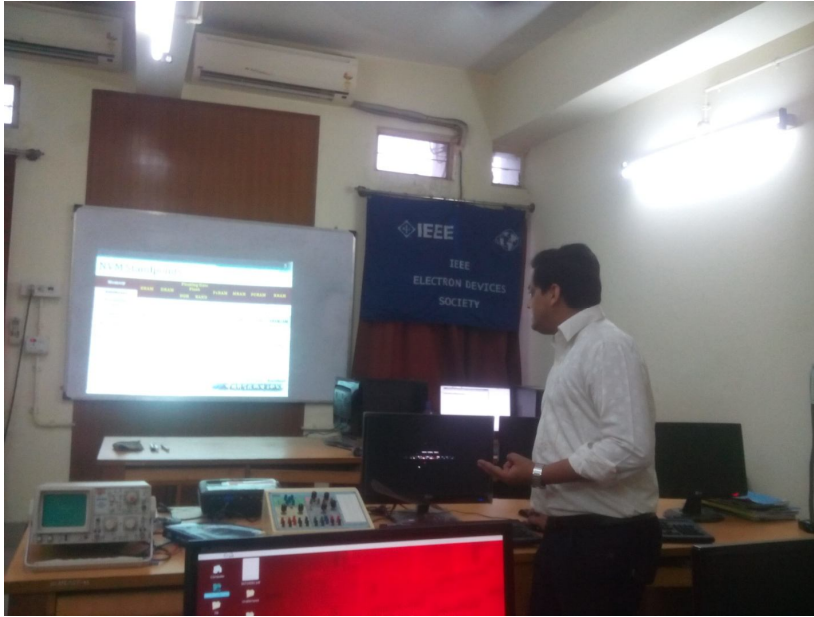


Participants at the IEEE EDS DL Talk Program



Prof. C K Sarkar, IEEE EDS Distinguished Lecturer delivering his DL Talk at MSIT

## **ED Calcutta Chapter activity report for October-November 2015**



A seminar lecture meeting was organized by the IEEE EDS University of Calcutta Student Branch Chapter (SBC28561A) on “Non-Volatile Memory”. The programme was jointly organized by IEEE Kolkata Section, ED HIT-K, ED KGEC and ED-MSIT. The lecture was held on 28<sup>th</sup> October, 2015 at IC Design Laboratory, Institute of Radio Physics and Electronics, University of Calcutta. The speaker was Dr. Writam Banerjee, Institute of Microelectronics of Chinese Academy of science. The seminar presented a comprehensive picture of the state of the art VLSI devices and its applications in memory technology. It started with an introduction of flash memory technology and its market capture, which is followed by the importance of RRAM in memory technology and concluded with an analogy between the RRAM technology and human brain. Dr. Soumya Pandit, chairperson of IEEE Electron Devices Society (EDS) was present at the seminar addressing the audience introducing Dr. Writam Banerjee to the participants. The lecture was attended by nearly 30 students and research scholars. The students were benefited from the question and answer session held after the lecture.

The Department of Electronics & Communication Engineering, Heritage Institute of Technology in collaboration with IEEE Kolkata Section, IEEE HITK EDS Student Branch Chapter, IEEE EDS Kolkata Chapter, IEEE Meghnad Saha Institute of Technology EDS Student Branch Chapter, IEEE CU EDS Student Branch Chapter and IEEE KGEC EDS Student Branch Chapter organized a Lecture Session by Dr. Writam Banerjee, from Institute of Microelectronics of Chinese Academy of Science, Beijing, China. The Lecture Session based on on “ Non-volatile Memory” took place on 29<sup>th</sup> October, 2015 at Heritage Institute of Technology.



*Lecture is being delivered by Dr. Writam Banerjee*



*Attendees of the Lecture Session*



*Speaker felicitation by Prof. Chandan K. Sarkar, Chairman, IEEE Kolkata Section.*

A total of 77 UG, PG students and faculty members attended the Session from the Department of Electronics & Communication Engineering, Heritage Institute of Technology and Jadavpur University. The Lecture was extremely successful in educating and motivating the students of Electronics and Communication Engineering Department regarding ongoing research in current technology advancements and provided them an opportunity to interact with the experts in the relevant domain.