

TECHNICAL ACTIVITY CARRIED OUT BY CENTRES / OVERSEAS CHAPTERS

Name of Centre / Overseas Chapter:		Durgapur Local Centre	
Title of Activity:		One Day Seminar on 'Digitally Mixed and Biomedical Signal Processing'	
Activity under Divisional Board (delete which are not applicable):		ETDB	
Date:	09/04/2019	Venue:	Seminar Hall, Admin Block, NSHM Knowledge Campus, Durgapur



Lighting of Lamp by the dignitaries



Prof K C Ghanta delivering his welcome address



Dr A Chandra delivering his presentation



Prof A Mal delivering his presentation

The seminar was inaugurated in the presence of Prof Dr Sudipto Sarkar, Dean, NSHM Knowledge Campus, Durgapur, Prof. A Mal, NIT, Durgapur, Dr. Aniruddha Chandra, NIT, Durgapur, Prof. (Dr.) A. D. Barman, Professor, Dept. of Radio Physics and Electronics, Calcutta University, Prof. (Dr.) P. K. Ghosh, Professor, Dept. of ECE, Techno International New Town, Kolkata and Prof K.C Ghanta, Chairman, IEI Durgapur Local Centre and Mr. M.K. Biswal, MIE, Hony. Secretary, IEI, Durgapur Local Centre.

The program was started with welcome address by the Chairman, IEI Durgapur Local Centre Prof K.C Ghanta and Dr. Sudipto Sarkar, Dean NSET and flower bouquets were given to all dignitaries and speakers. In his address he highlighted on the "Digitally mixed and Biomedical signal processing. Signal processing is a subfield of mathematics, information and electrical engineering that concerns the analysis, synthesis, and modification of signals, which are broadly defined as functions conveying information about the behavior or attributes of some phenomenon, such as sound, images, and biological measurements.

Dr Sudipto Sarkar spoke and deliberated by saying that in the area of Digitally mixed and Biomedical signal processing is the modern topic of discussion. It is a main basic course with abstract contents, a lot of concepts, and complex mathematical formulas, which is a great difficult course. Also he motivated the students to be focused on this modern topic like signal processing application in medical science to detect the disorder of the in the patients using advanced type signal processing using neural network or convoluntal neural network or deep learning. He also gives the overview of the application of the Digital signal and image processing .saying the audience to concentrate on this topics he ended his speech .

Dr. Aniruddha Chandra, ECE department, NIT Durgapur deliberated beautifully on Some case studies of signal processing .He explained different signal and their processing .How a signal or images is converted into new signal or new images using some software like Alexnet. Also he spoke on the proper training of neural network .Also he has discussed on the deep learning, Convolutional neural network for signal processing. He discussed adequate background of the signal processing. He also explained on image denoising and instrument identification using convolutional neural network. Audience was motivated and impressed by his presentation to this topic

Prof (Dr.) A.K Mal, HOD of the dept. of ECE, NIT Durgapur deliberated a presentation on IC design in CMOS. He explained trends integrated circuits technology and Cell phone cost analysis. Also He explained the IC market in Artificial intelligence, Internet of thing (IoT), Autonomous vehicle and also 5G AR/VR in current world. Also he had Emphasized on digital and CMOS .He briefly explained the PMOS ,NMOS,PMOS Logic Implementation, CMOS logic implementation. He also explained CMOS inverter and their layout details. He explained Shannon's expansion (SE) and implementation of SE.

Prof. (Dr.) A. D. Barman, Professor, Dept. of Radio Physics and Electronics, Calcutta University deliberated a lecture on DFT -a Useful Tool in Digital Signal Processing. Presentation outline is

Linear Convolution via Frequency Domain (to find output of any system)  
Generation of Complex Frequency Signal (OFDM signal)

Spectral Analysis of Signal (JPEG compression)

He explained the discrete time Fourier transform. Why DFT is used .When and where DFT used also disadvantage of DFT. He also explained Fast Fourier transform and their application. He also explained liner shift and circular shift. He explained Linear convolution via frequency domain

Prof. (Dr.) P. K. Ghosh, Professor, Dept. of ECE, Techno International New Town, Kolkata elaborately explained Bio-medical Instrumentation, Bio signal Processing & Device Innovation. He emphasis on the following topic in front of the audience

- 1.Outline of Biomedical Instrumentation
- 2.Role of electronics in biomedical monitoring
- 3.Mini projects in Biomedical Engineering
- 4.Biomedical Signal Analysis – role of DSP

He spoke about Objectives of Biomedical instrumentation, Signal Processing typically entails-recording, converting, and digitizing or data acquisition. He also discussed precaution and Biomedical Instrumentation and difficulties of bio –signal measurement. He also explained Computer Aided Diagnosis and Therapy (CAD & T) and functionalities of Bio signals.

He deliberated with programs as learning points which are immensely benefited for the audience.

Hony. Secretary, IEI Durgapur Local Centre thanked the NSHM Management, Participants, the Speakers and all those are directly and indirectly associated with conducting the Seminar.

At the end of the seminar all Invited Speakers were given a token of appreciation by Dr. Sudipta Sarkar, Dean, NSHM & Mr. Heranmoy Maity, HoD of the ECE, followed by vote of thanks by Mr. Madhu Sudan Das, Asst. Professor, Dept. of ECE, NSHM Knowledge Campus Durgapur.