One-Week Training Program on

"Hands on Training on Microwave & Photonics Related Sophisticated Equipment and Components"

06th- 12th June 2022

Organized By

Department of Electronics and Communication Engineering
Motilal Nehru National Institute of Technology Allahabad, India- 211004
Under
DST-STUTI PROGRAMME OF INDIAN INSTITUTE OF TECHNOLOGY (ISM)-826004

Funded by: Department of Science & Technology (DST), Govt. of India

About The Program

The Department of Science and Technology (DST) intended to build human resources and knowledge capacity by arranging training programs through open access science and technology infrastructure across the country under the banner of 'Synergistic Training program Utilizing the Scientific & Technological Infrastructure (STUTI)'. Each training session will be for seven (7) days and thirty (30) participants can be accommodated. All the training expenditures (travel by train, food and accommodation, training materials) will be borne by the DST. The present proposed program will be organized by the Department of Electronics and Communication Engineering, Motilal Nehru National Institute of Technology Allahabad, to impart knowledge on some sophisticated instruments used in Microwave and Photonics. Participants have to go through the classroom teaching which will be followed by the laboratory demonstration on each considered instrument. Hands on Training on different simulators are also included in the program. The training program will be arranged from 06th June 2022 to 12th June 2022.

Eligibility Criteria for Participants of the Training Program

Person of Indian origin; Minimum qualification should be Post Graduate; Professors/Scientists/ Post-Doc Fellows/ Ph.D. Fellows/ Industry persons who are actively involved in research and development (R&D);
Not more than 3 participants from one institute per training should be allowed from outside the host institute.

About The Department

The Department of Electronics and Communication Engineering offers courses leading to a Bachelor of Technology in ECE. It also offers Master of Technology courses in communication System, Microelectronics and VLSI Design, and Signal Processing. Further, the department also enrolls candidates for Ph.D.

About The Institute

Motilal Nehru National Institute of Technology (MNNIT) Allahabad, Prayagraj is one of the premier National Institute of Technology (NIT) in India. It is committed to achieve quality and excellence in academic pursuits. Established in 1961, as a Regional Engineering College, a joint enterprise of Government of India (GOI) and Government of Uttar Pradesh, the institute was transformed into NIT on June 26, 2002. With the enactment of NIT Act-2007 (29 to 2007), the Institute has been granted the status of institution of national importance w.e.f. August 15, 2007.

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The one-week training program on "Hands on Training on Microwave & Photonics Related Sophisticated Equipment and Components" will be organized by the Department of Electronics and Communication Engineering, Motilal Nehru National Institute of Technology Allahabad under the banner of 'Synergistic Training program utilizing the Scientific & Technological Infrastructure (STUTI)' project of Department of Science and Technology (DST), Government of India. The content of training contains to impart knowledge on some sophisticated instrument/components widely used by microwave and photonics engineers and also some other instruments/simulators in this field. The complete training program contains two sections i.e. theory session and practical session for a better understanding of the principle as well as the operation of the instruments. Tentative schedules and topics to be covered within this module are as follows:

ACTIVITY	DELIVERABLES
Tunable Laser Source (DST-FIST Supported Instrument)	This instrument is widely used for wavelength division multiplexers (WDMs) and related components. It works within C and L band of optical communication. In this program, we will demonstrate its working principle and handling of this instrument.
Arbitary Waveform Generator (DST-FIST Supported Instrument)	This instrument can generate any type of waveform with modulation technique, such as QPSK, QAM. Its frequency range is up to 25 GHz. Here, we will see how to handle/operate such a sophisticated instrument and where one can use it.
DSP Processor (DST-FIST Supported Instrument)	DSP processor is used to improve the optical signal performance by correcting the distortion of the signal. Here, we will discuss its operating principle and handling/operating of sophisticated instrument
Optical Spectrum Analyser	This instrument is used to display and measure the power of spectrum of known and unknown signal in optical domain. Here, we will see how to use this instrument.
Antenna PCB Prototype Machine	Antenna prototype machine is able to fabricate the electronics PCB. This instrument is most significant for all electronics Engineers. We will see how to make Garber files as well as how to operate such machines.
OTDR	It is a fiber optic instrument used to characterize, troubleshoot and maintain optical telecommunication networks. In this workshop, we will see the operating principle, handling of this instrument and how to detect the fault in the fiber.
Antenna Far-field Measurement (in free space)	This instrument is used to measure the Far-field pattern of printed antennas in Free Space. The frequency range of this system is up to 6.0 GHz. In this training program, we will learn how to plot E-and H-plane patterns and gain of antenna.

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