OPTICAL COMMUNICATION LAB

The revolution in optical communication technology in the recent past has resulted in its numerous applications like fiber optic communication, free space communication, internet communication, etc. It has led to the widespread usage of optical communication and optical fibers in multiple sectors including telecommunication, medical, defence, government and industrial sectors. The Optical Communication lab in the department of Electronics and Communication Engineering at DTU is primarily focussed at imparting hands-on training to the students about concepts related optical communication such as the various types of fibers, light sources, detectors, amplifiers, modulators, etc employed in optical communication systems. This lab is utilized by many courses of UG and PG programs of the university and for research work by our PhD scholars. The lab is equipped with hardware and software facilities needed for the elaboration of principles of optical communication to our students. The lab currently has many user licenses of software facilities such as Optisystem, OptiFDTD, OptiSPICE and Matlab which are used by our students to model and simulate the various designs for optical fibers, sensors, modulators, etc; and to evaluate the system performance of a fiber optic network. Additional software tools for the analysis of optical components are also in the purchase pipeline. The students also carry out experiments on optical communication kits to demonstrate and study the transfer of data; along with the study of the modulation and demodulation of data using light as the carrier. The lab is also in the process of procuring specialized kits with sophisticated LASER sources to enable the study of modes in various types of fibers for our UG and PG students. Through these hardware kits, the students are expected to learn and study the setting up of fiber optic analog and digital links, measure the macro bending losses in optical fibers, and measure the BER of the fiber optic communication system.

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OPTICAL COMMUNICATION LABORATORY

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