Introduction

- Optical communications is a field of study where various techniques related to Optical Communications are studied which are used high bandwidth communication applications.
- The important objective is to design an optical link with proper power and rise time budgeting and connect optical components to verify the design.

Scope of the Lab

- This Lab deals with various materials and components which are used as building blocks of an Optical Communication system. Experiments and Projects using Light Runner and Rsoft, OptiSim will be carried out in the Laboratory.
- The Experiment topics range from study of characteristics of Optical Fiber sources, amplifiers, multiplexer, routing devices and detectors. The topics also consists of design, implementation, testing and analysis of an Optical communication link.

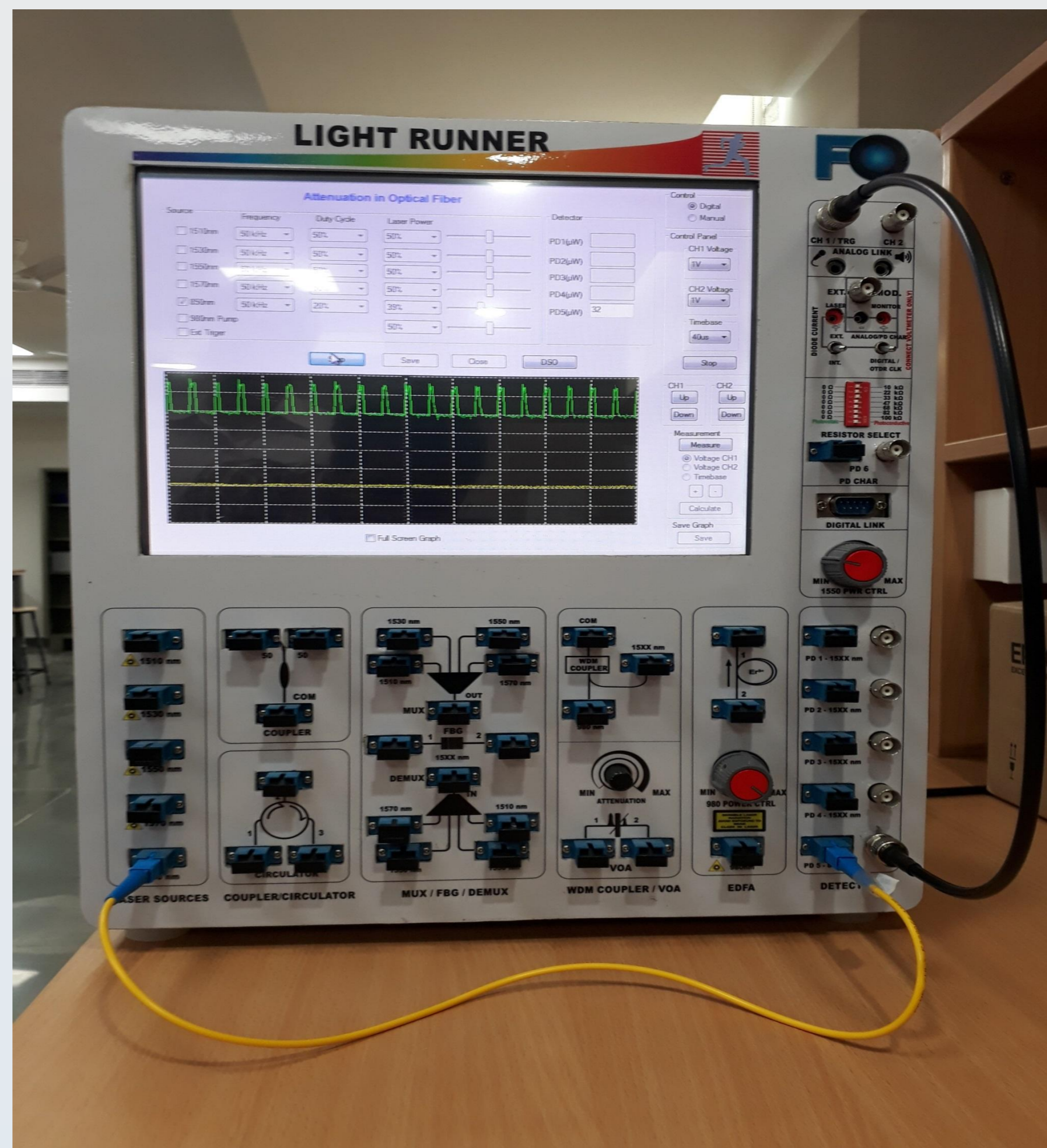## Simulation Software

- OptiSystem17.0
- RSoft CAD GUI v 2021.03
- VPI Transmission Maker

Application Areas

- Telecommunications
- Broadband Internet
- Broadcast TV
- Submarine communications

Lab Equipment

LIGHT RUNNER

Power Meter   Digital Multimeter

Faculty Coordinator

- Prof. Prasant Kumar Pattnaik

Other Faculty Users

- Dr. Subhradeep Pal
- Mr. Balasubramanian.M

Research Scholars

- Mr Chaluvadi V Naga Bhaskar

List of experiments

- Calculation of Numerical Aperture
- Modes in Optical Fiber
- Attenuation in Optical Fiber
- Bending Loss in Optical Fiber
- Dispersion in Optical Fiber
- Characterization of LASER diode
- Characterization of Photodetector
- Characterization of WDM Mux & Demux
- Characterization of FBG and Circulator
- Characterization of Erbium Doped Fiber Amplifier (EDFA)
- Analog and Digital Fiber Optic Links
- Time Division Multiplexing of Digital Signals
- WDM Fiber Optic Link
- Optical Amplification in a WDM Link
- Adding and Dropping of Optical Channels in a WDM Link
- Optical Time Domain Reflectometer
- Bit Error Rate & Eye Pattern Analysis
- Power Budgeting
- Rise Time Budgeting

Technician

Mr Samuel P

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