

Virtual Experiment with Fiber Optic Sensors



Overview

This lab offers an immersive, web-based simulator that enables you to explore and experiment with key concepts in optical communication, such as signal transmission, fiber optics, modulation, and detection techniques. Welcome to the Optical Communication Lab, a vital part of the B. 2) Select run button from tool bar to start real time experiment. 3) Click the select switch for desired waveform that should be displayed on the. Using Simulation-based Hybrid and Multilevel Virtual Labs for Fiber Optics, Photonics, and Telecom Education Yakov Cherner*, Amin Karim**, Ahmed Khan**, Victor Rubanchik***, Gary Mullett**** *ATeL, LLC, **DeVry University, ***Rostov State University (Russia), ****Springfield Technical Community. In order to derive maximum learning experience, the users are advised to first read the instructions for conducting the labs. There are 'step-by-step' instructions available in each lab to assist the users. Eventually, there will be a common login. The transmission speed of optical waveguides is superior to microwave waveguides because optical devices have a much higher operating frequency than microwaves, enabling a far higher bandwidth.



Article Content

Oct 26, 2025

LLNL turns Bay Area fiber into 8,000 virtual seismometers

Using an "interrogator" device to activate 50 miles of dormant fiber-optic cable, Lawrence Livermore National Laboratory seismologists created a network of 8,000 virtual sensors.

Jan 07, 2026

Optical Fiber & Optical Fiber Communication Experiments for Science ...

Optical Fiber & Optical Fiber Communication: K-12 circuits, projects, experiments and background information for science labs, lesson plans, class activities & science fair projects for middle and high ...

Sep 08, 2025

Simulations for Fiber Optics with VirtualLab Fusion

Did you catch our recent webinar on the exciting outlook for fiber technologies in VirtualLab Fusion? Lots of new features will be coming soon – a new fiber-mode calculator, fiber component, and new fiber ...

Aug 02, 2025

Using Simulation Based Hybrid And Multilevel Virtual Labs For Fiber ...

This paper presents a set of interactive simulations and virtual experiments and discusses their applications for Fiber Optics, Photonics, and Telecom education courses, for onsite, ...

Feb 01, 2026

Optical Fiber & Optical Fiber Communication ...

Optical Fiber & Optical Fiber Communication: K-12 circuits, projects, experiments and background information for science labs, lesson plans, class activities & ...

Dec 18, 2025

Welcome to Virtual Labs

This lab offers an immersive, web-based simulator that enables you to explore and experiment with key concepts in optical communication, such as signal transmission, fiber optics, modulation, and ...

Dec 04, 2025

Optical Fiber Simulator App

Analyze step-index and graded-index fibers with an app to perform mode analyses on the dielectric layer structures. Get the Optical Fiber Simulator now.

Jul 18, 2026

Virtual-reality-based educational laboratories in fiber optic engineering

The developed module features a virtual laboratory populated with realistic models of optical devices in which students can set up and perform an optical experiment dealing with laser ...

May 29, 2026

Fiber Optic Analog and Digital Link

After installing the runtime engine start performing the experiment. 2) Select run button from tool bar to start real time experiment. 3) Click the select switch for desired waveform that should be displayed ...

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://ntmmgroup.co.za>

Email: sales@ntmmgroup.co.za

Phone: +27 82 471 2596

Address: Unit 7, Optic Park, 24 High-Tech Lane, Century City, Cape Town, 7441, South Africa

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