

Optical and Micro-optical devices

Principles of E/M optics, propagation in dielectric media, Fresnel equations, planar waveguide, cutoff frequency, dispersion, cylindrical waveguide, Laser diodes (Distributed Feedback, Distributed Bragg Reflector, Vertical Cavity Surface Emitting Light), Erbium Doped Fiber Amplifier, Light Emitting Diodes). Growth methods of integrated optics and MOEMS. Switches and light modulators. Fabry-Perot and Mach-Zender interferometers. Pockel and Kerr effects. Principles of operations of micro-electro-mechanical systems (elements of transmission, reflection, diffraction and interference of light. Applications (examples of telecommunication systems, WDM, multiplexing, pressure sensors, etc.)