



Electro-Optic Modulator based on a Metal-Ferroelectric Nanocomposite

Researcher

Prof. Shlomi Arnon
Department of Electrical and
Computer Engineering

Research

The requirement for fast and high information rate communications necessitates new revolutionary devices to replace conventional technologies. Prof. Arnon's technology for modulating light in both visible and infra-red is based on incorporating metal nanoparticles (NP) within a ferroelectric (FE) thin-film. By merging the electro-optical properties of FE thin-films with the local surface plasmon phenomena of metal NPs, Arnon is able to achieve control over the optical properties of the metal-dielectric system under an external electric field.

Product

Electro-optic modulator.

Advantages

The modulator has many advantages, including: high data rate, low power consumption, low drive voltage, low cost, and integrate-ability with other active semiconductor devices. To date, the laboratory has carried out extensive theoretical work and published its findings in leading journals in the field of optics.