

Lecture Outline

- **Nonlinear Optics**

Basic Linear Optics

Maxwell's Equation

Maxwell's Wave Equation

Plane wave and solution of the wave equation

Monochromatic and Non-monochromatic waves

Electric displacement, electric polarization, and refractive index

Direction of E , D , and k in an isotropic medium

Poynting vector and energy flow

Intensity of an EM wave

Anisotropic media

Susceptibility Tensor

EM Wave Propagation in Anisotropic media

