



Keith Nelson received his Ph.D. in Physical Chemistry from Stanford University in 1981, and after a postdoctoral stint at UCLA he joined the faculty at MIT in 1982. He has worked on discovery of new light-matter interactions and their exploitation for spectroscopy and control of coherent acoustic waves, lattice and molecular vibrations, excitons, spins, and their admixtures with light. He has developed novel methods for study of solid-state chemical reactions, crystals near phase transitions, glass-forming liquids, electronic excited-state dynamics, thermal transport, and matter far from equilibrium. He has pioneered tabletop generation of strong terahertz-frequency fields and nonlinear terahertz spectroscopy.

Title: Nonlinear terahertz spectroscopy: Driving electrons, ions, dipoles, and spins

Abstract: THz strong-field interactions with in solids, liquids, and gases will be reviewed. Recent results in two-dimensional THz spectroscopy and extreme nonlinear responses will be discussed.