Coherent and Ultrafast Optical Phenomena in Condensed Matter

Optical and magneto-optical spectroscopy are extremely powerful tools and have provided crucial information on matter, its properties, structure, and dynamics. The confinement of electrons in nanostructured materials or in a strong magnetic field can result in fascinating phenomena for quantum optics and condensed matter physics, in which electronic states can be designed and controlled.

My group, using state-of-the-art spectroscopic techniques, studies coherent and ultrafast optical phenomena in these artificial materials, and several examples of our activities, in the area of narrow gap and ferromagnetic semiconductors, will be presented in this talk.