

**venerdì 9 novembre in aula Careri**

**ore 14.00: Seminario del vincitore della procedura valutativa a PA SSD FIS/03 Dr. Michele Ortolani**

Titolo: Infrared Spectroscopy at the Nanoscale

Abstract:

Nanotechnologies have opened an entirely new route for the control of light at deeply sub-wavelength scales through the collective electromagnetic excitation of electrons in metals and in doped semiconductors (plasmons). In this seminar, my recent and future research on plasmonics in the infrared and terahertz ranges of the electromagnetic spectrum is discussed. Three major advances in physics, related to infrared plasmonics, are introduced: Quantum Cascade Lasers, Near-Field Infrared Microscopes, and Infrared Nanoantennas. Contributions given by us to these fields with studies performed in the laboratories of this Department are highlighted: infrared spectroscopy of proteins in single cell membrane layers, semiconductor nanowires, silicon-germanium quantum wells, and heavily-doped germanium nanoantennas.