

Symposium Terahertz physics: toward probing and controlling of materials on the nanoscale (SYTH)

jointly organized by
the Semiconductor Physics Division (HL),
the Chemical and Polymer Physics Division (CPP),
the Magnetism Division (MA), and
the Surface Science Division (O)

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Electromagnetic radiation at terahertz (THz) frequencies is of central relevance for basic research and applications. Owing to its low photon energy (4.1 meV at 1 THz), ultrashort THz pulses are an excellent probe of the dynamics of many elementary excitations of solids, for instance phonons, conduction electrons, excitons and magnons. Highly intense THz pulses open up the fascinating possibility to not only probe solids but to even control these modes down to the nanoscale. The talks of this symposium will provide an overview over latest developments in the generation and detection of ultrashort THz pulses and their application in the probing and controlling of ultrafast motions of electrons, ions and spins in solids and at surfaces, with a spatial resolution down to the atomic scale.

Overview of Invited Talks and Sessions

(Lecture room H 0105)

Invited Talks

SYTH 1.1	Thu	9:30–10:00	H 0105	Extracting the electrical properties of metal halide perovskite semiconductors using transient terahertz spectroscopy — ●MICHAEL B. JOHNSTON
SYTH 1.2	Thu	10:00–10:30	H 0105	THz nanophotonics with 2D materials — ●MIRIAM SERENA VITIELLO
SYTH 1.3	Thu	10:30–11:00	H 0105	Nonlinear responses and 2D spectroscopy using THz electric and magnetic fields — ●KEITH A NELSON
SYTH 1.4	Thu	11:15–11:45	H 0105	Low energy electrodynamics of correlated spin systems. — ●N. PETER ARMITAGE
SYTH 1.5	Thu	11:45–12:15	H 0105	Lightwave scanning tunneling microscopy of single molecules — DOMINIK PELLER, TYLER L. COCKER, PING YU, RUPERT HUBER, ●JASCHA REPP

Sessions

SYTH 1.1–1.5	Thu	9:30–12:15	H 0105	Terahertz Physics: Toward Probing and Controlling of Materials on the Nanoscale
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