

31st May 2018, 15:00 s.t.

Lukas Wittenbecher

Lund University

Ultrafast time-resolved photoemission electron microscopy of semiconductor nanowires

The spatio-temporal characterization of ultrafast dynamics in nanostructures is of great interest from a fundamental point of view and highly relevant for potential applications. Experimentally, this is challenging to achieve and many traditional ultrafast techniques probe ensemble averages or provide only large scale spatial information. Therefore, much effort has been devoted in recent years to the development of experimental techniques suitable for investigating ultrafast processes on the nanoscale.

One such method is time-resolved photoemission electron microscopy (TR-PEEM) which combines femtosecond pump-probe techniques with photoemission electron microscopy (PEEM). The spatial resolution of PEEM can reach a few 10nm, whilst optical excitation provides a temporal resolution in the 10fs range. In this presentation, I will briefly introduce the technique and present TR-PEEM studies exploring the influence of crystal structure and doping on photo-carrier dynamics in single semiconductor nanowires.

Invitor: Gilbert Grell
Contact Person: Marco Schröter
Financing: K. H. Meiwes-Broer

Nachsitzung: 19:00 Alter Fritz (contact M. Schröter)

Talk: English
Slides: English

Location: Institute of Physics, Albert-Einstein-Str. 24, HS 1