



Seminarankündigung

Freitag, 23. November 2018

10:30 Uhr

WSI, Seminarraum S 101

“Total photoelectron yield spectroscopy: A sensitive probe for occupied states”

Photoelectron Spectroscopy is a classical and well established technique to probe occupied electronic states in solids. Adopting x-ray excitation and targeting at core levels, it is chemically sensitive whereas excitation out of the valence band gives access to the density of occupied states. The method is surface sensitive in a range depending on the excitation energy and the spectral information in conventional photoelectron spectroscopy is extracted from the energy distribution of the photoelectrons after monochromatic excitation. Total Photoelectron Yield Spectroscopy is a modification of this technique where the spectral information is not obtained by measuring the kinetic energy spectrum of the photoelectrons but by counting their total flux and varying the excitation photon energy continuously in an energy range close to the ionisation energy. The advantage of this technique is a much higher sensitivity and a large dynamical range that allows to investigate valence band tail states and gap defect states in semiconductors.

I will discuss the characteristics of the technique and give examples of results obtained within the last decades on various semiconductors.

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