Circular dichroism in spin-resolved resonant photoemission

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Peter Krüger is a Professor of Nanoscience in the Graduate School of Advanced Integration Science, at Chiba University, Japan. After studing physcis at the Universities of Karlsruhe (Germany) and Grenoble (France), he obtained his Ph.D. in condensed matter physics at the University of Strasbourg (France) in 1998.

He then worked as a postdoc at the Institute for Solid State Physics, University of Tokyo, Japan, in 1998-99, and as a temporary researcher at the European Synchrotron Radiation Facility (ESRF), Grenoble (France) in 1999-2003. Before moving to Chiba, he held an associate professorship in the physical chemistry department of the University of Burgundy, Dijon (France) from 2003 to 2013.

Peter Krüger's main research interest is in the theory and computation of the electronic structure and spectra of surfaces, interfaces and nanosystems. He developed new computational approaches for x-ray absorption spectroscopy as well as angle-resolved resonant and non-resonant valence band photoemission. For x-ray absorption, the popular multiple scattering method was extended to a multichannel theory, which affords a proper treatment of the particle-hole multiplet coupling, essential for the L-edges of transition elements. Another main topic has been the surface and interface properties of large-gap semi-conductors such as titanium and tungsten oxide with focus on intrinsic and extrinsic defects. Since recently he studies the electronic structure and photoemission spectra of organic films and their interfaces with metals and semiconductors, relevant for organic electronic devices.

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