

Anne Fuchs

Photoelectron Spectroscopy Part II, Inverse Photoelectron Spectroscopy (IPES)

In the first talk about Photoelectron Spectroscopy (PES), we learned how to scan the occupied electronic states of atoms in condensed matter by detecting photo-emitted or Auger electrons. This second talk will focus on Inverse Photoelectron Spectroscopy (IPES), a method to probe the unoccupied electronic states of a material. This method does not use the exact inverse process of PES, but it is complementary in gaining knowledge about the electronic structure and the chemical properties of a material. Unoccupied states are important for excitation processes which determine electronic, optic, and magnetic properties. By combining PES with IPES, band structures of materials can be deduced. This talk will give the physical background of the method, explain the experimental setup in detail and show research examples to illustrate which kind of information can be accessed by IPES and how it can be evaluated.