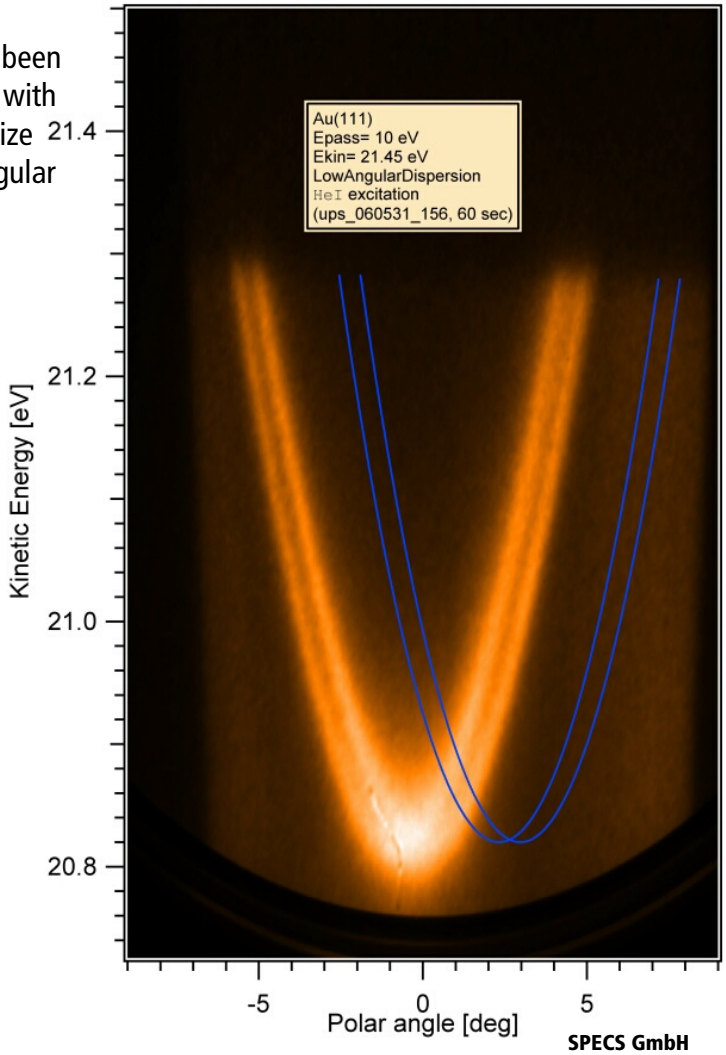
Measurements of the Surface State of Au (111)

Application Notes

The band structure of the (111) surface of Au was measured by high-resolution angle-resolved photoelectron spectroscopy. The experiments were performed using a SPECS UV 10/35 source, which has an energy resolution of about 2 meV and a spot size of about 1.5 mm diameter. The photon energy for all measurements was 21.23 eV (He I).

The photoemission data presented have been measured with a PHOIBOS 150 analyzer with the 2D-CCD Detector. The entrance slit size was 0.2 mm. The angular mode Low Angular Dispersion allows one to simultaneously measure an angular range of ±7°. The sample was cooled with liquid N_2.



Dispersion of the Au(111) surface state. The spin-orbit splitting in k is clearly resolved. The acquisition time for this image was 60s. The blue lines are parabolic line fits through the image data shifted for clarity. Data courtesy of W. Widdra (Martin-Luther-Universität Halle-Wittenberg, Germany).

References:

[1] Direct meaurements of the L-gap surface states on the (111) face of noble metals by photoelectron spectroscopy, Physical Review B 63, 2001, 115415-115415.

SPECS GmbH
Surface Analysis
and Computer Technology
Voltastrasse 5
13355 Berlin
Germany

Phone: +49 30 467824-0
Fax: +49 30 4642083
E-mail: support@specs.de
http://www.specs.de