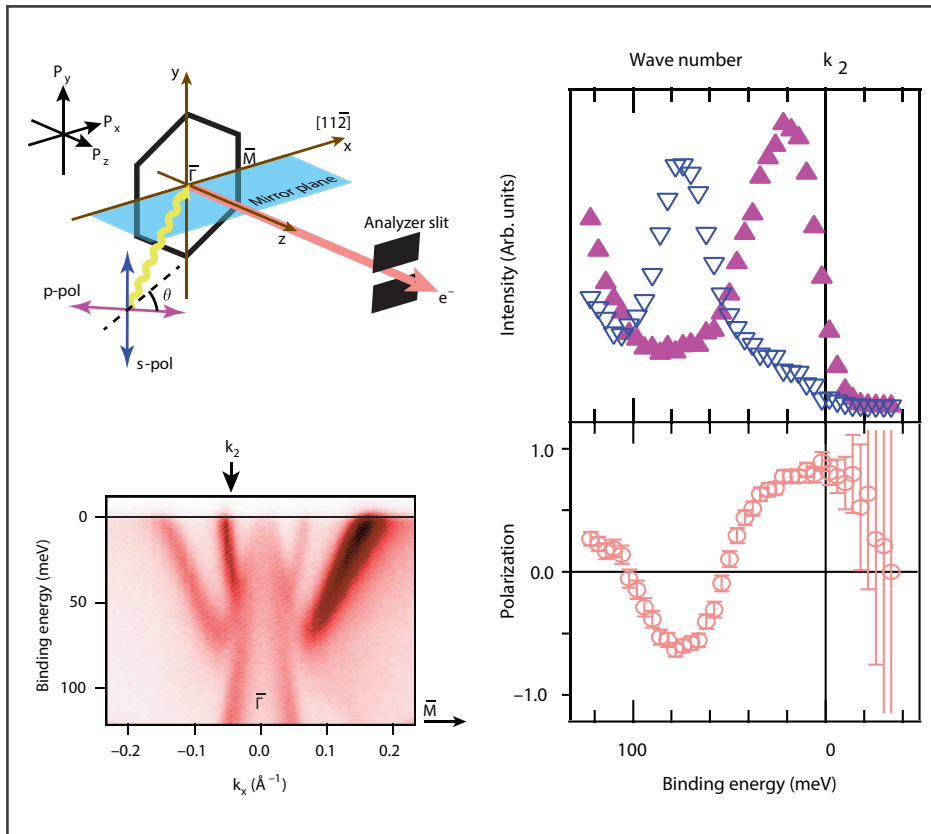


## Application Note

# Spin-dependent quantum interference studied with DA30-L & VLEED laser-ARPES



The figure shows the experimental geometry and an ARPES intensity image of Bi(111) along with the spin resolved data at wave number  $k_2$ , both with p-polarization.

In the paper **Spin-dependent quantum interference in photoemission process from spin-orbit coupled states**, *Nature Communications* **8**, 14588 (2017), doi:10.1038/ncomms14588, Koichiro Yaji et al. show how laser based spin- and angle-resolved photoelectron spectroscopy is used to study the spin-orbital texture, and especially three-dimensional spin-rotation effects, in a surface state of Bi(111).

The ARPES and spin-ARPES measurements were performed at the Institute for Solid State Physics, The University of Tokyo. The laser system provides 6.994 eV photons. Photoelectrons were analysed with a Scienta Omicron DA30-L analyzer equipped with a 3D VLEED type spin detector. Linearly polarized light, adjustable between the p- and s-polarizations, was used. The energy and angular resolutions were set to 6meV and 0.7° and the sample temperature was 15K.

Data courtesy: Dr Koichiro Yaji, ISSP, University of Tokyo

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