

Aktuelle Fragen der Nanophysik

## Montag, 17.01.2022 um 15:15 Uhr Online Seminar

## Spin-orbit-induced effects in VLEED experiments from MoS<sub>2</sub>/Au(111)



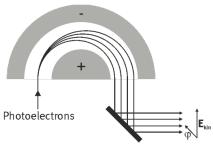
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The influence of spin-orbit interaction on low-energy electron reflection from single-layer  $MoS_2$  on Au(111) was studied by VLEED (very-low-energy electron diffraction) [1,2,3]. Maps of the electron reflectivity and the spin asymmetry of the reflected electron intensities were measured for a wide range of electron incidence angles and kinetic energies. To account for an adlayer coverage of about 30%, maps of the Au(111) substrate and for a  $MoS_2$  bulk sample were measured as well. The adlayer and substrate signals were distinguished by a comparison of the maps.

For  $MoS_2/Au(111)$ , we obtained a spin asymmetry of the reflected intensities, which shows a characteristic feature with alternating sign in the energy region of a VLEED fine structure [1]. The Au(111) substrate, in contrast, shows qualitatively different spin-asymmetry features, partially with reversed sign compared with  $MoS_2/Au(111)$ . The results of bulk  $MoS_2$  resemble the single-layer data to a great extend. The influence of the substrate on the results will be discussed.

Burgbacher *et al.*, Phys. Rev. B **87**, 195411 (2013).
Thiede *et al.*, Phys. Rev. Applied **1**, 054003 (2014).
Angrick *et al.*, J. Phys.: Condens. Matter **33**, 115001 (2020).



Spin-polarizing electron mirror