O 31: Invited talk (Dähne, Mario)

Time: Tuesday 14:00–14:45 Location: H36

Invited Talk O 31.1 Tue 14:00 H36

Rare earth silicide nanowires on silicon surfaces — •Mario Dähne — Institut für Festkörperphysik, Technische Universität Berlin, Germany

Rare earth silicide nanowires on silicon are a fascinating research subject because of their self-organized formation and their low-dimensional physical properties. In this talk I will give an overview on recent work on such nanowires on Si(001) and Si(557) surfaces, where two different mechanisms are responsible for nanowire formation. While on Si(001) the anisotropies of the substrate surface as well as of the silicide strain result in nanowire formation, on Si(557) the stepped structure leads to nanowire growth along the step edges. I will present scanning tunnelling microscopy results on the atomic structure as well as angle-resolved photoelectron spectroscopy data on the electronic properties. Depending on the specific structure, both one-dimensional and two-dimensional electronic dispersions are found, which will be discussed in the context of the band structure of the corresponding bulk silicides.