

“Properties of low-dimensional materials by low-voltage TEM”

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ABSTRACT

Two-dimensional materials exhibit properties, which can differ strongly from those of their bulk counterparts. In situ electron microscopy nowadays can provide experimental data on the level of the single atom, thanks to extremely rapid developments in recent years owing, in particular, to ground-breaking advances in electron optics. Here we present recent results using our unique chromatic and spherical aberration-corrected SALVE (Sub-Angstrom Low-Voltage Electron microscopy) instrument both in imaging and spectroscopy modes applied to the determination of structural and electronic properties of low-dimensional materials.

CV

Ute Kaiser received her Diploma and her PhD in Crystallography (Physics) from the Humboldt University Berlin and her Habilitation in Experimental Physics from the Friedrich-Schiller University, Jena, Germany, in 2002. Since 2004 she is full professor at Ulm University in the Physics Department and Head of Ulm's Central facility of Materials Science Electron Microscopy. Her research activities are in the fields of battery, semiconductor, and catalysts materials. From 2009 till 2018 she was the Scientific Director of the SALVE (Sub Angstrom Low-Voltage Electron Microscopy) project to realize a low-voltage TEM, corrected for chromatic and spherical aberration, dedicated to study and develop low-dimensional materials. The latter is her most active research field.