



SFB1242

Nichtgleichgewichtsdynamik kondensierter
Materie in der Zeitdomäne

UNIVERSITÄT
DUISBURG
ESSEN

Open-Minded

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Novel approaches for electromagnetic field mapping, electron wavefront shaping and instrumentation development in transmission electron microscopy

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The transmission electron microscope is a powerful tool for measuring not only local variations in microstructure and composition, but also functional properties and dynamic processes in materials. In particular, phase contrast techniques such as electron holography and electron ptychography can be used to record local variations in magnetic field and electrostatic potential within and outside materials with nm to atomic spatial resolution. I will illustrate how such measurements can be made both in projection and in three dimensions, as well as in the presence of external stimuli such as applied voltage, magnetic field, reduced or elevated temperature, reactive gas and light. I will also briefly describe examples of modern experiments in the transmission electron microscope that involve variations of the double slit experiment, plans for next-generation electron microscopes at the Ernst Ruska-Centre in Forschungszentrum Jülich and plans for a European Distributed Research Infrastructure for Advanced Electron Microscopy.

Für diese Zeit steht eine Kinderbetreuung nach vorheriger Anmeldung zur Verfügung.

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