SFB1242

SFB 1242 Nichtgleichgewichtsdynamik kondensierter Materie in der Zeitdomäne

UNIVERSITÄT DUISBURG ESSEN

Open-Minded

19.01.2021 / 10 Uhr c.t.

Energy Conversion Pathways in Graphite from Attosecond Soft X-ray Spectroscopy

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The conversion of light to fundamental excitations of matter is governed by the build-up of electronic coherences and their dephasing to excited quasiparticles due to scattering processes, which occur on atto- and femtosecond timescales. Disentangling the interplay of these mechanisms, and how they lead to a specific flow of energy inside a material, is extremely challenging since many of these effects occur on overlapping temporal scales. I will discuss the semimetal graphite, which was investigated with attosecond K-shell X-ray absorption near edge structure (XANES) spectroscopy and show how the combination of our new measurement methodology with theoretical modelling allows to assign the spectroscopic signatures to microscopic processes relating to the dynamic evolution of electrons, holes and phonon modes of the material. Lastly, since this new method is generally applicable to molecules and solids, I will point out some possibilities to address canonical questions relevant for light-harvesting and general non-equilibrium multi-body physics of phase-transitions.

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

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