



SFB1242

Nichtgleichgewichtsdynamik kondensierter
Materie in der Zeitdomäne

UNIVERSITÄT
DUISBURG
ESSEN

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Campus Duisburg**

Ultrafast X-ray Studies and Non-Equilibrium Transformation Pathways in Geophysical Materials

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Understanding the processes which dictate physical properties in condensed matter, such as strength, elasticity, plasticity, and the kinetics of phase transformation/crystallization, requires studies at the relevant length-scales (e.g., interatomic spacing and grain size) and time-scales (e.g., phonon period). Experiments performed at the Matter in Extreme Conditions end-station at the Linac Coherent Light Source, SLAC combine a laser-driven dynamic compression pump and X-ray free electron laser (XFEL) probe to explore non-equilibrium transformation pathways and mechanisms. We present time-resolved structural and/or electronic transformations in a suite of geophysical materials, including SiO₂ (quartz/fused silica), Fe-bearing silicates, and pure iron. Taking advantage of the brilliance and coherence of XFEL technology coupled with a dynamic driver provides an experimental platform that takes us to the frontier in condensed matter physics.

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

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