Postdoc Position: Development of a Pulsed Laser Deposition system for time-resolved ARPES investigations of correlated materials

The Emmy Noether research group Dynamics of Correlated Materials at the Fritz Haber Institute (https://pc.fhi-berlin.mpg.de/docm/) is offering a postdoctoral position in experimental condensed matter physics. The group investigates the ultrafast dynamical processes in strongly correlated systems, in order to understand the manifold of competing broken-symmetry ground states of those materials such as high-temperature superconductivity, magnetic orders or density wave formation. The Fritz Haber Institute and the Department of Physical Chemistry offer an excellent and interdisciplinary environment for top-of-the-line research. The group operates a world-leading high-repetition rate extreme ultraviolet (XUV) time- and angle-resolved photoelectron spectroscopy (trARPES) setup including a momentum microscope.

Topics of the research: The scope of the offered position is the investigation of the ultrafast electron dynamics in thin films and heterostructures of strongly correlated transition-metal oxides. The successful applicant will implement and operate a pulsed laser deposition (PLD) system for the growth of such transition-metal-oxide thin films. Sample growth will be optimized using reflection high-energy electron diffraction (RHEED) and characterization by ARPES and XPS. The femtosecond dynamics of optimized samples will be studied using the in-house high-repetition rate XUV trARPES setup. In addition, complementary experiments of the structural dynamics using femtosecond electron diffraction or x-ray diffraction are possible.

Applicants should hold a PhD degree or equivalent in Physics or Material Sciences, and should have a strong background and interest in the following areas:

- PLD growth of transition metal oxides
- Angle-resolved photoelectron spectroscopy
- Physics of strongly correlated materials
- Ultrafast spectroscopy

The appointments will be for a duration of 24 months with a salary according to TV-L (E13). Preference will be given to female and handicapped applicants provided equal suitability. Applications (Motivation letter, CV, list of publications, description of previous work, contact details of at least two academic references, etc.) shall be sent until 19.04.2020 to:

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