The DFG-funded **Research Training Group (RTG 2717)**

"Dynamics of Controlled Atomic and Molecular Systems (DynCAM)“

at the **University of Freiburg**

offers a

PhD Position

The scientific core of the Research Training Group DynCAM lies in the investigation of dynamics occurring in physical systems of increasing complexity, ranging from isolated atoms to complex molecular aggregates. **The main objective of the PhD project is to deeply understand, enable and improve high quality, large area perovskite crystallization by using laser as heat source.** The PhD position will be located in the research group of Dr. Jale Schneider at Fraunhofer ISE and the project will involve collaborations with other research groups of the RTG, especially with the group of Prof. Tanja Schilling.

The heat induced crystallization of the perovskite layers is a complex process that is only partially understood. The fast response time of a laser as a heat source and its widely variable parameters (wavelength, beam shape and size, dwell time, pulse duration etc.) makes it more suitable to explore the crystallization process compared to a hotplate or a convection oven with limited flexibility and long process duration up to several minutes. Additionally, it opens new paths for a better process with dynamically adjustable temperature gradients and spatial and temporal selectivity. The strength of the project approach will be the usage of integrated in-situ macro scale analysis and sensor-feedback-based control of different laser sources during the crystallization. This will allow the investigation of the laser material interaction in real time. Combined with the theoretical modeling to be performed in the Shilling group, the molecular dynamics and phase changes during crystallization will be understood, leading to an optimized process. The context to showcase the results will be functional single junction and multi junction perovskite solar cells.

We are looking for highly motivated, enthusiastic, and team-oriented candidates that are eager to learn new methods, are passionate about science, and hold a master’s degree or equivalent in physics, material sciences, chemistry, or related areas. Basic background in laser material interaction is important and hands-on experience in the application of laser technology is advantageous.

Please send your application as **a single pdf-file** including a letter of motivation, a CV, certificates of your university degree (including grades), a transcript of records and contact details of two references by August 07th, 2026.

For further information see www.rtg-dyncam.de .

Please send your application to: info@rtg-dyncam.de

The earliest starting date is January 1, 2027; duration of contracts is up to 36 months. The salary corresponds to TV-L E13 (75%), this also includes health insurance and social benefits according to the German labor law.

The University of Freiburg seeks to increase the number of female scientific faculty members and therefore strongly encourages qualified women to apply for the position. The university committed to provide a family-friendly workplace. In case of equal qualification, persons with disabilities will be given preference.