

## **Stellenausschreibung der Universität Regensburg | Nummer 23.096**

PhD (Theory) and Postdoc position (Experiment):

Quantum Sensing in Ultrafast Transmission Electron Microscopy

Quantum coherent dynamics in solid-state nanostructures will play a decisive role in future quantum industries but experimental techniques to characterize such dynamics on their intrinsic time and length scales are still in their infancy. In the newly established lighthouse project "Free-electron states as ultrafast probes for qubit dynamics in solid-state platforms" funded by the Munich Quantum Valley initiative, the groups of Prof. Ferdinand Evers and Prof. Sascha Schäfer at the University of Regensburg will address this challenge and will jointly develop the theoretical and experimental foundations for probing the quantum state of matter by femtosecond electron pulses. Within this project and associated with the Regensburg Center for Ultrafast Nanoscopy (RUN), we seek to appoint a **Postdoctoral Researcher** (E13) in experimental physics at the earliest possible date:

### **Postdoctoral Researcher (m/f/d) in experimental solid-state physics**

#### **Your tasks include:**

- Research on implementing electron-light and electron-matter entanglement in ultrafast transmission electron microscopy.
- Applying entangled states for non-classical electron imaging approaches.
- Contribute to the development of the first aberration-corrected ultrafast transmission electron microscope at the Regensburg Center for Ultrafast Nanoscopy.
- Assistant teaching in courses related to solid-state physics, electron microscopy or quantum optics.

#### **Your qualifications:**

- Excellent PhD in experimental solid-state physics or related fields
- Experimental experience in at least one of the following topics: transmission electron microscopy, ultrafast science or quantum optics.
- Experience in complex instrument automation and data analysis software
- Strong communication and writing skills.

#### **We offer:**

- A creative and innovative research environment with a particular focus on instrumental and method development
- A diverse research team with experimental and theoretical physicists
- Remuneration and benefits according to 75% E13 (PhD position) and 100% E13 (Postdoc position).

The University of Regensburg is an innovative and interdisciplinary campus university with over 20.000 students. Its research is highly recognized, and a wide range of degrees are offered for students from Germany and abroad.

The University aims to raise the number of its female researchers and explicitly encourages applications by qualified females. Furthermore, support to families is offered to meet the demands of the workplace (see [www.uni-regensburg.de/chancengleichheit](http://www.uni-regensburg.de/chancengleichheit) for more information).

Applicants with a disability are given preferential consideration in case of equal qualification. Please indicate any disability already at the application stage.

Also please note that any costs arising from a possible interview cannot be reimbursed.

Applications (including cover letter and CV) should be sent as one PDF file by 31 May 2023 to [ferdiand.evers@ur.de](mailto:ferdiand.evers@ur.de) and [sascha.schaefer@ur.de](mailto:sascha.schaefer@ur.de).

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