TECHNISCHE UNIVERSITÄT
IN DER KULTURHAUPTSTADT EUROPAS
CHEMNITZ

Job advertisement

Chemnitz University of Technology has established itself as an innovative scientific and educational institution that consciously faces the challenges of competition between universities. It offers attractive jobs to personalities with proven professional competence who would like to contribute constructively to innovative development.

The Faculty of Natural Sciences, Junior Professorship of Experimental Semiconductor Physics, has a vacancy either for a

Research Associate / Postdoc (m/f/x)
(100%, salary group 13 TV-L)
limited for 24 months with possibility extensions if funds are available

or a

Research Assistant / PhD student (m/f/x)
(67%, salary group 13 TV-L)

limited for 36 months. Starting date is flexible with an aim at May/June 2025. Temporary employment is in accordance with the regulations of the Wissenschaftszeitvertragsgesetz (WissZeitVG) and the Sächsisches Hochschulfreiheitsgesetz (SächsHSFG) as amended.

The candidate for this post will join the research group of Simon Kahmann. Research in the KahmannLab is focused on a core laboratory of optical spectroscopy and microscopy techniques with a keen eye towards developing novel semiconductors and their application in optoelectronic devices. The group is part of the Institute of Physics at the Faculty of Natural Sciences at Chemnitz University of Technology, which provides access to a variety of cutting-edge experimental techniques and facilities for solid state research.
The candidate will join the project *Singlet and Triplet Energy Transfer in Two-Dimensional Perovskites (INTENSITY)* that will be conducted in close collaboration with partners at Hasselt University (Wouter van Gompel) and University of Mons (David Beljonne/Claudio Quarti).
The aim of this project is to study **the photophysics of novel 2D and quasi-2D metal halide perovskites** that incorporate spacer cations with delocalised pi-electron systems. Mechanisms of energy transfer will be studied with the aim to tune the transfer for eventual use in optoelectronic devices. Relevant systems will be synthesised by project partners and the results will be fed into a feedback loop with computational modelling.

Responsibilities

The candidate will characterise thin films and single crystals based on novel perovskite materials. Chiefly, this will be done via **time and energy-resolved optical spectroscopy techniques – photoluminescence (TRPL) and transient absorption (TA)**, in particular. The project will be highly interdisciplinary and will require regular exchange with project partners. Local work will be conducted in close collaboration with team members focusing on device fabrication and related materials systems.

The successful candidate will:

- Characterise the photophysics of 2D perovskites via a suite of spectroscopy techniques, especially focusing on TRPL/TA using gated streak camera set-ups
- Handle samples and coordinate measurements with collaborators
- Act as device manager for a femtosecond laser spectroscopy system
- Work in close interaction with project members focusing on the synthesis of novel semiconductors and materials simulation
- Actively participate in the group's activities and outreach projects

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- Participate in the dissemination of results through articles in peer-reviewed journal articles as well as conference presentations

Your profile

We are looking for a highly motivated and enthusiastic candidate with a master's/doctoral degree in Physics, Chemistry or a related area.

Required:
- Strong theoretical and practical background in photophysics, light-matter interaction, and laser spectroscopy
- Previous experience with either time-resolved photoluminescence or transient absorption spectroscopy
- Experience with solution-processed semiconductors including halide perovskites, colloidal nanocrystals, or organic semiconductors
- Openness towards interaction with international collaborators

Desired:
- Good understanding of semiconductor physics and optoelectronics
- Experience with programming/data visualisation using python
- Excellent command of written and spoken English exemplified by previous experience of working in an international environment

We particularly encourage those candidates typically underrepresented in the STEM area to apply.
In addition, you must meet the hiring requirements according to § 73 SächsHSFG.

Applications should be sent electronically (preferred) or by post to the address stated below by 23 May 2025, quoting the reference **KahmannLab-INTENSITY**. Applications are only accepted as one collated .pdf file and must include the following documents: cover letter, CV, certificates, contact references.
Applications will be rapidly reviewed after the closing date and online interviews conducted shortly thereafter. Please note that, for security reasons, no electronic applications or attachments to applications made available for download via hyperlinks to third parties can be considered in the recruitment process.

The selection is based on suitability, qualification and professional performance. Chemnitz University of Technology is particularly committed to promoting women and therefore expressly invites qualified women to apply. In the case of equal suitability, severely disabled persons or persons of equal status will be given priority in accordance with SGB IX.

Chemnitz University of Technology
Faculty of Natural Sciences
Experimental Semiconductor Physics
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For further informal discussions on the post, please contact Simon Kahmann
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Information about the collection and processing of personal data is to be found here: https://www.tu-chemnitz.de/verwaltung/personal/public/Datenschutz/dse_dp.html.