Interdisciplinary Project (IDP)
High-Throughput Scientific Data Acquisition & Processing for Material Discovery

Your role

The experimental setups in our state-of-the-art laser laboratory are running specialized hardware for material characterization and discovery towards sustainable energy applications. But in addition to great hardware, we also build software for acquisition and processing of large data sets. Help us creating software that acquires and converts multidimensional data sets into higher information that drives our research progress.

In the context of this topic you will gain insights into the concepts how materials enable sustainable energy applications, how the material's properties underpin their function and how research is conducted in a cutting-edge scientific environment.

The listed topics are examples of tasks but new ideas continuously come up as we are advancing our techniques and research. If you are interested to join us, please apply and mention your interests and background, so we can discuss suitable topics with you in detail.

Example Topics

- On-the-fly processing of large volume multi-dimensional experimental data from high-resolution mapping of local material properties.
- Automation of multi-component experimental setups for high-throughput data acquisition
- Development of Analysis Algorithms and GUIs for Data Acquisition and Analysis

Skills

- You are currently studying computer science or electrical engineering (or similar)
- You have relevant programming skills in Python, Matlab, Qt, C++
- Experience with physics or chemistry is great (but rare)
- You have very good communication skills in English

Team

You will be working in a highly motivated team of experts at nexus between the field of material science, semiconductor physics, and laser spectroscopy. For more details, please visit the Deschler group website.

Details

Projects can start at any time. The corresponding lecture could be in the field of energy materials, laser physics or spectroscopy. If you are interested to join our team, please send your current CV with your track record (in English) to felix.deschler@tum.de.