PhD student in experimental condensed matter physics

Physics Department, University of Fribourg, Switzerland

Successful candidate will join the Magnetism and Superconductivity group led by Prof. Christian Bernhard and will work closely with Dr. Premysl Marsik, in a team specialized in optical spectroscopy of unconventional materials.

The position is funded by an SNF grant, *Exploring the Magneto-Optical Response of Thin Films with a Unique Broadband Generalized Ellipsometry Technique*. Position is 100%, on-site, planned for 4 years and paid according to SNF guidelines.

Your Tasks

Your role will involve developing and refining experimental techniques for generalized ellipsometry and applying these advanced methods to study thin films of quantum oxides, topological materials, and magnetic semiconductors. The position includes some teaching duties, active participation on seminars, and collaboration within the optical spectroscopy team.

Qualifications

- Master's degree in physics, preferably in solid-state or condensed matter physics, or a similar field (e.g., physical engineering, materials science).
- Laboratory experience and/or an experimental master's thesis is beneficial.
- Proficiency in spoken and written English.
- Basic programming skills and a willingness to learn more.

We Offer

State of the art spectroscopic ellipsometry lab covering a broad spectral range from THz to UV frequencies. Facilities for thin-film growth and characterization, including magneto-transport, magnetization, x-ray diffraction, and AFM. Opportunity to visit large-scale facilities (high magnetic field laboratory, synchrotrons), and to attend workshops and conferences. Collaborative and friendly relationships with other groups of the Physics Department working on modern aspects of condensed matter physics, including electron spectroscopies, computational condensed matter physics, photonics, non-equilibrium dynamics, and time-resolved experiments. Our team has extensive experience in building ellipsometers and is committed to open-science principles, including software, hardware, and data. We develop software tools for the entire data acquisition, processing, and analysis chain (Python, C++, Lisp), and you will have the opportunity to contribute to open-source projects.

Application and Contact

Please send your application, including a motivation letter and a CV with the names of two referees, by email to Dr. Premysl Marsik, University of Fribourg, Chemin du Musée 3, CH-1700 Fribourg, Switzerland, at premysl.marsik@unifr.ch. Feel free to reach out with any questions related to this position.

We strongly encourage female candidates to apply.