

PhD Position in Ultrafast Spectroscopy of Quantum Materials

Institute of Applied Physics – University of Bern, Switzerland

A PhD project is available in the Nonlinear Optics group at the Institute of Applied Science – University of Bern.

The research activity of our group exploits ultra-short pulses of laser light to investigate and manipulate the properties of complex solids. Our focus is to explore the dynamical properties of “quantum materials”, materials that manifest macroscopic quantum behaviors at high temperatures, such as high-temperature superconductors. In these systems, intense laser pulses are able to access the atom, spin, and electron dynamics at their fastest possible timescales, providing a deep understanding of the underneath complex out-of-equilibrium physics.

The PhD project will involve the development of advanced laser-based spectroscopic systems to investigate the ultrafast dynamics of quantum materials.

Your tasks:

- Conducting scientific research within the project
- Preparing, performing, and analyzing experiments and simulations
- Gaining an understanding of the physical properties of quantum materials on ultrafast timescales
- Developing advanced laser-based spectroscopic systems
- Writing reports and publications, creating presentations and presenting talks and posters, including at international conferences
- Collaborating with external research teams and taking part in all tasks relevant to the project

Your profile:

- Master's or diploma degree in physics (or a closely related subject)
- Knowledge of experimental condensed matter physics (desirable)
- Knowledge of nonlinear optics and/or optical spectroscopy (helpful but not essential)
- Willingness to take part in experiments at large-scale facilities

We offer you:

- Access to well-equipped laboratories
- The opportunity to work independently and as part of a highly motivated team, in close contact with researchers of the institute and international collaborators
- An excellent and stimulating research environment to grow both academically and professionally

If you are interested, please send your CV along with a brief description of your research interests to Dr. F. Giorgianni at Flavio.giorgianni@unibe.ch. The position is available immediately, and the starting date is negotiable. For more information about the project, please contact Dr. F. Giorgianni.