

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 properties of complex solids. Our focus is to explore the dynamical properties of “quantum materials”, materials that manifest macroscopic quantum behaviors at high temperature, 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 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 ultrafast dynamics of quantum materials.

Your tasks:

- Carry out scientific research within the project
- Prepare, perform and analyze experiments and simulations
- Gain understanding of physical properties of quantum materials on ultrafast timescales
- Development of advanced laser-based spectroscopic systems
- Write reports and publications, create presentations and present talks and posters, also on international conferences
- Take part in all tasks relevant for the project, strong collaboration with external research teams

Your profile:

- University master's or diploma degree in physics (or a closely related subject)
- Knowledge in experimental condensed matter physics is desirable
- Knowledge in nonlinear optics and/or optical spectroscopy would be helpful but this is not a must
- Willingness to take part in external experiments

We offer you:

- Well-equipped laboratories
- Ability to work independently and within a highly motivated team, in close contact with researchers of the institute and international collaborators
- Excellent and stimulating research environment to grow both academically and professionally

Candidates can send their CV together with a brief description of their research interests to Dr. F.

Giorgianni: Flavio.giorgianni@psi.ch

The position is available immediately, whereas the starting date can be discussed.

For further information concerning the project, please contact Dr. F. Giorgianni.