

Seminar über Ultrafast Science and Technology

Referent/in: Dr. Sacha Schwarz, Infinite Potential Laboratories LP,
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Titel: Quantum 2D Materials

In this talk, I will present our current progress in the development of an experimental workstation to characterize quantum 2D materials like graphene, hexagonal boron nitride or transition-metal dichalcogenide (TMDC) monolayers. We combine a time-resolved spectroscopic photo-emission electron microscope (PEEM) with a fs-laser system to study dynamic processes in real and momentum space with sub-10 fs time resolution. Our high-energy Ti:Sa amplifier allows us to perform pump-probe experiments with THz radiation and UV light, absorption measurements with light in the visible range as well as interferometry with few-cycle IR pulses. In addition to our main system, we included in our sample preparation chamber a scanning tunneling and atomic force microscope (STM/AFM), and we fabricate our own 2D materials by means of chemical vapour deposition (CVD) to keep full control over the material synthesis. Infinite Potential Laboratories LP is a start-up company under the umbrella of Quantum Valley Investments with the goal to produce devices suitable for quantum simulation and quantum information processing.

Zeit: Donnerstag, 19. Oktober 2023, 11.15 Uhr

Ort: B116, ExWi, Sidlerstrasse 5, 3012 Bern