Universität Bern
Institut für Angewandte Physik
Sidlerstrasse 5
3012 Bern
Schweiz

Telefon: +41 (0)31 631 89 11
Telefax: +41 (0)31 631 37 65
E-Mail: IAPemail@iap.unibe.ch
WWW: http://www.iap.unibe.ch/

UNIVERSITÄT BERN

Seminar über Ultrafast Science and Technology

Referent: Dr. Wojciech Gawelda, European XFEL GmbH, Schenefeld, Germany

Titel: Scientific opportunities and challenges for chemistry using X-ray Free Electron Lasers

With the advent of soft- and hard X-ray Free Electron Lasers (XFEL) sources, entirely new scientific opportunities and prospects have been become available in the field of time-resolved X-ray spectroscopy and X-ray scattering. One of the most unprecedented features of XFELs is their ability to produce high intensity pulsed Xray pulse trains with single pulse duration well below 100 femtoseconds. This property allows dynamical studies of light-matter interactions virtually in any medium on the very fundamental timescales of interatomic motions, i.e. intra- and intermolecular vibrations, from gas-phase to complex molecular systems, i.e. biomolecules and proteins. In this talk I will present a state-of-the-art overview of the above mentioned research venues, with special emphasis on chemical dynamics studies, which highly benefit from the progress in the field of XFEL technology. In particular, I will focus on those aspects, which profit most from the temporal properties of the XFEL beams. Some very recent examples of early user experiments carried out at the European XFEL facility in the past few months will be presented and discussed.

Zeit: Donnerstag, 03.05.2018, 11:15 Uhr

Ort: **Hörsaal B116**, Gebäude exakte Wissenschaften, Sidlerstrasse 5, Bern, Schweiz