

European XFEL Users' Meeting — Satellite meeting

Chemical Dynamics Opportunities at the Scientific Instrument FXE



28 January 2020

European XFEL, Holzkoppel 4, 22869 Schenefeld and
DESY, CFEL SemR I-III, Notkestraße 85, 22607 Hamburg

Abstract:

The Femtosecond X-Ray Experiments (FXE) Instrument has recently taken large steps towards experiments for time-resolved x-ray emission (XES) and wide-angle scattering (WAXS) studies. The instrument can now host experiments, which demand an unprecedented high average flux and signal quality, possible due to the MHz delivery rate of 2-4 mJ X-ray pulses. The current status of the FXE will be given together with its upcoming capabilities.

This workshop seeks to bring together the scientific community aiming to exploit this instrument for chemical dynamics research benefiting from the spin and electronic sensitivity delivered from XES data, and from structural dynamics studies exploiting WAXS at up to 20 keV. The workshop will cover variety of topics in photochemistry, which can benefit for the simultaneous determination of coupled electronic and geometric transient structure changes on femtosecond time scale.

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Tuesday 28 January 2020 – DESY, CFEL Sem.R. I-III (Bldg. 99)			
09:00	Welcome	Sakura Pascarelli	European XFEL
09:15	FXE instrument update	Dmitry Khakhulin	European XFEL
09:45	Spin cross-over dynamics in biology and condensed matter	Majed Chergui	EPFL, Switzerland
10:10	Visualizing the ultrafast spin-dynamics in photoexcited Nickel tetrapyrroles	Sophie Canton	ELI-Alps, Hungary DESY, Germany
10:35	Coffee break		
11:00	Ultrafast X-ray spectroscopy to understand the photochemistry of base metal complexes	Matthias Bauer	University of Paderborn, Germany
11:25	Tracking coherent structural dynamics in solvated metal complexes	Martin M. Nielsen	DTU, Denmark
12:00	Lunch at DESY Restaurant		
13:30	Solving chemical processes dynamics with X-ray spectroscopy	Jacinto Sa	Uppsala University, Sweden
13:55	Luminescent 3d ⁶ and 4d ⁶ metal complexes made from Earth-abundant elements as alternatives to non-emissive Fe(II) compounds	Oliver Wenger	University of Basel, Switzerland
14:20	Tuning Ligand-Environments for the Stabilization of Iron Complexes in Oxidation States +I to +V, including Spin-Crossover in 4-Coordinate Fe(II)	Karsten Meyer	Friedrich Alexander University, Erlangen, Germany
14:45	Tracking reaction intermediates in catalytic reactions relevant to molecular artificial photosynthesis	Antoni Llobet	ICIQ, Spain
15:10	Coffee break		
15:30	Ultrafast, fast and slow structural changes of photoactive orange carotenoid protein during its photocycle	Eugene Maksimov	Moscow State University, Russia
15:55	Spinflip in chromium and vanacomplexes	Katja Heinze	Johannes Gutenberg University, Mainz, Germany
16:20	Discussion Round	Christian Bressler	European XFEL
17:00	Bus transport to European XFEL		
17:30	Tour of FXE Instrument	all	
18:30	Dinner at <i>BeamStop</i> Restaurant (at EuXFEL)	all	