

# Science@FELs 2014 Conference

15.09.2014 - 17.09.2014

## Monday, September 15

08h00 – 13h00 Registration

**Students Session 1** (Chair: R. Abela)

09h00 **J. Hastings** X-Ray Free Electron Lasers: Seeing the Light Fantastic

09h45 **J. Wark** High Energy Density Science with X-Ray Free Electron Lasers

10h30 **Coffee Break**

**Students Session 2** (Chair: R. Abela)

11h00 **J. Stöhr** A New Era of X-ray Science: Beyond one-photon-at-a-time

11h45 **I. Schlichting**  
X-ray Free-Electron Lasers – a bright future for crystallography

12h30 **Lunch** (PSI restaurant OASE)

13h30 **Opening Session** (Chair: R. Abela)

J. Mesot (Director Paul Scherrer Institut)  
J. Feldhaus (DESY)

**Condensed Matter Session 1** (Chair: J. Stöhr)

14h00 **S. Johnson** An x-ray view of ultrafast dynamics in the solid state: coupled motion of the lattice, spins and orbitals

14h35 **C. von Korff** Imaging ultrafast demagnetization dynamics after a spatially localized optical excitation

15h00 **S. Gerber** Direct structural characterization of photo-induced coherent phonon oscillations in BaFe<sub>2</sub>As<sub>2</sub> via ultrafast x-ray diffraction

15h25 **F. Capotondi** DiProI, the coherent diffraction imaging end-station at FERMI@Elettra FEL user facility: present status and future research opportunities

15h50 **Coffee Break**

**Condensed Matter Session 2** (Chair: S. Johnson)

16h20 **B. Murdin** Coherent control and electrical detection of charge excitations in hydrogenic silicon impurities with a Free Electron Laser

16h55 **H. Schneider** Terahertz spectroscopy of zero- and two-dimensional semiconductor nanostructures with the free-electron laser FELBE

17h20 **W. Wurth** Time-resolved photoelectron spectroscopy using high-repetition rate free-electron lasers

17h45 **P. Beaud** A time-dependent order parameter for photo-induced ultrafast phase transitions

18h30 **Poster Session, Aperó Riche** (SLS)

## Tuesday, September 16

**Biology Session** (Chair: I. Schlichting)

09h00 **G. Schertler** New opportunities with Free Electron Lasers to study membrane protein dynamics

09h35 **K. Nass** Radiation damage in serial femtosecond crystallography

10h00 **M. Frank** Fixed Target 2D and 3D Protein Crystallography at XFELs

10h25 **S. Boutet** Macromolecular Crystallography at XFELs and LCLS: Current Status, Limitations and Future Plans

10h50 **Coffee Break**

**Chemistry Session** (Chair: B. Redlich)

11h10 **M. Beye** Ultrafast Surface Chemistry at LCLS

11h45 **W. Gawelda** Observing molecular dynamics with ultrafast X-ray spectroscopies and scattering

12h10 **K. Schnorr** Electron Rearrangement Dynamics in Dissociating Multiply Charged Iodine Molecules

12h35 **T. Penfold** A combined experimental and theoretical study of the excited state dynamics of a prototypical Cu(I)-phenanthroline complex

13h00 **Lunch** (PSI restaurant OASE)

**Theory Session** (Chair: Ch. Mudry)

14h00 **B. Ziaja-Motyka** Transitions in matter triggered by intense ultrashort X-ray pulses

14h35 **A. Crawford** Soft X-ray ionisation of atoms within TDDFT and nuclear effects on the attosecond TRPES of ethylene

15h00 **Z. Jurek** XMDYN: Modeling radiation damage of XFEL irradiated samples

15h25 **B. Deschaud** Atomic kinetics in solids under strong XFEL irradiation

15h50 **Coffee Break**

16h20 **Site Visit Paul Scherrer Institute**



18h30 **Conference Dinner** (PSI restaurant OASE)

## Wednesday, September 17

**Matter under extreme Conditions Session**

(Chair: J. Wark)

09h00 **H. Yoneda**

Ultra-intense x-ray laser matter interaction with hard x-ray free electron laser

09h35 **S. Toleikis** Resolving Ultrafast Heating of Dense Cryogenic Hydrogen

10h00 **J. Hoszowska** Multiphoton induced x-ray fluorescence of Fe atoms

10h25 **M. Ozerov** Electron spin resonance study in the chiral ferrimagnet Cu<sub>2</sub>OSeO<sub>3</sub> using pulsed magnetic fields up to 64 T and terahertz free electron laser

10h50 **Coffee Break**

**Atomic, Molecular-Systems Session**

(Chair: J. Feldhaus)

11h10 **M. Vrakking** Complementary uses of High-Harmonic and FEL-based XUV radiation

11h45 **A. Przystawik** Hidden Charge States in Soft-X-Ray Laser-Produced Nanoplasmas Revealed by Fluorescence Spectroscopy

12h10 **M. Meyer** Dichroism in the two-color multi-photon ionization of helium

12h35 **F. Stienkemeier** Cluster Experiments at the Free Electron Laser FERMI at Elettra

13h00 **Lunch** (PSI restaurant OASE)

**New Developments Session** (Chair: B. Patterson)

14h00 **B. Pedrini** Revival of X-ray cross-correlations "because" of X-ray Free Electron Lasers

14h30 **M. Harmand**  
Arrival time diagnostic using free carriers generation induced by X-ray FEL

15h00 **Y. Nishino** Coherent imaging by x-ray laser diffraction

15h30 **F. Bencivenga** Advanced pump-probe experiments at FERMI, results and perspectives

16h00 **Closing Remarks**