

ELI Beamlines E1 technology and applications

Jakob Andreasson, 27 February 2024

Selected publications mentioned in the presentation

Direct observation of ultrafast exciton localization in an organic semiconductor with soft X-ray transient absorption spectroscopy, *Nature Communications*, 13, Article number: 3414 (2022)

Attosecond-pump attosecond-probe x-ray spectroscopy of liquid water, *Science*, 10.1126/science.adn6059 (2024).

Directed ultrafast conformational changes accompany electron transfer in a photolyase as resolved by serial crystallography, *Nature Chemistry* (2024). DOI: 10.1038/s41557-023-01413-9

Sub-Millisecond Photoinduced Dynamics of Free and EL222-Bound FMN by Stimulated Raman and Visible Absorption Spectroscopies, *Biomolecules*, 13(1) (2023) 161 DOI: <https://doi.org/10.3390/biom13010161>

Imaging charge transfer in iodomethane upon x-ray photoabsorption, Benjamin Erk, Rebecca Boll et al. *Science*, 18 July 2014 (10.1126/science.1253607)

Time resolved spectroscopy with femtosecond soft-x-ray pulses, DOI: 10.1007/s00339-009-5176-4

Ultrafast dynamics of hot charge carriers in an oxide semiconductor probed by femtosecond spectroscopic ellipsometry, S Richter, et al., *New Journal of Physics* 22 (8), 083066 (2020)

2.4-Å structure of the double-ring Gemmatimonas phototrophica photosystem, *Science Advances* • 16 Feb 2022 • Vol 8, Issue 7

Structural dynamics upon photoexcitation-induced charge transfer in a dicopper(I)-disulfide complex, M Naumova, et al., *Chemical Physics* 20 (9), 6274-6286 (2018)

Raman spectroscopy of CaMnO₃: Mode assignment and relationship between Raman line intensities and structural distortions, *PHYSICAL REVIEW B*, VOLUME 65, 184301 (2002)

Inorganic Phosphor Materials for Lightning, *Top Curr Chem*, 374:21, (2016)

High-flux source of coherent XUV pulses for user applications, O. Hort, et al., *Optics express* 27 (6), 8871-8883 (2019)

A Multipurpose End-Station for Atomic, Molecular and Optical Sciences and Coherent Diffractive Imaging at ELI Beamlines, E Klimešová, et al., *The European Physical Journal Special Topics*, 1-12 (2021), <https://doi.org/10.1140/epjs/s11734-021-00192-z>

Femtosecond hard X-ray plasma sources with a kilohertz repetition rate, F. Zamponi, et al., Applied Physics A volume 96, pages51–58 (2009)

Ultrafast inter-ionic charge transfer of transition-metal complexes mapped by femtosecond X-ray powder diffraction, Freyer et al., The Journal of Chemical Physics 138, 144504 (2013); doi: 10.1063/1.4800223

X-ray spectroscopy station for offline sample pre-characterization at ELI-Beamlines, A. Zymaková, et al., Scientific Reports 13 (1), 17258 (2023)

Single-Shot Multi-keV X-Ray Absorption Spectroscopy Using an Ultrashort Laser-Wakefield Accelerator Source, Kettele et al., PRL, 123, 254801 (2019)

Other resources mentioned

For unit conversion: <https://sherwingroup.itst.ucsb.edu/internal/unit-conversion/>

X-ray database: <https://www.cxro.lbl.gov/> and https://henke.lbl.gov/optical_constants/filter2.html