Table-Top NEXAFS Spectrometer

Specifications

Source
- Wavelength: 1...20 nm
- Pulse duration: 6 ns
- Plasma shape: nearly spherical \( \Phi \sim 300 \, \mu m \)
- Repetition rate: 10 Hz

Spectrometer
- Spectral range: 1...5 nm
- Spectral resolution: \( \lambda/\Delta\lambda \sim 300 \)

Applications
- Chemical analysis of organic samples
- Investigation of absorption edges for various elements (C, N, O, Ca, K, Ti)
- Spectrally resolved transmission / reflectivity measurements (\( \lambda = 1...5 \) nm)
- XUV metrology
- Pump-probe experiments of dynamic processes

Additional information:
- Table-top lab system (alternative to synchrotron experiments)
- Extremely high surface sensitivity
- “Fingerprint” of molecules / elemental analysis
- Polychromatic measurement
- Especially suited for Carbon K-edge

Emission spectra of laser-produced XUV plasmas for different target gases. Broad-band and narrow-band radiation can be obtained.

Emission spectra of a Krypton plasma used as a broad-band emitter at the Carbon K-edge, without and with Polyimid sample.