

Illuminating Biomolecular Complexity: X-ray Free Electron Lasers and Vibrational Spectroscopies for Protein, Aggregates, and Cellular Architectures



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Type: **Contributed Talk** (≈20 minutes)

MS SPIDOC: Coherent diffractive imaging of proteins and viral capsids

Sunday, June 29, 2025 10:20 AM (20 minutes)

MS SPIDOC is an innovative sample delivery system tailored for single-particle imaging at X-ray Free-Electron Lasers (XFELs) and adaptable to most large-scale facility beamlines. It accommodates a wide range of biological samples, from small proteins to megadalton (MDa) complexes. Utilizing nano-electrospray ionization, ionic samples are m/z -filtered and structurally separated before reaching the interaction zone for imaging. We present the first proof-of-principle experiments demonstrating gas-phase small-angle X-ray scattering (SAXS) at the PETRA III synchrotron (DESY, Germany), highlighting the system's potential for advancing structural biology in the gas phase.

Scholarship eligibility

no

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