

Poster Presentations

[MS10-P25] BioMAX: The First MX Beamline at MAX IV

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BioMAX is one of the seven initial beamlines at the MAX IV facility presently under construction in Lund, Sweden. MAX IV with its two new storage rings (1.5 GeV and 3 GeV) will replace the existing facility including the MAX I, II and III storage rings. The 3 GeV ring where the BioMAX beamline will be situated will have exceptionally low emittance which will lead to an unprecedented brilliance for a synchrotron radiation source.

BioMAX will be a high-throughput macromolecular crystallography beamline. It will offer high brilliance, tuneable (0.5–2.5 Å wavelength), monochromatic X-rays with state-of-the-art performance in terms of low beam-divergence (0.1 mrad), high X-ray flux (~10¹³ photons/s) and variable beam size (10–100 µm), allowing work with both small crystals and large biomolecular complexes with concomitantly large unit cells. BioMAX is designed to be flexible and serve a broad range of needs for the life science community. We plan to complement the high-performance X-ray beam by a high level of user support, including rapid automated sample changing facilities, crystal alignment software, a large state-of-the-art area detector, cryo-cooling, on-the-fly data analysis and remote data collection operation. A fully equipped crystallization laboratory will be situated adjacent to the beamline. Our vision is that the proposed beamline will be outstanding in terms of reliability and stability, and that it will become the X-ray diffraction data collection beamline of choice for the majority of structural biology projects within the

Nordic Countries and Baltic region.

The design of the beamline optics is now being finalized. The experiment setup will be designed during 2013. Most of the components will be installed in 2015 when the 3 GeV storage ring is being commissioned. The beamline will open for users in 2016.