



Contribution ID : 29

Type : Oral

BioSAXS: The future of solution scattering at the Australian Synchrotron

Thursday, 25 November 2021 11:30 (15)

BioSAXS is one of the new beamlines to be constructed at the Australian Synchrotron within the BRIGHT program. The beamline is currently under construction and it is scheduled to phase into user operations in mid-late 2022. BioSAXS will be a high-flux ($\sim 5 \times 10^{14}$ ph/sec) small angle X-ray scattering beamline dedicated to all sorts of solution scattering including dispersions, gels and soft matter, covering a variety of disciplines from biology to chemistry and material sciences. The high flux of the beamline will provide enhanced data quality and kinetic resolution, allowing for time-resolved studies on the millisecond timescale, as well as the measurement of weak scatterers and low concentrations that wouldn't otherwise be possible to measure. The in-vacuum detector system at the end station will provide quick and highly automated camera changes, a q range of $\sim 0.0015 - 3 \text{ \AA}^{-1}$ and low background in collected data. The CoFlow, a pioneering development of the Australian Synchrotron, will be the primary autoloading device for high throughput experiments. Other sample environment options will include a stopped-flow and rheometer, temperature-controlled capillary stages, a shear cell as well as a versatile magnetic-array system, optimized for experiments on magnetic nanoparticles used in biomedical applications. The beamline's sample platform will also accommodate the installation of user equipment. The objective of this presentation is to demonstrate BioSAXS' final design and capabilities that will allow it to develop into a highly-automated and versatile beamline that can accommodate a wide-range of solution scattering experiments, complementing the existing SAXS/WAXS beamline to ensure the world-leading capabilities of the SAXS offering at the Australian Synchrotron.

Level of Expertise

Expert

Presenter Gender

Woman

Pronouns

Which facility did you use for your research

Australian Synchrotron

Students Only - Are you interested in AINSE student funding

Do you wish to take part in the Student Poster Slam

Condition of submission

Yes

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Session Classification : Instruments & Techniques

Track Classification : Instruments & Techniques