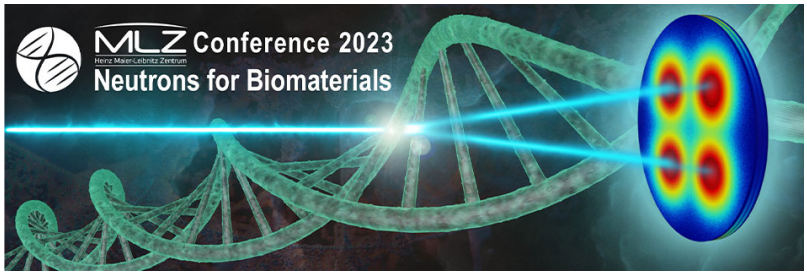

Contribution ID: **11** Type: **Poster**

KWS-X: A SAXS/WAXS Laboratory Beamline at JCNS-MLZ

Tuesday, 23 May 2023 17:20 (1h 10m)

The new customized SAXS/WAXS instrument from XENOCS have be installed in the JCNS SAXS-Lab1 from the end of 2021. As a young member of our small angle scattering instrument by using X-ray as beam, the new instrument is equipped with a high flux metal-jet source and a moveable Eiger 2R4M SAXS detector. With additional 4-axis motorized WAXS detector and Bonse-Hart USAXS the scattering vector q can cover a wide area from 0.0002 to 7 Å-1 corresponding to the structure from few Angstroms to Micrometers. Compared to other instruments, it also comprises a large sample environment station that can be used with ambient pressure conditions. A large number of sample environmental accessories make it possible to perform experiments at temperatures from -150oC to 1000oC, under shear, tensile, SEC-SAXS, RheoSAXS etc. The design and the plenty of sample environments make the instrument a powerful research tool for biomaterials structure investigation. It is a powerful complementary tool for our neutron scattering instruments.

Some typical applications at soft matter or biomaterials area include:
• Structure and interactions of protein, nucleic acid
• In-situ monitoring of protein conformational changes, protein aggregation
• Hierarchical structures of biomaterials, e.g. collagen, chitosan
• Drug delivery systems based on nanoparticles, vesicles or liposomes
• Characterizing monoclonal antibody-protein antigen interactions
• Structure and interaction of polymers, colloids, hydrogels, surfactants and micellers
• Determine the phase of self-assembled block-copolymers or liquid crystalline polymers
• Test the tensile properties of polymer or follow the degree of crystallinity
• Monitor the size, shape and stability of fat globules in dairy upon aging, drying and digestion
• Structure and size of polysaccharides and proteins in hydrated systems

References

[1] https://mlz-garching.de/saxs-lab

Primary author: Dr WU, Baohu (JCNS-MLZ, FZ Juelich)

Presenter: Dr WU, Baohu (JCNS-MLZ, FZ Juelich)

Session Classification: Poster session

Track Classification: Peptides, polymers and gels