



Contribution ID: 114

Type: **Poster**

Upgrade of the KWS-2 SANS instrument for increased performance and beam-time efficiency

Friday, 9 December 2022 16:35 (25 minutes)

KWS-2 is a classical small angle neutron diffractometer where the pinhole mode with different neutron-wavelengths and detector distances can be combined with focusing mode with MgF₂ lenses to reach a wide Q-range between 2×10^{-4} and 1 \AA^{-1} . Upgrades in the detection system and sample environment are currently in progress. A wide-angle detection option is currently in test and optimization and will enable measurements over an extended Q-range up to 2 \AA^{-1} , which will be beneficial for semi-crystalline materials and small biological morphologies. The high neutron flux determined the optimization of the measurement procedure for optimizing the beam-time use. A new versatile sample positioning system in beam including a thermostated multi-position carousel, robotics elements and a pool of sample cuvettes are currently in installation at the sample position of the instrument. This will enable the continuous supply of the instrument with samples and the possibility to schedule measurements on similar samples or effects in a common long experimental session. Finally, a new size exclusion chromatography setup with in-situ UV-Vis spectroscopy, is currently in construction for providing the instrument with samples of a desired quality, which will improve the performance of KWS-2 for studying aggregation prone proteins and will allow for highly individualized studies of biophysics and soft matter samples. The new upgrades in progress at the instrument will be presented in details.

Primary authors: RADULESCU, Aurel (Forschungszentrum Jülich GmbH, Jülich Centre for Neutron Science at Heinz Maier-Leibnitz Zentrum (MLZ)); KANG, Jia-Jhen (Jülich Centre for Neutron Science (JCNS) at Heinz Maier-Leibnitz Zentrum (MLZ)); Dr APPAVOU, Marie-Sousai (Jülich Centre for Neutron Science (JCNS) at Heinz Maier-Leibnitz Zentrum (MLZ), Forschungszentrum Jülich GmbH)

Presenter: RADULESCU, Aurel (Forschungszentrum Jülich GmbH, Jülich Centre for Neutron Science at Heinz Maier-Leibnitz Zentrum (MLZ))

Session Classification: Poster Session

Track Classification: Neutron Methods