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Small Angle Neutron Scattering Capability at ANSTO

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The ANSTO Lucas Heights campus is home to three world-class small angle neutron scattering (SANS) instruments: Bilby, a time-of-flight SANS instrument [1], Kookaburra, an Ultra-Small Angle Neutron scattering instrument [2] and Quokka, a monochromatic SANS instrument [3]. Together they cover the structure of materials from 1 nm to > 20 microns. As well as recent scientific highlights, we here outline the updates from the group since the last ANSTO user meeting, notably:

- The replacement of our lab-based small angle X-ray instrument with a state-of-the-art instrument along with a range of dedicated sample environments, currently being procured and due for installation early 2022.
- The new rheometer for in-situ measurements on the three neutron instruments.
- Our recently developed GiSANS setup, funded by the National Synchrotron Radiation Research Center.

[1] A. Sokolova, A. E. Whitten, L. de Campo, J. Christoforidis, A. Eltobaji, J. Barnes, F. Darmann and A. Berry, Performance and characteristics of the BILBY time-of-flight small-angle neutron scattering instrument, *J Appl Crystallogr*, 2019, 52, 1-12.

[2] Rehm, C.; Campo, L. d.; Br  l  , A.; Darmann, F.; Bartsch, F.; Berry, A., Design and performance of the variable-wavelength Bonse–Hart ultra-small-angle neutron scattering diffractometer KOOKABURRA at ANSTO. *J Appl Crystallogr*, 2018, 51 (1), 1-8.

[3] K. Wood, J. P. Mata, C. J. Garvey, C. M. Wu, W. A. Hamilton, P. Abbeywick, [...] and E. P. Gilbert, QUOKKA, the pinhole small-angle neutron scattering instrument at the OPAL Research Reactor, Australia: design, performance, operation and scientific highlights, *J Appl Crystallogr*, 2018, 51, 294-314.

Level of Expertise

Experienced Researcher

Presenter Gender

Woman

Pronouns

She/Her

Which facility did you use for your research

Australian Centre for Neutron Scattering

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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