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Update on the SPATZ Time-of-Flight Neutron Reflectometer at the OPAL Research Reactor

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Neutron reflectometry is a powerful technique for studying the structure of surfaces and interfaces at the nanometer. The useful properties of neutrons allows for isotopic contrast variation in multi-component systems and being able to investigate phenomena under a wide variety of sample environments. At the OPAL Research Reactor there is currently one operating neutron reflectometer – PLATYPUS, however demand is sufficient that a second is needed. In September 2015, an agreement was signed between HZB and ANSTO to transfer the V18 'BioRef' time-of-flight neutron reflectometer [1, 2], previously situated at the 10 MW BER-II Research Reactor, to the OPAL Research Reactor. During 2016, a joint team of ANSTO and HZB personnel carefully disassembled BioRef and packed it into shipping containers for transport to ANSTO. BioRef arrived at ANSTO in early 2017 and is now known as SPATZ (German for Sparrow) and is the 15th neutron-scattering instrument at OPAL.
SPATZ has a vertical sample geometry, which complements PLATYPUS with its horizontal sample geometry. The vertical sample geometry will allow for use of sample environments which cannot be currently used on PLATYPUS due to geometry constraints and allows for wide-angle diffraction from multilayers and lamellar stacks. SPATZ will also be equipped for simultaneous infra-red spectroscopy and reflectometry experiments. The instrument views the OPAL cold neutron source (CNS) by taking the end position of the CG2B guide, which has recently been installed.
SPATZ started hot commissioning in November 2018 and intends to start user experiments by the end of 2019. This presentation will provide an overview of the project, its current status, and future direction.
[1] M. Strobl et al., Rev. Sci. Instrum. 82, 055101 (2011)
[2] M. Trapp et al., Rev Sci. Instrum. 87, 105112 (2016)

Speakers Gender

Male

Travel Funding

No

Level of Expertise

Experienced Researcher

Do yo wish to take part in the poster slam

No

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