
Advancing the reflectometry cause at ANSTO - updates and upgrades to the time-of-flight Platypus Neutron Reflectometer.

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Since the first suite of neutron scattering instruments was commissioned in 2008 the Australian Nuclear Science and Technology Organisation (ANSTO) has invested in instrumentation for the analysis of thin interfacial films. The horizontal time-of-flight reflectometer, *Platypus* [1], has now been joined by an X-ray reflectometer and a variable angle spectroscopic imaging ellipsometer. The high quality science possible on these complementary instruments has led to a large oversubscription rate on *Platypus*.

Here, we outline the key developments and upgrades we have made to *Platypus* that have led to this success. These include the development of event mode acquisition for studying kinetic processes, new sample environments (confinement cell, vapour delivery systems), as well as projects to upgrade its performance by installing new collimation systems and detectors.

[1] James, M.; Nelson, A.; Holt, S.; Saerbeck, T.; W.A. Hamilton & Klose, F. (2011), 'The multipurpose time-of-flight neutron reflectometer "Platypus" at Australia's OPAL reactor', *Nuclear Instruments and Methods in Physics Research A*, **632**, 112-123