

Potential spectrometers for the hot neutron source at ACNS

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The ACNS has a number of spectrometers that are successfully operated in the cold and thermal neutron regime. Interestingly the OPAL reactor is also designed with a position available for a hot source in the reflector vessel, and with two beam-ports available, HB1 and HB2, to deliver hot neutrons. A wide range of studies that will be achievable due to the larger range covered in $Q-\omega$ space if the hot source is built are highlighted. These studies range from basic sciences, involving magnetism and superconductivity, crystal fields, molecular studies, high pressure studies etc., to applied work involving, for example, energy and electronic materials, and catalytic processes. An energy transfer range from 5 meV to 500 meV and above, and a momentum transfer range from 0.5 \AA^{-1} to 30 \AA^{-1} is indeed possible given the type of instrument designed. Here two types of filter spectrometers are discussed as potential candidates along with a novel type of time of flight spectrometer design that may allow fluxes to be obtained comparable to similar spectrometers on spallation neutron sources.

Speakers Gender

Male

Level of Expertise

Expert

Do you wish to take part in the poster slam

Primary author(s) : STAMPFL, Anton (Australian Nuclear Science and Technology Organisation); Prof. STRIDE, John (UNSW)

Presenter(s) : STAMPFL, Anton (Australian Nuclear Science and Technology Organisation)

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