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Polarised neutron capabilities at ACNS

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The Australian Centre for Neutron Scattering offers neutron spin filters for six instruments (WOMBAT, PELICAN, QUOKKA, PLATYPUS, TAIPAN and SIKA), using a combination of supermirrors and polarised ^{3}He cells. The infrastructure required to use ^{3}He spin filters is particularly complicated, and a clear understanding of this is pivotal to designing and carrying out successful experiments which take advantage of polarised neutron scattering. Such experiments typically investigate systems where detailed study of magnetic effects or the separation of coherent and incoherent scattering is needed.

Here, the capabilities for polarised neutron scattering experiments for each of these instruments are summarised, including compatible sample environments such as cryostats, magnets and sample changers, and a discussion of key considerations when planning experiments using polarised neutrons. A newly-acquired 7 tesla compensated vertical magnet will also be described, and some initial results for its use on the SANS instrument QUOKKA will be presented. Finally, some possible future directions to further develop the polarised neutron capabilities at ACNS are outlined.

Speakers Gender

Male

Level of Expertise

Early Career <5 Years

Do you wish to take part in the poster slam

No

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