

Neutron Science in the 21st Century: New facilities and Opportunities at ORNL

A half-century has passed since the development of neutron diffraction by Wollan and Shull, and the subsequent pioneering work of Brockhouse on inelastic neutron scattering. In the interval neutron scattering has been established as an indispensable tool for research on almost any imaginable material. Soon broad new opportunities will exist for researchers in the US and elsewhere to utilize neutron scattering techniques. A few years from now the Spallation Neutron Source (SNS) under construction at ORNL will be the world's most powerful source of pulsed neutrons. In addition, upgrades to the High Flux Isotope Reactor (HFIR) and its neutron scattering facilities will provide world-class instrumentation that is complementary to SNS. In this presentation I will report briefly on the current status of the SNS and the planned instruments, and give a more detailed description of the newly installed and pending instrumentation at the HFIR. Some examples will serve to illustrate the expected scientific impact of the new spectrometers.