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Neutron Imaging at the High Flux Isotope Reactor and Spallation Neutron Source

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Abstract

In the past several years, the CG-1D neutron imaging facility at the High Flux Isotope Reactor (HFIR), Oak Ridge National Laboratory (ORNL), has successfully provided unique insights in many research areas including energy storage, additive manufacturing, plant physiology, archeology, transportation, geology, etc. It has been recognized as a key neutron imaging user facility in North America by the neutron imaging community. In this talk, recent scientific results, instrumentation development, and new software will be presented. Additionally, at the Spallation Neutron Source (SNS), a dedicated time-of-flight (TOF) neutron imaging beamline, the Versatile Neutron Imaging Instrument (VENUS), is under construction. This new instrument is expected to provide new capabilities, such as Bragg-edge and resonance imaging, that utilize the intrinsic capabilities of a pulsed source. In this presentation, an overview of the VENUS design and current development in TOF imaging will also be discussed.

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Primary author: Dr ZHANG, Yuxuan (Oak Ridge National Laboratory)

Co-authors: Dr BILHEUX, Hassina (Oak Ridge National Laboratory); Dr BILHEUX, Jean (ORNL - SNS); Dr LIN, Jiao (Oak Ridge National Lab); Dr SANTODONATO, Louis (Advanced Research Systems, Inc.); CORNWELL, Paris (Oak Ridge National Lab); STRINGFELLOW, Erik (Oak Ridge National Lab)

Presenter: Dr ZHANG, Yuxuan (Oak Ridge National Laboratory)

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