

2020 Review of the Instrument Suite for Chemical Spectroscopy at the Spallation Neutron Source (SNS)

Charge to the Review Panel:

To provide the Associate Laboratory Director (ALD) and management of the Neutron Sciences Directorate (NScD) with a review of the chemical spectroscopy instrument suite at SNS, particularly considering the current capabilities and future needs for neutron spectroscopy in US research.

The review should consider:

- The current status of the VISION, BASIS and NSE beamlines in terms of instrument technical capabilities, considering the wider instrument suite at SNS and HFIR (especially overlaps within and between instrument capabilities) and comparison of performance and productivity with those at other national and international neutron facilities
- The ability of each beamline to meet the day-to-day needs of users for data collection, reduction, and analysis and future software planning
- The current portfolio of science and business case for each instrument of the suite (e.g. demand; breadth of scientific use; overall impact; mission needs and agency support; and/or industrial use)
- The future development and use of the instrument suite for chemical spectroscopy, and of inelastic scattering science at SNS and HFIR. This may include, but is not limited to:
 - The future science needs for the instruments, and the community base for these
 - Necessary technical developments, critical issues/needs or new instrument capabilities (including modifications to existing instruments or new instruments), including:
 - Instrument upgrades (neutron optics, detectors, data acquisition, etc.)
 - Capabilities/needs for data analysis or modelling
 - Capabilities/needs for sample environment
 - Capabilities/needs for sample preparation and characterization
- Other developments or provision which will enhance the capacity or effectiveness of the chemical spectroscopy instruments and their science programs at SNS
- Evaluation of the strategic visions of the beamlines, alignment with ORNL and DOE missions and effectiveness of process to implement vision
- Any other comments the panel wish to make to the NScD Associate Laboratory Director

***2020 Review of the Instrument Suite for Direct Geometry Spectroscopy
at the Spallation Neutron Source (SNS)***

Charge to the Review Panel:

To provide the Associate Laboratory Director (ALD) and management of the Neutron Sciences Directorate (NScD) with a review of the direct geometry spectroscopy instrument suite at SNS, particularly considering the current capabilities and future needs for neutron spectroscopy in US research.

The review should consider:

- The current status of the CNCS, HYSPEC, SEQUOIA and ARCS direct geometry spectrometers in terms of instrument technical capabilities, considering the wider instrument suite at SNS and HFIR (especially overlaps within and between instrument capabilities) and comparison of performance and productivity with those at other national and international neutron facilities
- The ability of each beamline to meet the day-to-day needs of users for data collection, reduction, and analysis and future software planning
- The current portfolio of science and business case for each instrument of the suite (e.g. demand; breadth of scientific use; overall impact; mission needs and agency support; and/or industrial use)
- The future development and use of the instrument suite for direct geometry spectroscopy, and of inelastic scattering science at SNS and HFIR. This may include, but is not limited to:
 - The future science needs for the instruments, and the community base for these
 - Necessary technical developments, critical issues/needs or new instrument capabilities (including modifications to existing instruments or new instruments), including:
 - Instrument upgrades (neutron optics, detectors, data acquisition, etc.)
 - Capabilities/needs for data analysis or modelling
 - Capabilities/needs for sample environment
 - Capabilities/needs for sample preparation and characterization
- Other developments or provision which will enhance the capacity or effectiveness of the direct geometry instrument suite at SNS
- Evaluation of the strategic visions of the beamlines, alignment with ORNL and DOE missions and effectiveness of process to implement vision
- Any other comments the panel wish to make to the NScD Associate Laboratory Director.

***2020 Review of the Instrument Suite for Triple-Axis Spectroscopy
at the High Flux Isotope Reactor (HFIR)***

Charge to the Review Panel:

To provide the Associate Laboratory Director (ALD) and management of the Neutron Sciences Directorate (NScD) with a review of the triple-axis spectroscopy instrument suite at HFIR, particularly considering the current capabilities and future needs for neutron spectroscopy in US research.

The review should consider:

- The current status of the HB-1A, HB-1, HB-3, and CTAX triple-axis spectrometers in terms of instrument technical capabilities, considering the wider instrument suite at SNS and HFIR (especially overlaps within and between instrument capabilities) and comparison of performance and productivity with those at other national and international neutron facilities
- The ability of each beamline to meet the day-to-day needs of users for data collection, reduction, and analysis and future software planning
- The current portfolio of science and business case for each instrument of the suite (e.g. demand; breadth of scientific use; overall impact; mission needs and agency support; and/or industrial use)
- The future development and use of the instrument suite for triple-axis spectroscopy, and of inelastic scattering science at SNS and HFIR. This may include, but is not limited to:
 - The future science needs for the instruments, and the community base for these
 - Necessary technical developments, critical issues/needs or new instrument capabilities (including modifications to existing instruments or new instruments), including:
 - Instrument upgrades (neutron optics, detectors, data acquisition, etc.)
 - Capabilities/needs for data analysis or modelling
 - Capabilities/needs for sample environment
 - Capabilities/needs for sample preparation and characterization
- Other developments or provision which will enhance the capacity or effectiveness of the triple-axis instrument suite at HFIR
- Evaluation of the strategic visions of the beamlines, alignment with ORNL and DOE missions and effectiveness of process to implement vision
- Any other comments the panel wish to make to the NScD Associate Laboratory Director