

1 A Cold Neutron Depth Profiling instrument (not shown) for quantitative profiling of subsurface impurities currently at this site will be moved to another position. Shown is MACS, a triple axis cold neutron crystal spectrometer under construction with double focusing monochromator and multiple crystal analyzer/detectors that can be flexibly configured for several energies simultaneously or for high throughput at one energy.

2 BT-7 Triple Axis Spectrometer with fixed incident energy for measurements of excitations and structure.

3 BT-8 Residual Stress Diffractometer optimized for depth profiling of residual stress in large components.

4 BT-9 Triple Axis Crystal Spectrometer for measurements of excitations and structure.

5 Thermal Column a very well-thermalized beam of neutrons used for radiography, tomography, dosimetry and other experiments.

6 BT-1 Powder Diffractometer with 32 detectors; incident wavelengths of 0.208 nm, 0.154 nm, and 0.159 nm, with highest resolution of $\delta d/d = 8 \times 10^{-4}$.

7 BT-2 Triple Axis Crystal Spectrometer with polarized beam capability for measurement of magnetic dynamics and structure.

8 BT-4 Filter Analyzer Neutron Spectrometer with cooled Be/Graphite filter analyzer for chemical spectroscopy.

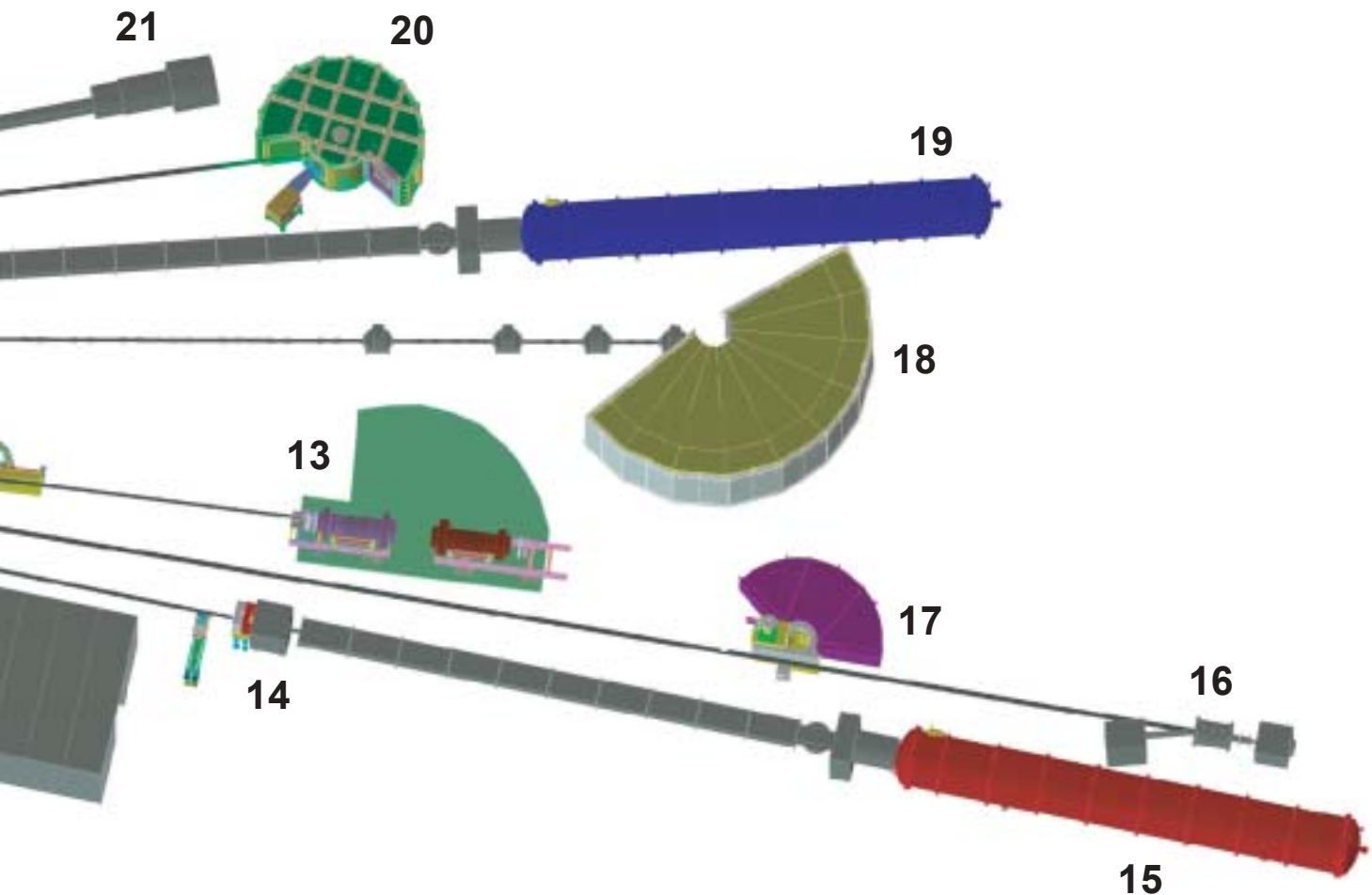
9 BT-5 Perfect Crystal Diffractometer SANS small angle neutron scattering instrument for microstructure on the 10^4 nm length scale, sponsored by the National Science Foundation and NIST, part of the Center for High Resolution Neutron Scattering (CHRNS).

10 NG-7 Horizontal Sample Reflectometer allows reflectivity measurements of free surfaces, liquid vapor interfaces, as well as polymer coatings.

11 Neutron Interferometry and Optics Station with perfect silicon interferometer; vibration isolation system provides exceptional phase stability and fringe visibility.

12 Spin Polarized Triple Axis Spectrometer (SPINS) using cold neutrons with position sensitive detector capability for high resolution studies — part of CHRNS.

NIST Center for Neutron Research Layout



13 Spin Echo Spectrometer offering neV energy resolution, based upon Jülich design, sponsored by NIST, Jülich and ExxonMobil — part of CHRNS.

14 Prompt Gamma Activation Analysis cold neutron fluxes allow detection limit for H of $1 \mu\text{g}$ to $10 \mu\text{g}$. Focused beams are available for profiling.

15 NG-7 30 m SANS for microstructure measurements sponsored by NIST, ExxonMobil, and the University of Minnesota.

16 Neutron Physics Station offering three cold neutron beams having wavelengths of 0.5 nm, 0.9 nm, and “white” that are available for fundamental neutron physics experiments.

17 Fermi Chopper hybrid time-of-flight (TOF) Spectrometer for inelastic scattering with incident wavelengths between 0.23 nm and 0.61 nm chosen by focusing pyrolytic graphite crystals. A simple Fermi chopper pulses the beam.

18 Disk Chopper TOF Spectrometer a versatile time-of-flight spectrometer, with beam pulsing and monochromatization effected by 7 disk choppers. Used for studies of dynamics in condensed matter, including macromolecular systems — part of CHRNS.

19 NG-3 30 m SANS for microstructure measurements sponsored by the National Science Foundation and NIST — part of CHRNS.

20 Backscattering Spectrometer high intensity inelastic scattering instrument with energy resolution $< 1 \mu\text{eV}$, for studies of motion in molecular and biological systems — part of CHRNS.

21 NG-1 8 m SANS for polymer characterization being modified to 10 m and to be made available for CHRNS use along with its current use by the NIST Polymers Division.

22 Vertical Sample Reflectometer instrument with polarization analysis capability for measuring reflectivities down to 10^{-8} to determine subsurface structure.

23 Cold Neutrons for Biology and Technology vertical sample reflectometer, to be built with polarization analysis capability for measuring reflectivities down to 10^{-8} . It will have a position-sensitive detector for measuring off-specular reflections.