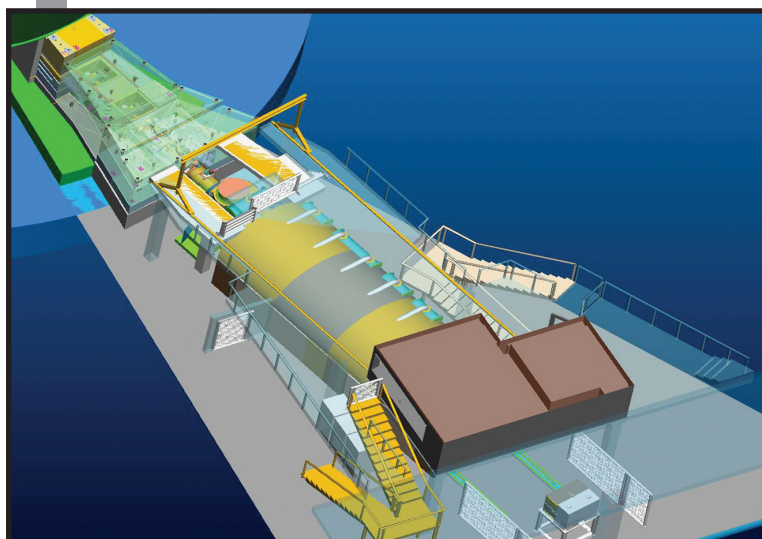


EXTENDED Q-RANGE SMALL-ANGLE SCATTERING DIFFRACTOMETER

The extended q-range small-angle neutron scattering (EQ-SANS) diffractometer is designed to cover an unprecedented range in Q space. It will also have very high intensity and wavelength resolution. This instrument is optimized for studying complex



systems that require data collection at low and high Q simultaneously. The EQ-SANS diffractometer will have a much broader Q range than the best existing instruments and will be a factor of 10 more intense than the best existing instruments at same Q range and ΔQ .

SPECIFICATIONS

Source-sample distance	14 m
Bandwidth	3-4.3 Å
Moderator	coupled supercritical hydrogen
Integrated flux on sample	$\sim 10^7 - 10^9$ n/cm ² /s
Q range	$0.004 \text{ \AA}^{-1} < Q < 10 \text{ \AA}^{-1}$

Low-angle detector

Sample-detector distance	1 – 8 m
Detector size	1 m • 1 m
Detector resolution	8 mm

High-angle detector

Sample-detector distance	1 m
Angular coverage	$\sim 35^\circ - 150^\circ$
Detector resolution	8 mm

RECENT SIGNIFICANT EVENTS

Instrument Construction

- All major design work is completed.
- Procurement of all baseline-funded components is under way.
- The first section of the guide is installed.
- Installation of poured-in-place shielding is under way.

Instrument Science

- Community outreach: coordinating the Biomaterials and Neutrons (BioMan) session in the 2005 American Vacuum Society Conference in Boston.

The EQ-SANS diffractometer will be valuable in the study of

- Biological macromolecular structures on multiple length scale
- Polymer sciences
- Material sciences

FOR MORE INFORMATION, CONTACT EQ-SANS STAFF

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www.sns.gov/users/instrument_systems/instruments/elastic/qrange.shtml

