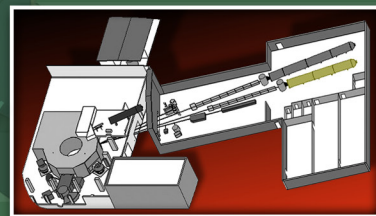


INSTRUMENT

BEAM LINE

CG-3

HIGH FLUX ISOTOPE REACTOR



BIO-SANS – BIOLOGICAL SMALL-ANGLE NEUTRON SCATTERING INSTRUMENT

The Bio-SANS instrument is optimized for analysis of the structure, function, and dynamics of complex biological systems. It is the cornerstone of the Center for Structural Molecular Biology (CSMB) at Oak Ridge National Laboratory. The Bio-

SANS instrument is supported by additional CSMB capabilities that include development of advanced computational tools for neutron analysis and modeling, as well as biophysical characterization and x-ray scattering infrastructure. A dedicated biological sample preparation laboratory is located adjacent to the instrument.



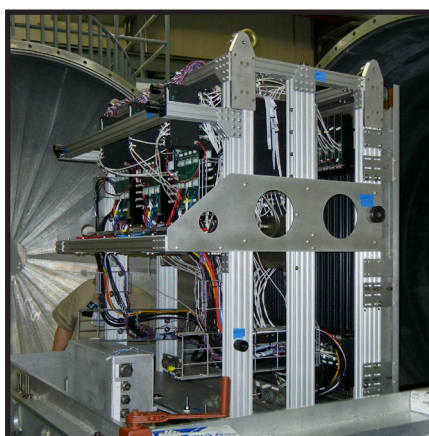
Detector tanks for the SANS instruments at HFIR. The Bio-SANS detector is on the left.

SPECIFICATIONS

Wavelength	$6 < \lambda < 25 \text{ \AA}$
Wavelength resolution	$\Delta\lambda / \lambda = 9\text{--}45\%$
Q range	$0.0009\text{--}0.8 \text{ \AA}^{-1}$
Sample-to-detector distance	1.1–15.3 m
Detector	2-D linear position-sensitive detector
Detector size	1 x 1 m ²
Detector resolution/pixels	192 x 256
Max count rate	1 MHz

APPLICATIONS

- Bio-macromolecules and their assemblies
 - Protein complexes
 - Protein/DNA complexes
 - Lipids
 - Viruses
 - Carbohydrates
- Hierarchical biological structures
 - Gels
 - Fibers and fibrils
 - Vesicles
 - Microemulsions
- Membrane diffraction
- Biomimetic and bio-inspired systems



CG-3 Detector Array

CENTER CAPABILITIES

X-ray scattering
Light scattering
Computational tools
Bio-support lab
Protein production + analysis
Bio-deuteration lab

Status: Available to users



<http://www.csmb.ornl.gov>



FOR MORE INFORMATION, CONTACT

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