Small and Wide Angle X-ray Scattering Beamline (SWAXS)



Mesoscopic length scale (1-100 nm), covering wide range of fields, including alloys, polymers, macromolecules, emulsions, porous materials, nanoparticles, soft-matter etc.









Instrument parameters:

Source	1.5 Tesla bending magnet based
	synchrotron X-ray
Operational mode	Monochromatic X-ray (wavelength tunable by Double Crystal Monochromator)
Energy range	5 KeV – 20 KeV (Preferred 12 KeV for present experiments)
Angular acceptance of beam	2.0 mrad (Horizontal) X 0.13 mrad (Vertical)
Focusing optics	Toroidal Mirror of size 1500 mm X 60 mm with 60 nm Pt and 5 nm Rh coating on Silicon substrate
Detectors	2-Dimension online image plate (For SAXS measurements) Linear position sensitive gas detector (For WAXS measurements)
q-range	0.05 – 3.5 nm ⁻¹ (SAXS with 2- Dimension detector) and >2.0 nm ⁻¹ (WAXS with 1D detector)



2D SAXS profiles at 12 KeV X-ray (a) Ordered porous silica (b) Spraydried silica micro-granules and (c) Anisotropic scattering from mice bone