PRINCIPLE INFORMATION

SAXS/WAXS techniques provide comprehensive, non-destructive structural analysis spanning from crystal phases and atomic structure (WAXS) to nanoscale architecture (1–100 nm, SAXS). Designed as a versatile workstation, the beamline accommodates diverse sample forms including liquids, gels, powders, films, fibers, and solids. It enables the observation of real-time evolution under in-situ conditions (e.g., thermal or mechanical stress), providing essential insights into structure-property relationships across a wide range of material classes.

TECHNICAL SPECIFICATION

Category	Specification
Beamline	BL1.3W: SAXS/WAXS
Photon Energy Range	6–9 keV (Optimized at 9 keV)
Photon Flux	$2x10^9$ ph/s/100mA
Beam Size	1 X 1 mm²
Detectors	• Rayonix SX165 CCD • Rayonix LX170HS CCD
Sample Environment	Robot Sample Changer: Automated, high-throughput measurement Tensile Stage: Max force 500 N Heating/Cooling Stage: -100°C to 270°C

SDGs SUPPORT



Serves as a premier training facility for graduate students and researchers, fostering advanced scientific expertise and technical skills in X-ray scattering.



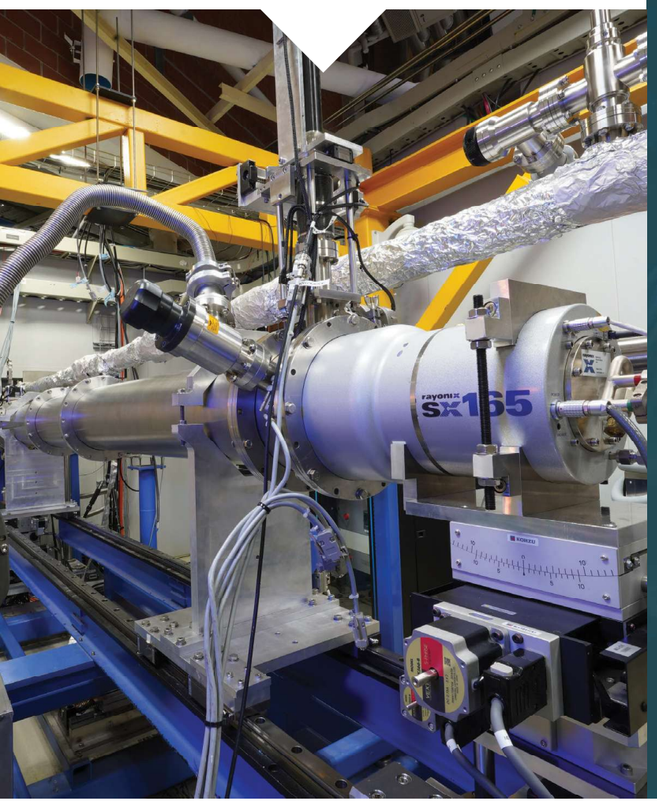
Accelerates research on energy storage (batteries), supercapacitors, and next-generation solar energy materials through structural characterization.

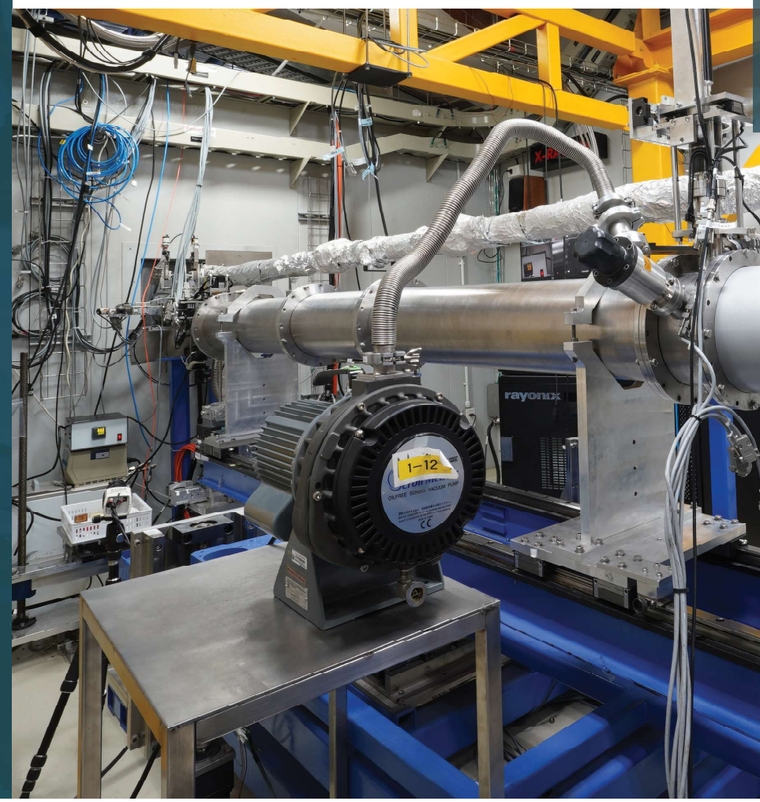


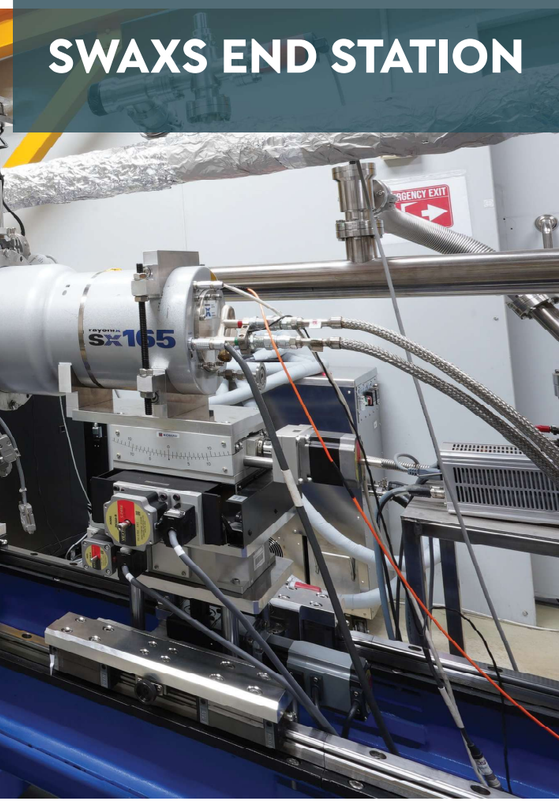
Provides essential R&D infrastructure to drive innovation in advanced materials, semiconductors, and high-performance polymers.



Supports the development of sustainable materials, such as biodegradable polymers and eco-friendly coatings, by analyzing their degradation and structural stability.



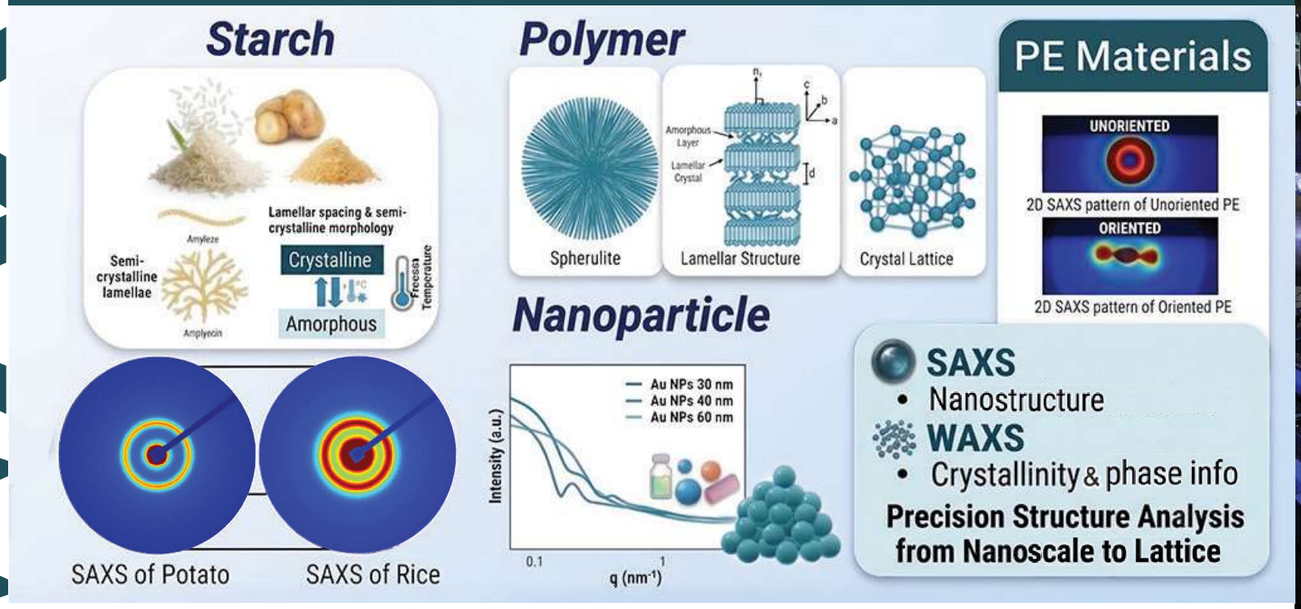




SWAXS END STATION

WAXS

KEY APPLICATION



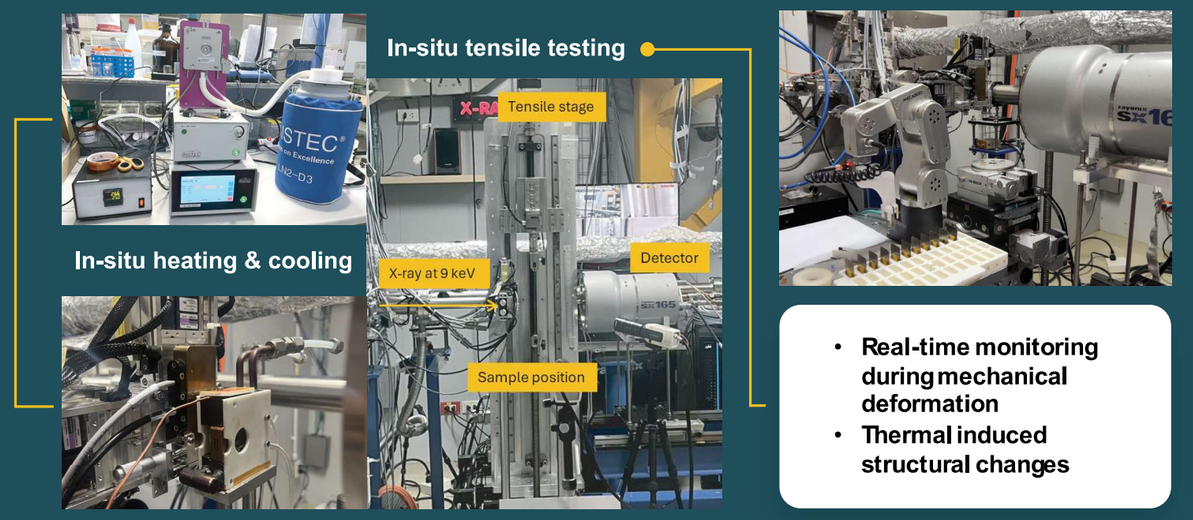


SMALL/WIDE ANGLE X-RAY SCATTERING

(SWAXS)

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In-situ SAXS/WAXS



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