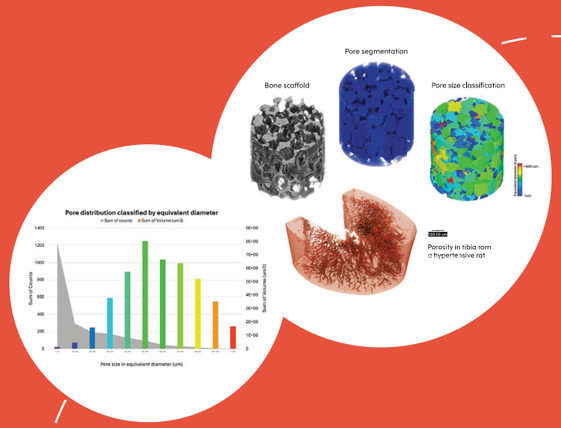
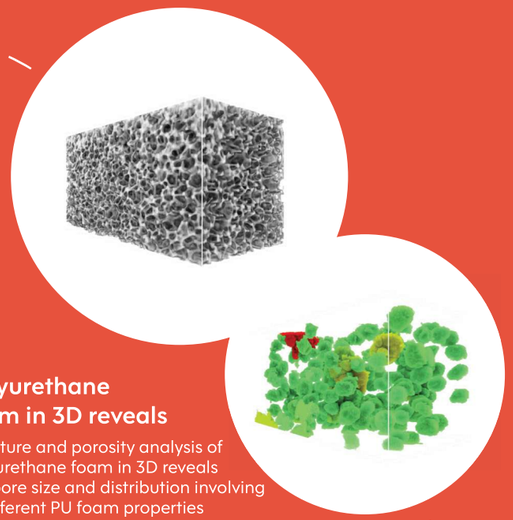
XTM

RESULT/APPLICATION



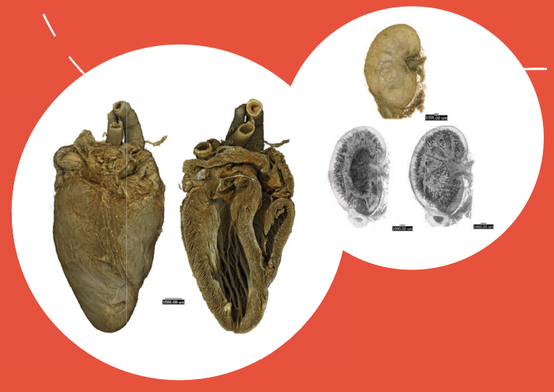
bone cell cultivation

Research of osteoporosis and the development of scaffolding structures with hierarchical porosity for bone cell cultivation.



polyurethane foam in 3D reveals

Structure and porosity analysis of polyurethane foam in 3D reveals the pore size and distribution involving in different PU foam properties



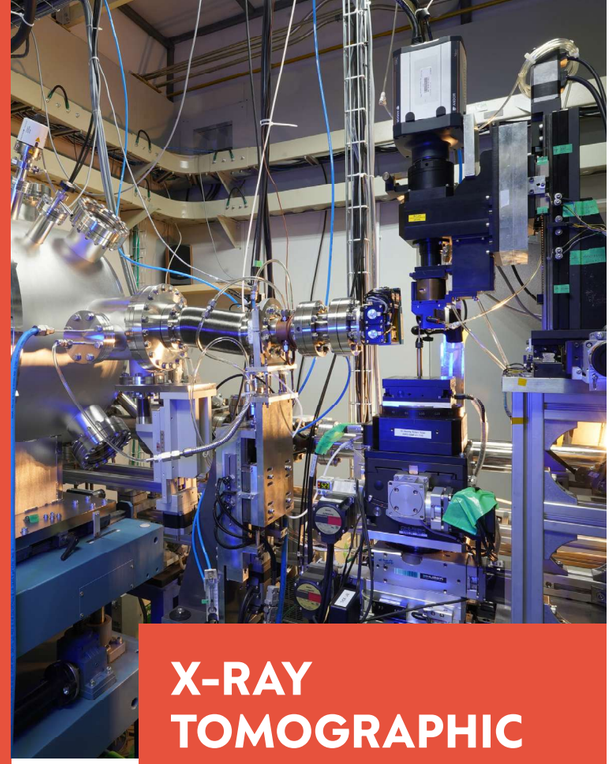
Microstructure of heart and kidney

Microstructure of heart and kidney dysfunction in the animal models under diverse disease-induced conditions.



Porosity characterization

Porosity characterization in roasted coffee beans at different temperatures for better aroma and flavors.



X-RAY TOMOGRAPHIC MICROSCOPY

(XTM)

CONTACT

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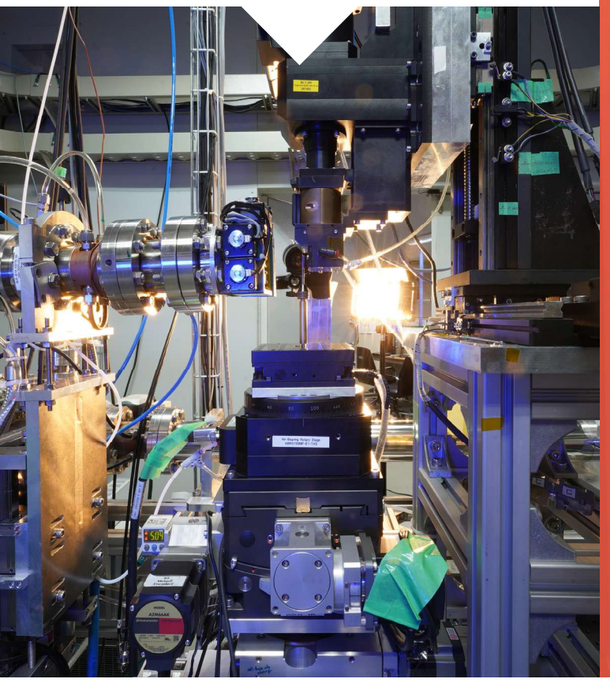
Siam Photon

www.slri.or.th

SYNCHROTRON LIGHT RESEARCH INSTITUTE
(PUBLIC ORGANIZATION)

PRINCIPLE INFORMATION

Synchrotron Radiation X-ray Tomographic Microscopy (SRXTM) is an advanced imaging technique that enables non-destructive, three-dimensional visualization of internal structures within a sample. It works by acquiring multiple X-ray projections at different angles and reconstructing them into cross-sectional slices, forming a detailed 3D image. The use of synchrotron radiation provides a highly intense and partially parallel X-ray beam, which significantly improves imaging speed and spatial resolution. This makes SRXTM ideal for studying fine structural details in materials, biological specimens, and complex systems with exceptional clarity.



TECHNICAL SPECIFICATION

Category	Specification
Beamline	BL1.2W: XTM
Photon Energy Range	Filtered white beam mode or Monochromatic beam mode (5 – 15 keV)
Photon Flux (Full beam)	>1E+11 ph/s/150 mA at 10 keV
X-ray Beam Size	8 mm (H) × 4 mm (V) at sample position (34 m from source)
X-ray Imaging System	Scintillator: $CdWO_4$, YAG:Ce, LSO/Tb

SDGs SUPPORT



Biology & Medicine: High-resolution imaging of tissues, bones, and biomaterials for structural and pathological studies.



Materials Science: Characterization of microstructures, porosity, and fracture mechanisms in metals, ceramics, and composites.



Cultural Heritage: Non-invasive examination of artifacts, fossils, and historical objects without damaging them.



Engineering & Manufacturing: Quality control of advanced components, additive manufacturing parts, and failure analysis.



Geoscience: Analysis of rock porosity, mineral distribution, and fossil structures.

XTM END STATION

