ESRF

Experiment title:

μ-Small-Angle X-Ray Scattering on PTMS Spherulites

Experiment number:

SC162

Beamline:	**Date of experiment:**	**Date of report:**
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Shifts:	**Local contact(s):**	*Received at ESRF:*
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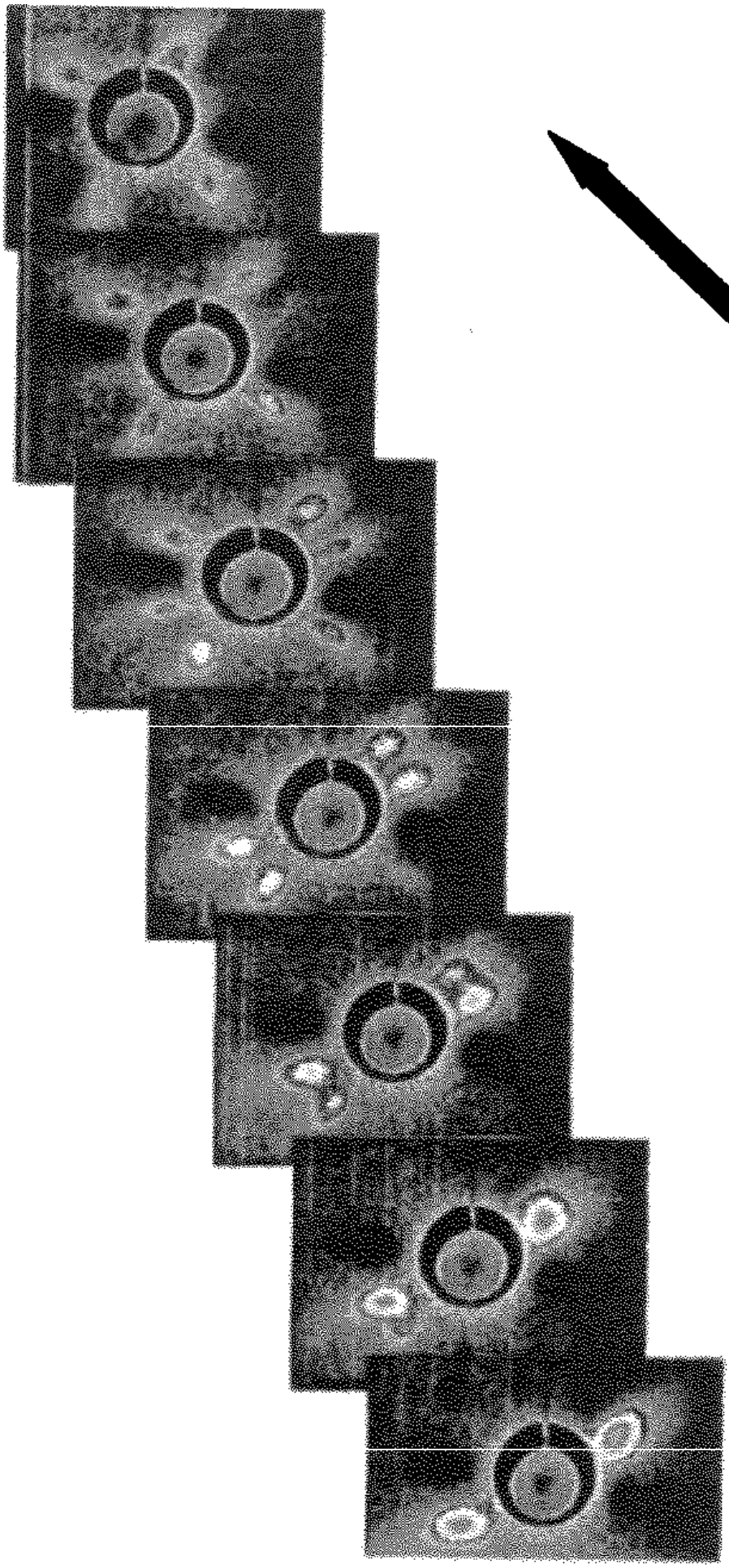
Report:

X-ray small-angle scattering (SAXS) patterns were obtained from a spherulitic PTMS sample (poly(tetramethyl-p-silphenyle-siloxane)) using a *2* micron glass capillary beam. The introduction of a 10 micron aperture between capillary and sample increased the beam size at the sample position to about 5 microns. Linear and 2D-mapping of selected spherulites was possible by using an x/y translation stage and a image intensified detector with video readout. Typical accumulation times were 16 sec per image at 13 keV.

The figure shows a linear scan through the center of a spherulite with a 5 μm step increment. A 6-point diagram is observed at the very center while a 2-point diagram is found outside the center. This suggests the presence of 3 lamellae stacks at the center with a high degree of orientation. The peaks correspond to a long period of ≈ 7.2 nm.

This is the first time that a μ-SAXS experiment has allowed to observe morphological variations at the level of a spherulite.


radiating lamellae
center of spherulitc