



	Experiment title: Nanostructured precipitates: experimental versus exact theoretical SAXS profiles	Experiment number: HS-447
Beamline:	Date of experiment: From: 24-Jan-98 to: 26-Jan-98	Date of report: 26-Jan-99
Shifts:	Local contact(s): Narayanan Theyencheri	<i>Received at ESRF:</i>

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Report:

The results of this experiment were presented at NANO'98, The Fourth International Conference on Nanostructured Materials, held at Stockholm, Sweden (June 14-19, 1998).

The paper *Nanostructured precipitates: experimental versus exact theoretical SAXS profiles*, from D. Crespo, T. Pradell, V. Garrido, E. Pineda and M. Capitán will published in *Nanostructured Materials*, **10** (june 1998).

Abstract -- Small Angle X-Ray Scattering is one of the few techniques suitable for the determination of the grain size distribution of nanostructured materials. A theoretical development has allowed us to determine the spatial self-correlation function of such systems and thus the scattering profile associated with the grain size distribution in the SAXS spectra without supposing any specific shape in the precipitates and taking into account their impingement. It has been tested in the primary crystallization of the amorphous $\text{Fe}_{73.5}\text{Cu}_1\text{Nb}_3\text{Si}_{17.5}\text{B}_5$ giving excellent agreement with the experimental data.