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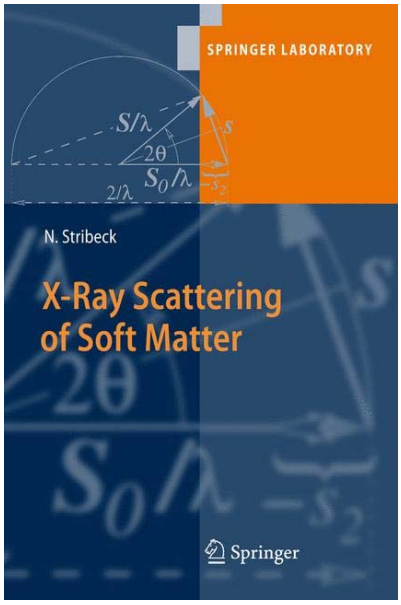

Norbert Stribeck, University of Hamburg, Germany

X-Ray Scattering of Soft Matter

Applications of X-ray scattering to soft matter have advanced considerably within recent years, both conceptually and technically – mature high-power X-ray sources, synchrotrons and rotating anodes, as well as high-speed detectors have become readily available. High-quality time-resolved experiments on polymer structure now can be performed with ease, a major advancement due to the genuine power of the scattering method. This manual summarizes the analytical power of modern X-ray scattering in the field of soft matter. Description of simple tools that can elucidate the mechanisms of structure evolution in the studied materials is followed by a step-for-step guide and breakdown of the more advanced methods. Data analysis based on clear, unequivocal results is rendered simple and straightforward – with a stress on the carefully planning of the experiments and adequate recording of all required data. To this end, this book serves as a useful ready-reference guide.

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01. Polydispersity and Heterogeneity
02. General Background
03. Typical Problems for Analysis by X-Ray Scattering
04. Experimental Overview
05. Acquisition of Synchrotron Beamtime
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07. Pre-Evaluation of Scattering Data
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ISBN-13: 978-3-540-69855-5

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