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Nota di contenuto	Neutrons in Soft Matter; Contents; Preface; Contributors; I Neutron Scattering; I.1 Basic Concepts; II Instrumentation; II.1 Small-Angle Neutron Scattering; II.1.1 Small-Angle Neutron Scattering at Reactor Sources; II.1.2 SANS Instruments at Pulsed Neutron Sources; II.1.3 Ultra-Small-Angle Neutron Scattering; II.1.3.1 Bonse-Hart USANS Instrument; II.1.3.2 Focusing USANS Instrument; II.2 Neutron Reflectometry; II.3 Quasielastic and Inelastic Neutron Scattering; II.3.1 Neutron Spin Echo Spectroscopy; II.3.2 Neutron Backscattering; II.3.3 Time-of-Flight Spectrometry; II.4 Neutron Imaging III Data Treatment and Sample EnvironmentIII.1 Practical Aspects of SANS Experiments; III.2 Structure Analysis; III.3 Calculation of Real Space Parameters and Ab Initio Models from Isotropic Elastic SANS Patterns; III.4 Contrast Variation; III.5 Sample Environment: Soft Matter Sample Environment for Small-Angle Neutron Scattering and Neutron Reflectometry; IV Applications; IV.1 Hierarchical Structure of Small Molecules; IV.2 Structure of Dendritic Polymers and Their Films; IV.3 Dynamics of Polymers; IV.4 Inhomogeneous Structure and Dynamics of Condensed Soft Matter IV.5 Protein Dynamics Studied by Neutron Incoherent ScatteringIV.6 Polymer Interfaces and Thin Films; IV.7 Neutron Diffraction from

Sommario/riassunto

"Car windshields, credit cards, calculators, food packaging, and countless other items have seen improvement in quality thanks to neutron research. Essentials of Neutron Techniques for Soft Matter addresses instrumental techniques related to neutron and synchrotron study and, in particular, small-angle-neutron scattering, which can reveal how long, threadlike polymer molecules pack to give plastics their diverse properties. Recognizing that new neutron sources are about to be constructed around the world, this book serves as a valuable guidebook for scientists that will be trained to use and conduct experiments at such facilities"--
