1. Record Nr. UNISA996466718003316

Titolo	Applications of Synchrotron Light to Scattering and Diffraction in Materials and Life Sciences [[electronic resource] /] / edited by T.A. Ezquerra, Mari Cruz Garcia-Gutierrez, Aurora Nogales, Marian Gomez
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2009
ISBN	1-280-38483-2 9786613562753 3-540-95968-8
Edizione	[1st ed. 2009.]
Descrizione fisica	1 online resource (XVI, 318 p. 177 illus., 20 illus. in color.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 776
Classificazione	UD 8220
Disciplina	530.8
Soggetti	Physical measurements Measurement Amorphous substances Complex fluids Physical chemistry Microscopy Particle acceleration Measurement Science and Instrumentation Soft and Granular Matter, Complex Fluids and Microfluidics Physical Chemistry Biological Microscopy Particle Acceleration and Detection, Beam Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Bases of Synchrotron Radiation, Light Sources, and Features of X-Ray Scattering Beamlines -- Scattering of Soft Condensed Matter: From Fundaments to Application -- A Basic Introduction to Grazing Incidence Small-Angle X-Ray Scattering -- Fundaments of Soft Condensed Matter Scattering and Diffraction with Microfocus Techniques -- The Use of Scattering and Spectroscopic Synchrotron Radiation Methods in Materials Science -- Synchrotron Small-Angle X-Ray Scattering Studies

	of Colloidal Suspensions -- Applications of Synchrotron X-Ray Diffraction to the Study of the Phase Behavior in Liquid Crystalline Polymers -- Structural Analysis of Biological and Technical Nanocomposites by X-Ray Scattering -- Application of Non-crystalline Diffraction with Microfocus to Carbon Fibres -- Simultaneous Calorimetric, Dielectric, and SAXS/WAXS Experiments During Polymer Crystallization -- Discovering New Features of Protein Complexes Structures by Small-Angle X-Ray Scattering -- Protein Shape and Assembly Studied with X-Ray Solution Scattering: Fundaments and Practice -- Diagnosis Applications of Non-Crystalline Diffraction of Collagen Fibres: Breast Cancer and Skin Diseases -- X-Ray Diffraction from Live Muscle Fibres.
Sommario/riassunto	The present set of lecture notes originates from the deeply felt need in the community to bridge the gap between beamline manuals and advanced graduate textbooks. The volume is a collection of tutorials, surveys and reviews. They cover most cases of relevance and interest where the combination of synchrotron light with various scattering and diffraction techniques is a very helpful approach to obtaining essential information about the structure of large molecular assemblies in low-ordered environments. Soft condensed matter and biomaterials, as well as complex fluids, are typical of the materials considered here. Contributions to this volume have been selected on the basis of their close relevance to advanced synchrotron radiation sources and state-of-the art beamline work.