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| Titolo | X-ray and Neutron Reflectivity [[electronic resource] ] : Principles and Applications / / edited by Jean Daillant, Alain Gibaud |
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| ISBN | 3-540-88588-9 |
| Edizione | [1st ed. 2009.] |
| Descrizione fisica | 1 online resource (XIV, 350 p.) |
| Collana | Lecture Notes in Physics, , 0075-8450 ; ; 770 |
| Disciplina | 539.7222 |
| Soggetti | Solid state physics<br>Spectroscopy<br>Microscopy<br>Materials—Surfaces<br>Thin films<br>Materials science<br>Solid State Physics<br>Spectroscopy and Microscopy<br>Surfaces and Interfaces, Thin Films<br>Characterization and Evaluation of Materials |
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| Livello bibliografico | Monografia |
| Note generali | Previous ed.: 1999. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | The Interaction of X-Rays (and Neutrons) with Matter -- Statistical Aspects of Wave Scattering at Rough Surfaces -- Specular Reflectivity from Smooth and Rough Surfaces -- Diffuse Scattering -- Neutron Reflectometry -- X-Ray Reflectivity by Rough Multilayers -- Grazing Incidence Small-Angle X-Ray Scattering from Nanostructures. |
| Sommario/riassunto | This book is the first comprehensive introduction to X-ray and neutron reflectivity techniques and illustrates them with many examples. After a pedagogical introduction on the interaction of X-rays and neutrons with matter, the interplay between the statistics of rough surfaces and interfaces and the scattering of radiation is considered in detail. Specular reflectivity and diffuse scattering are discussed next , in chapters 3 and 4 . The approximations are rigorously introduced and many experimental effects are discussed. The specific aspects of |

neutron reflectivity require separate treatment, given in chapter 5. Chapter 6 turns to X-ray reflectivity by rough multilayers. Eventually, chapter 7 introduces and discusses the by now well-established method of grazing incidence small angle X-ray scattering to investigate nanostructures. For the second edition, the material has been completely reorganized so as to meet the demand for a modern multi-author textbook for PhD students and young researchers. All chapters have further been thoroughly revised, updated and, where appropriate, suitably augmented. The first edition was been published as Lect. Notes Phys. m58 in the same series.