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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	I. Basics -- 1. X-Rays and Diffraction -- 2. Lattices and Crystal Structures -- 3. Practical Aspects of X-Ray Diffraction -- II. Experimental Modules -- Module 1. Crystal Structure Determination. I: Cubic Structures -- Module 2. Crystal Structure Determination. II: Hexagonal Structures -- Module 3. Precise Lattice Parameter Measurements -- Module 4. Phase Diagram Determination -- Module 5. Detection of Long-Range Ordering -- Module 6. Determination of Crystallite Size and Lattice Strain -- Module 7. Quantitative Analysis of Powder Mixtures -- Module 8. Identification of an Unknown Specimen -- Appendixes -- Appendix 1. Plane-Spacing Equations and Unit Cell Volumes -- Appendix 2. Quadratic Forms of Miller Indices for the Cubic System -- Appendix 3. Atomic and Ionic Scattering Factors of Some Selected Elements -- Appendix 4. Summary of Structure Factor Calculations -- Appendix 6. Multiplicity Factors -- Appendix 8. Physical Constants and Conversion Factors -- Appendix 9. JCPDS-ICDD Card Numbers for Some Common Materials -- Appendix 10. Crystal Structures and Lattice Parameters of Some Selected Materials.
Sommario/riassunto	In this, the only book available to combine both theoretical and

practical aspects of x-ray diffraction, the authors emphasize a "hands on" approach through experiments and examples based on actual laboratory data. Part I presents the basics of x-ray diffraction and explains its use in obtaining structural and chemical information. In Part II, eight experimental modules enable the students to gain an appreciation for what information can be obtained by x-ray diffraction and how to interpret it. Examples from all classes of materials -- metals, ceramics, semiconductors, and polymers -- are included. Diffraction patterns and Bragg angles are provided for students without diffractometers. 192 illustrations.
