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Autore	Chen Yi-Long
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Interaction; 2.3.1 Magnetic Splitting; 2.3.2 Relative Line Intensities; 2.3.3 Effective Magnetic Field; 2.4 Combined Quadrupole and Magnetic Interactions
2.5 Polarization of γ -Radiation 2.5.1 Polarized Mossbauer Sources; 2.5.2 Absorption of Polarized γ -Rays; 2.6 Saturation Effect in the Presence of Hyperfine Splittings; 2.7 Mossbauer Spectroscopy; References; 3 Experimental Techniques; 3.1 The Mossbauer Spectrometer; 3.2 Radiation Sources; 3.3 The Absorber; 3.3.1 Estimation of the Optimal Thickness; 3.3.2 Sample Preparation; 3.4 Detection and Recording Systems; 3.4.1 Gas Proportional Counters; 3.4.2 NaI(Tl) Scintillation Counters; 3.4.3 Semiconductor Detectors; 3.4.4 Reduction and Correction of Background Counts; 3.4.5 Geometric Conditions
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4.4.2.1 The Einstein Model

Sommario/riassunto

This up-to-date review closes an important gap in the literature by providing a comprehensive description of the Mossbauer effect in lattice dynamics, along with a collection of applications in metals, alloys, amorphous solids, molecular crystals, thin films, and nanocrystals. It is the first to systematically compare Mossbauer spectroscopy using synchrotron radiation to conventional Mossbauer spectroscopy, discussing in detail its advantages and capabilities, backed by the latest theoretical developments and experimental examples. Intended as a self-contained volume that may be used as a c
