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| Nota di contenuto | X-Ray Fluorescence Spectrometry; CONTENTS; PREFACE TO THE FIRST EDITION; PREFACE TO THE SECOND EDITION; CUMULATIVE LISTING OF VOLUMES IN SERIES; CHAPTER 1 PRODUCTION AND PROPERTIES X-RAYS; 1.1 Introduction; 1.2 Continuous Radiation; 1.3 Characteristic Radiation; 1.4 Absorption of X-Rays; 1.5 Coherent and Incoherent Scattering; 1.6 Interference and Diffraction; Bibliography; CHAPTER 2 INDUSTRIAL APPLICATIONS OF X-RAYS; 2.1 Introduction; 2.2 Diagnostic Uses of X-Rays; 2.3 Tomography; 2.4 Level and Thickness Gauging; 2.5 X-Ray Thickness Gauging; 2.6 Nondestructive Testing 2.7 Security Screening Systems 2.8 X-Ray Lithography; 2.9 X-Ray Astronomy; Bibliography; CHAPTER 3 X-RAY DIFFRACTION; 3.1 Use of X-Ray Diffraction to Study the Crystalline State; 3.2 The Powder Method; 3.3 Use of X-Ray Powder Cameras; 3.4 The Powder Diffractometer; 3.5 Qualitative Applications of the X-Ray Powder Method; 3.6 Quantitative Methods in X-Ray Powder Diffraction; 3.7 Other Applications of X-Ray Diffraction; Bibliography; CHAPTER 4 X-RAY SPECTRA; 4.1 Introduction; 4.2 Electron Configuration of the Elements; 4.3 Fluorescent Yield; 4.4 Relationship Between Wavelength and Atomic Number |

4.5 Normal Transitions (Diagram Lines)4.6 Satellite Lines; 4.7 Characteristic Line Spectra; 4.8 K Spectra; 4.9 L Spectra; 4.10 M Spectra; Bibliography; CHAPTER 5 HISTORY AND DEVELOPMENT OF X-RAY FLUORESCENCE SPECTROMETRY; 5.1 Historical Development of X-Ray Spectrometry; 5.2 Early Ideas About X-Ray Fluorescence; 5.3 Rebirth of X-Ray Fluorescence; 5.4 Evolution of Hardware Control Methods; 5.5 The Growing Role of X-Ray Fluorescence Analysis in Industry and Research; 5.6 The Arrival of Energy Dispersive Spectrometry; 5.7 Evolution of Mathematical Correction Procedures 5.8 X-Ray Analysis in the 1970s5.9 More Recent Development of X-Ray Fluorescence; Bibliography; CHAPTER 6 INSTRUMENTATION FOR X-RAY SPECTROMETRY; 6.1 Introduction; 6.2 Excitation of X-Rays; 6.3 Detection of X-Rays; 6.4 Wavelength Dispersive Spectrometers; 6.5 Energy Dispersive Spectrometers; Bibliography; CHAPTER 7 COMPARISON OF WAVELENGTH AND ENERGY DISPERSIVE SPECTROMETERS; 7.1 Introduction; 7.2 The Measurable Atomic Number Range; 7.3 The Resolution of Lines; 7.4 Measurement of Low Concentrations; 7.5 Qualitative Analysis 7.6 Geometric Constraints of Wavelength and Energy Dispersive SpectrometersBibliography; CHAPTER 8 MORE RECENT TRENDS IN X-RAY FLUORESCENCE INSTRUMENTATION; 8.1 The Role of X-Ray Fluorescence in Industry and Research; 8.2 Scope of the X-Ray Fluorescence Method; 8.3 The Determination of Low Atomic Number Elements; 8.4 Total Reflection X-Ray Fluorescence; 8.5 Synchrotron Source X-Ray Fluorescence-SSXRF; 8.6 Proton Induced X-Ray Fluorescence; Bibliography; CHAPTER 9 SPECIMEN PREPARATION AND PRESENTATION; 9.1 Form of the Sample for X-Ray Analysis; 9.2 Direct Analysis of Solid Samples 9.3 Preparation of Powder Samples

Sommario/riassunto

X-ray fluorescence spectroscopy, one of the most powerful and flexible techniques available for the analysis and characterization of materials today, has gone through major changes during the past decade. Fully revised and expanded by 30%, X-Ray Fluorescence Spectrometry, Second Edition incorporates the latest industrial and scientific trends in all areas. It updates all previous material and adds new chapters on such topics as the history of X-ray fluorescence spectroscopy, the design of X-ray spectrometers, state-of-the-art applications, and X-ray spectra. Ron Jenkins draws on his exte
