

1. Record Nr.	UNISA996218023803316
Autore	Welz Bernhard
Titolo	Atomic absorption spectrometry // Bernhard Welz, Michael Sperling
Pubbl/distr/stampa	Weinheim, [Germany] : , : Wiley-VCH Verlag GmbH & Co. KGaA, , 1999 ©1999
ISBN	1-282-01019-0 9786612010194 3-527-61169-X 3-527-61168-1
Edizione	[Third, completely revised edition.]
Descrizione fisica	1 online resource (965 p.)
Disciplina	543.0858
Soggetti	Atomic absorption spectroscopy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Atomic Absorption Spectrometry; Contents; 8.2.3.13 Selenium; 1 The Historical Development of Atomic Absorption; 1.1 The Early History; 1.2 Sir Alan Walsh and the Period 1952-1962; 1.3 The Development of Spectral Radiation Sources; 1.4 Single-beam, Double-beam, Single-channel, Multi-channel; 1.5 The Non-specific Attenuation of Radiation; 1.6 Burners and Flames; 1.7 Electrothermal Atomization; 1.7.1 Boris L'vov and the Graphlie Cuvette; 1.7.2 Walter Slavin and the STPF Concept; 1.7.3 The Two-step Atomizer; 1.7.4 Graphite Tubes and Other Atomizers; 1.8 Chemical Vapor Generation 1.8.1 The Cold Vapor Technique1.8.2 The Hydride-Generation Technique; 1.8.3 Further Techniques of Chemical Vapor Generation; 1.9 Analysis of Solid Samples; 2 Physical Principles; 2.1 Atomic Structure and Spectra; 2.1.1 Atomic Structure; 2.1.2 Atomic Spectra; 2.1.3 Selection of the Spectral Lines; 2.2 Thermal Equilibrium; 2.3 Line Width and Line Profile; 2.3.1 Natural Line Width; 2.3.2 Doppler Broadening; 2.3.3 Collisional Broadening; 2.3.4 Self-absorption and Self-reversal; 2.3.5 Convolution of the Various Broadening Mechanisms; 2.4 Hyperfine Structure; 2.5 Measuring the Absorption 2.5.1 The Absorption Coefficient2.5.2 The Beer-Lambert Law; 2.5.3 Deviations from the Linearity of the Calibration Function; 2.6 The

Zeeman Effect; 3 Spectrometers; 3.1 Radiation Sources; 3.1.1 Line Sources; 3.1.2 Continuum Sources; 3.2 The Radiation Train; 3.3 Dispersion and Separation of the Radiation; 3.3.1 Spectral Slitwidth; 3.3.2 Reciprocal Linear Dispersion; 3.4 The Measurement and Correction of Background Attenuation; 3.4.1 Background Correction with Continuum Sources; 3.4.2 Background correction Utilizing the Zeeman Effect; 3.4.3 Background Correction with High Current Pulsing 3.5 The Detection of Radiation 3.6 The Modulation of Radiation; 3.7 Simultaneous Spectrometers; 3.8 Data Acquisition and Output; 3.8.1 Measured Quantities; 3.8.2 Signal Handling; 3.8.3 Baseline Offset Correction; 3.8.4 Integrated Absorbance; 4 Atomizers and Atomizer Units; 4.1 Flame Atomization; 4.1.1 Spectroscopic Flames; 4.1.2 Nebulizer-Burner Systems; 4.1.2.1 Burner Heads; 4.1.2.2 Nebulizers and Spray Chambers; 4.1.3 Special Introduction Techniques for the Measurement solution; 4.1.3.1 The Injection Technique; 4.1.3.2 The Use of Pumps; 4.1.3.3 Flow Injection 4.1.3.4 Hydraulic High Pressure Nebulization 4.2 Electrothermal Atomization; 4.2.1 Graphite Structure and Reactivity; 4.2.2 Graphite Atomizers; 4.2.2.1 Dimensions of Graphite Tubes; 4.2.2.2 Profiled Tubes; 4.2.2.3 Platforms; 4.2.2.4 Probes; 4.2.2.5 Temporally and Spatially Isothermal Atomizers; 4.2.3 Heating Rate and Temperature Program; 4.2.4 Protective Gas and Purge Gas; 4.2.5 Metal Atomizers; 4.2.6 Atomizer Units for GF AAS; 4.2.7 Analysis of Solid Samples; 4.2.7.1 Direct Analysis of Solid Samples; 4.2.7.2 Aids for Direct Solids Analysis; 4.2.7.3 Analysis of Suspensions 4.2.8 Simultaneous Multielement Determinations

Sommario/riassunto

The thoroughly revised new edition of this best-seller, presents the wide use of AAS in numerous fields of application. The comparison between the different AAS techniques enables the reader to find the best solution for his analytical problem. Authors Bernhard Welz and Michael Sperling have succeeded in finding a balance between theoretical fundamentals and practical applications. The new chapter 'physical fundamentals' describes the basic principles of AAS. The development of AAS is now described in a separate chapter. Further new chapters are devoted to the latest developments in
