

1. Record Nr.	UNINA9910830002703321
Autore	Koscielniak Pawe
Titolo	Calibration in analytical science : methods and procedures / / Pawe Koscielniak
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH, , [2023] ©2023
ISBN	3-527-83111-8 3-527-83110-X
Descrizione fisica	1 online resource (387 pages)
Disciplina	543
Soggetti	Analytical chemistry Calibration
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Preface -- Chapter 1 Calibration Fundamentals -- 1.1 Analytical Context -- 1.2 Principles of Analytical Calibration -- 1.3 Calibration Standards and Models -- 1.4 Calibration Procedures and Methods -- 1.5 Calibration in the Context of Measurement Errors -- 1.5.1 Uncontrolled Analytical Effects -- 1.5.2 Elimination and Compensation of Uncontrolled Effects -- 1.6 Calibration in Qualitative Analysis -- 1.7 Calibration in Quantitative Analysis -- 1.8 General Rules for Correct Calibration -- References -- Chapter 2 "CalibrationFree" Analysis -- 2.1 Novel Approach -- 2.2 Empirical Calibration -- 2.3 Theoretical Calibration -- 2.3.1 Fixed Models -- 2.3.2 Flexible Models -- References -- Chapter 3 Calibration Methods in Qualitative Analysis -- 3.1 Classification -- 3.2 External Calibration Methods -- 3.2.1 External Standard Method -- 3.2.2 Reference Sample Method -- 3.3 Internal Calibration Methods -- 3.3.1 Internal Standard Method -- 3.3.2 Indirect Method -- 3.4 Standard Addition Method -- References -- Chapter 4 Introduction to Empirical Calibration in Quantitative Analysis -- 4.1 Classification -- 4.2 Formulation of Model Functions -- 4.3 Examination of Interference Effect -- 4.4 Mathematical Modeling of Real Function -- References -- Chapter 5 Comparative Calibration Methods -- 5.1 External Calibration Methods -- 5.1.1 External Standard Method -- 5.1.1.1 Modified

Procedures -- 5.1.2 Dilution Method -- 5.2 Internal Calibration
Methods -- 5.2.1 Internal Standard Method -- 5.2.2 Indirect Method --
References -- Chapter 6 Additive Calibration Methods -- 6.1 Basic
Aspects -- 6.2 Standard Addition Method -- 6.2.1 Extrapolative Variant
-- 6.2.1.1 Modified Procedures -- 6.2.2 Interpolative Variants -- 6.2.3
Indicative Variant -- 6.3 Titration -- 6.4 Isotope Dilution Method --
6.4.1 Radiometric Isotope Dilution.
6.4.2 Isotope Dilution Mass Spectrometry -- 6.4.2.1 Modified
Procedures -- References -- Chapter 7 Calibration in Nonequilibrium
Conditions -- 7.1 Flow Injection Analysis -- 7.1.1 Manipulation
Techniques -- 7.1.2 Gradient Technique -- 7.2 Kinetic Analysis --
References -- Chapter 8 Complex Calibration Approaches -- 8.1
Extrapolative Methods -- 8.1.1 Extrapolative Indirect Method -- 8.1.2
Extrapolative Internal Standard Method -- 8.1.3 Extrapolative Dilution
Method -- 8.2 Mixed Methods -- 8.3 Combined Methods -- 8.3.1
Integrated Calibration Methods -- 8.3.1.1 Simple Integrated Method --
8.3.1.2 Complementary Dilution Method -- 8.3.2 Generalized
Calibration Strategy -- 8.3.2.1 Versatile Flow Injection Calibration
Module -- 8.3.3 Standard Dilution Analysis -- References -- Chapter 9
Calibration Approaches for Detection and Examination of Interference
Effects -- 9.1 Introduction -- 9.2 Simple Procedures for Detection and
Examination of Interference Effects -- 9.3 Detection and Compensation
of Additive Interference Effect -- 9.3.1 Interpolative Procedure -- 9.3.2
Extrapolative Procedure -- 9.3.3 Integrated Procedure -- References --
Chapter 10 CalibrationBased Procedures for Correction of Preparative
Effects -- 10.1 Introduction -- 10.2 Specific Procedures -- 10.3
Surrogate Recovery Method -- 10.3.1 Reliability of the Method --
10.3.2 Interpretations of the Method -- 10.3.3 Recovery vs.
Interference Effect -- 10.3.4 Recovery vs. Speciation Effect --
References -- Chapter 11 CalibrationRelated Applications of
Experimental Plans -- 11.1 Introduction -- 11.2 Examination of
Interference Effects -- 11.3 Modeling of Real Functions -- 11.4
Multicomponent Analysis -- References -- Chapter 12 Final Remarks
-- References -- Index -- EULA.
