

CONTENTS

Preface	xi
Contributors	xiii
SECTION 1 FUNDAMENTALS AND METHOD DEVELOPMENT	1
1 Improvement in Pretreatment and Analysis with Spectrometric Methods: A Typical Application to Routine Analysis	3
<i>K. Boutakhrit, F. Bolle, J. M. Degroot, and L. Goeyens</i>	
2 Solubilization: Trends of Development in Analytical Atomic Spectrometry for Elemental Food Analysis	19
<i>Henryk Matusiewicz</i>	
3 Chemical Elements in Food and the Role of Atomic and Mass Spectrometry. Advantages and Drawbacks of the Determination of Selected Trace Elements in Foodstuffs by Atomic Absorption Spectrometry	51
<i>Lars Jorhem and Joakim Engman</i>	
4 High-Resolution Continuum Source AAS and its Application to Food Analysis	81
<i>Bernhard Welz, Daniel L. G. Borges, and Uwe Heitmann</i>	

5	Determining the Geographical Origin of Foods: Considerations when Designing Experimental Protocols and Choosing Analytical Approaches	115
	<i>John Lewis and Simon Hird</i>	
6	Method Validation for Food Analysis: Concepts and Use of Statistical Techniques	135
	<i>Joris Van Loco</i>	
7	Demonstration of Measurement Capabilities by Means of Interlaboratory Comparison Schemes for Trace Element Analysis in Food	167
	<i>Yetunde Aregbe, Piotr Robouch, and Thomas Prohaska</i>	
	SECTION 2 SELECTED APPLICATIONS	223
8	Applications of Inductively Coupled Plasma Mass Spectrometry to Trace Element Research and Control	225
	<i>Francesco Cubadda</i>	
9	Danish Monitoring System for Foods 1998–2003. Content of As, Cd, Hg, Ni, Pb, and Se and Dietary Intake by Children and Adults	297
	<i>Erik H. Larsen, Inge Rokkjær, and Tue Christensen</i>	
10	Trace Elements in the Total Diet Typical of Northern Italy	333
	<i>M. Bettinelli, S. Spezia, A. Gatti, A. Ronchi, C. Minoia, C. Roggi, and G. Turconi</i>	
11	Car Catalytic Converters and the Contamination of Food by Platinum-Group Elements	353
	<i>Chiara Frazzoli, Roberta Cammarone, and Sergio Caroli</i>	
12	Arsenic and Other Potentially Toxic Trace Elements in Rice	383
	<i>Chiara Frazzoli, Marilena D'Amato, Sergio Caroli, and Gyula Záray</i>	
13	Total Analysis and Distribution of Trace Elements in Human, Cow, and Formula Milk	401
	<i>Rafael R. de la Flor St. Remy, María Luisa Fernández Sánchez, and Alfredo Sanz-Medel</i>	
14	Use of Spectrochemical Methods for the Determination of Metals in Fish and other Seafood in Louisiana	437
	<i>Joseph Sneddon</i>	
15	Essential and Potentially Toxic Chemical Elements in Beverages	455
	<i>Patricia Smichowski and Daniel A. Batistoni</i>	

SECTION 3 SPECIATION ANALYSIS	503
16 Species-Specific Determination of Metal(loid)-Containing Food Additives and Contaminants by Chromatography with ICP-MS Detection	505
<i>A. Polatajko, B. Bouyssiére, and J. Szpunar</i>	
17 Elemental Speciation in Human Milk and Substitute Food for Newborns	535
<i>Bernhard Michalke, María Luisa Fernández Sánchez, and Alfredo Sanz-Medel</i>	
18 Measurement of Total Arsenic and Arsenic Species in Seafood By Q ICP-MS	567
<i>William A. Maher, Jason Kirby, and Frank Krikowa</i>	
19 Sample Preparation Prior to As- and Se-Speciation	597
<i>Mihály Dernovics and Péter Fodor</i>	
20 Measurement of Total Se and Se Species in Seafood by Quadrupole Inductively Coupled Plasma Mass Spectrometry, Electrothermal Atomization Atomic Absorption Spectrometry, and High-Performance Liquid Chromatography Inductively Coupled Plasma Mass Spectrometry	643
<i>William A. Maher and Frank Krikowa</i>	
21 Application of ICP-MS for the Evaluation of Se Species in Food Related Products and in Dietary Supplements	671
<i>Katarzyna Wrobel, Kazimierz Wrobel, and Joseph A. Caruso</i>	
22 Determination of Hg Species in Seafood	707
<i>Petra Krystek and Rob Ritsema</i>	
Author Index	727
Subject Index	729

