

# Contents

Acknowledgments.....	vii
1 Introduction..... <i>Bernd Kahn</i>	1
2 Radiation Detection Principles .....	7
<i>Moses Attrep, Jr.</i>	
3 Analytical Chemistry Principles .....	39
<i>Jeffrey Lahr and Bernd Kahn</i>	
4 Radioanalytical Chemistry Principles and Practices .....	64
<i>Jeffrey Lahr, Bernd Kahn, and Stan Morton</i>	
5 Sample Collection and Preparation.....	77
<i>Robert Rosson</i>	
6 Applied Radioanalytical Chemistry .....	93
<i>Bernd Kahn, Robert Rosson, and Liz Thompson</i>	
7 Preparation for Sample Measurement.....	121
<i>Bernd Kahn</i>	
8 Applied Radiation Measurements .....	134
<i>John M. Keller</i>	
9 Radionuclide Identification .....	163
<i>Bernd Kahn</i>	
10 Data Calculation, Analysis, and Reporting.....	189
<i>Keith D. McCroan and John M. Keller</i>	

11	Quality Assurance.....	220
	<i>Liz Thompson, Pamela Greenlaw, Linda Selvig, and Ken Inn</i>	
12	Methods Diagnostics .....	244
	<i>Bernd Kahn</i>	
13	Laboratory Design and Management Principles.....	261
	<i>Charles Porter and Glenn Murphy</i>	
14	Laboratory Safety .....	292
	<i>Arthur Wickman, Paul Schlumper, Glenn Murphy, and Liz Thompson</i>	
15	Automated Laboratory and Field Radionuclide Analysis Systems ....	318
	<i>Harry S. Miley and Craig Edward Aalseth</i>	
16	Chemistry Beyond the Actinides .....	338
	<i>Darleane C. Hoffman</i>	
17	Mass Spectrometric Radionuclide Analyses .....	362
	<i>John F. Wacker, Gregory C. Eiden, and Scott A. Lehn</i>	
	Appendix A1: ASTM Radiological Standard Test Methods, Practices, and Guides (ASTM 2005).....	410
	Appendix A2: Standard Methods, part 7000—Radioactivity (Standard Methods 2005).....	416
	Appendix A3: Applicable ANSI Standard Procedures (ANSI 2005).....	417
	Appendix A4: Applicable ISO Standard Procedures (ISO 2005).....	418
	Appendix B: Regulation- and Standard-Setting Agencies .....	418
	Appendix C .....	420
	Glossary .....	421
	References .....	437
	Index .....	467