DESCRIPTION

Edited by two very well-known and respected scientists in the field, this excellent practical guide is the first to cover the fundamentals and a wide range of applications, as well as showing readers how to efficiently use this increasingly important technique.

From the contents:

* The Isotopic Composition of the Elements

* Single-Collector ICP-MS

* Multi-Collector ICP-MS

* Advances in Laser Ablation - Multi-Collector ICP-MS

* Correction for Instrumental Mass Discrimination in Isotope Ratio Determination with Multi-Collector ICP-MS

* Reference Materials in Isotopic Analysis

* Quality Control in Isotope Ratio Applications

* Determination of Trace Elements and Elemental Species Using Isotope Dilution ICP-MS

* Geochronological Dating

* Application of Multi-Collector ICP-MS to Isotopic Analysis in Cosmochemistry
* Establishing the Basis for Using Stable Isotope Ratios of Metals as Paleoredox Proxies

* Isotopes as Tracers of Elements Across the Geosphere-Biosphere Interface

* Archaeometric Applications

* Forensics Applications

* Nuclear Applications

* The Use of Stable Isotope Techniques for Studying Mineral and Trace Element Metabolism in Humans

* Isotopic Analysis via Multi-Collector ICP-MS in Elemental Speciation

A must-have for newcomers as well as established scientists seeking an overview of isotopic analysis via ICP-MS.

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**ABOUT THE AUTHOR**

Frank Vanhaecke (°1966) is Professor in Analytical Chemistry at Ghent University (Belgium), where he leads the 'Atomic & Mass Spectrometry & A&MS' research unit that focuses on the determination, speciation and isotopic analysis of (trace) elements via ICP-mass spectrometry (ICPMS). One of the specific topics studied, is isotope ratio determination using single- and multi-collector ICP-MS in the context of elemental assay via isotope dilution, tracer experiments with stable isotopes and the use of small natural variations in the isotopic composition of metals and metalloids for provenance determination and for obtaining better insight into biological, environmental and geological problems. Frank is (co-)author of some 200 scientific papers in international journals, 15 book chapters and more than 350 conference presentations and is a Fellow of the Royal Society of Chemistry RSC. In 2011, he received a 'European Award for Plasma Spectrochemistry' for his contributions to the field.

Patrick Degryse (°1974) is Professor of Archaeometry at the department of Earth and Environmental Sciences and director of the Centre for Archaeological Sciences at the Katholieke Universiteit Leuven (Belgium). His main research efforts focus on the use of mineral raw materials in ancient ceramic, glass, metal and building stone production, using petrographical, mineralogical and isotope geochemical techniques. He teaches geology, geochemistry, archaeometry and natural sciences in archaeology, and outside the lab is active in several field projects in the eastern Mediterranean. Patrick is author of over 100 scientific papers in international journals, conference proceedings and books and is an A. von Humboldt Fellow and European Research Council Grantee.
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