

# Practical Guide to ICP-MS

## *A Tutorial for Beginners, Third Edition*

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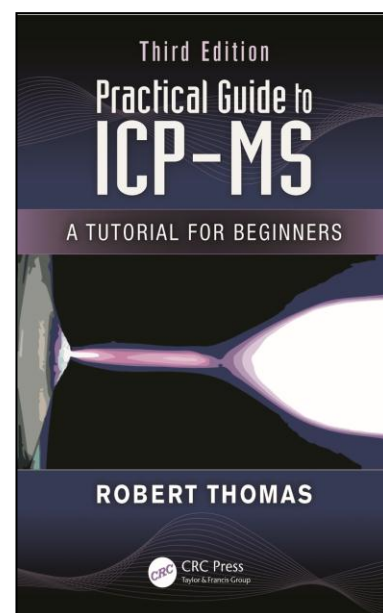
Presenting an in-depth discussion of the fundamental principles, analytical advantages, and practical capabilities of ICP-MS, this volume offers key concepts in a reader-friendly format suitable for those with limited knowledge of the technique. Written by an insider with more than 20 years experience in product development, customer support, and technical marketing for an ICP-MS instrument vendor, the book highlights this powerful ultra trace-element technique as a practical solution to real-world problems. The new edition has been updated and revised to cover new developments and updates to existing applications and reflects the significant new technology introduced by vendors since the second edition published.

### Key Features

- Describes the fundamental principles of the techniques
- Addresses major sample preparation, contamination, and routine maintenance issues
- Compares ICP-MS to other trace element techniques in terms of detection capability, dynamic range, and more
- Includes new glossary of terminology and equipment features
- Presents user-friendly selection criteria when evaluating commercial ICP-MS equipment
- Features exciting new application areas including power plant flue gas desulfurization waters, automated seawater analysis, engineered nanomaterials, pharmaceutical compounds, and dietary supplements
- Discusses other application areas including metallurgical, petrochemical, pharmaceutical, and food and agriculture.

### Selected Contents

An Overview of ICP Mass Spectrometry. Principles of Ion Formation. Sample Introduction. Aerosol. Plasma Source. Interface Region. Ion-Focusing System. Mass Analyzers: Quadrupole Technology. Mass Analyzers: Double-Focusing Magnetic Sector Technology. Mass Analyzers: Time-of-Flight Technology. Mass Analyzers: Collision/Reaction Cell and Interface Technology. Ion Detectors. Peak Measurement Protocol. Measurement. Methods of Quantitation. Review of Interferences. Contamination Issues Associated with Sample Preparation. Routine Maintenance. Alternative Sample Introduction Techniques. Coupling ICP-MS with Chromatographic Techniques for Trace. ICP-MS Applications-(Forensics, Nanoparticles, Biological Analysis incl. Speciation, recent developments in Nuclear industry, energy). Comparing ICP-MS with Other Atomic Spectroscopic Techniques (LIBS, LA-ICP-MS). How to Select an ICP Mass Spectrometer: Some Important Analytical Considerations. Glossary of ICP-MS Terms.



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