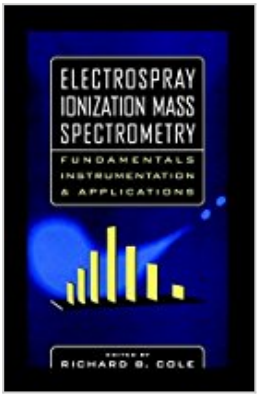

Electrospray Ionization Mass Spectrometry: Fundamentals, Instrumentation, and Applications

From Wiley-Interscience

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Comprehensive, up-to-date coverage of a revolutionary technique Electrospray ionization mass spectrometry (ESI-MS) has completely changed the way physicists, chemists, and biologists view the study of large molecules. The technique derives detailed information about molecular weights and structures from extremely small sample quantities. ESI-MS can create highly charged forms of very high molecular weight compounds, it is naturally compatible with many types of separation techniques, and it allows noncovalent interactions between molecules in solution to be preserved in the gas phase. But many researchers may not use the technique to its full potential because they are unfamiliar with the different perspectives of its underlying processes, the varied approaches to implementation, and the wide-ranging utility of the technique.

In this book, Richard B. Cole and an assemblage of leading researchers present a single-volume compilation of different approaches to the understanding and exploitation of ESI-MS. This comprehensive guide:
* Examines the physical and chemical aspects of the electrospray process and describes the events involved in ion formation as well as the electro-chemical phenomena that are central to charged droplet formation during the process
* Explores the coupling of electrospray ionization to various mass spectrometers, including quadrupole, magnetic, time-of-flight, quadrupole ion trap, and Fourier transform ion cyclotron resonance instruments
* Describes recent progress in interfacing ESI with solution-based separation techniques, including liquid chromatography and capillary electrophoresis
* Charts the rapid development of ESI applications and categorizes them by compound type: peptides and proteins, nucleic acids and their constituents, carbohydrates and lipids, small molecules related to pharmacology and drug metabolism, and organometallics and inorganic compounds

Electrospray Ionization Mass Spectrometry is the indispensable handbook and reference for anyone who wishes to understand, implement, or apply this technique, including researchers in chemistry, metallochemistry, biochemistry, biology, pharmacology, and physics.

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Editorial Review

From the Publisher
Presents a wide view of the current knowledge concerning the basic aspects of electrospray ionization mass spectrometry. The book is divided into four main sections which can be characterized globally as fundamental and mechanistic aspects of the electrospray process, coupling electrospray to various mass analyzers, interfacing electrospray to separations techniques, and applications of electrospray to problems in biochemistry, pharmacology, and metallochemistry. It is the first comprehensive single volume to assemble different approaches to the understanding and utilization of this revolutionary technique.

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About the Author
RICHARD B. COLE is Associate Professor and Director of the New Orleans Center for Mass Spectrometry Research in the Department of Chemistry at the University of New Orleans. The French Académie des Sciences awarded him the title Professeur de L'Académie during his sabbatical year in France.

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