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Book review

Electrospray Ionization Mass Spectrometry: Fundamentals, Instrumentation and Applications, edited by Richard B. Cole. Publisher: John Wiley and Sons, New York, Chichester, Weinheim, 1997. ISBN 0-471-14564-5; xxii + 577 pp; US\$ 98.95, £70.00.

This is an outstanding book for several reasons. First is the fact that the chapters are written by experts in the field, who each have provided in-depth coverage of their topic. Second is the major importance of electrospray ionization (ESI) in mass spectrometry, for a diversity of reasons both practical and fundamental. One of these reasons is that it is powerful for both small and large molecule analysis. Third is the perfect timing of the book, now that much knowledge and experience about electrospray have accumulated since its explosive growth starting in the late 80's. Fourth is the fact that electrospray touches on many other aspects of mass spectrometry, including its connection to front-end chromatographic and electrophoresis techniques that often are used to deliver the sample to the MS via an electrospray interface. This means that the book covers a lot of territory of modern mass spectrometry, more than one might imagine from the title of the book.

The book is divided into four parts. The first part covers fundamentals, with chapters on the mechanisms, electrolytic aspects, source design, and source conditions. Different kinds of mass analyzers that have been coupled to ESI are covered in the second part: quadrupole, magnetic sector, TOF, quadrupole ion trap, and FTMS. In the third part the two front-end techniques of chromatography and capillary electrophoresis are discussed, followed by a fourth part on applications: peptides, proteins, nucleic acids and their constituents, carbohydrates, lipids, drugs and organometallics.

It is too bad that sensitivity in electrospray is compound- and condition-dependent, and hopefully the future holds further advances in this area, both in terms of performance and understanding especially for small molecules. I would have liked to see a chapter focus on this topic, but at least there is lots of attention to it sprinkled throughout the text.

This is a book for both the general reader and specialist. It is highly recommended both for perspective as well as reference purposes.

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