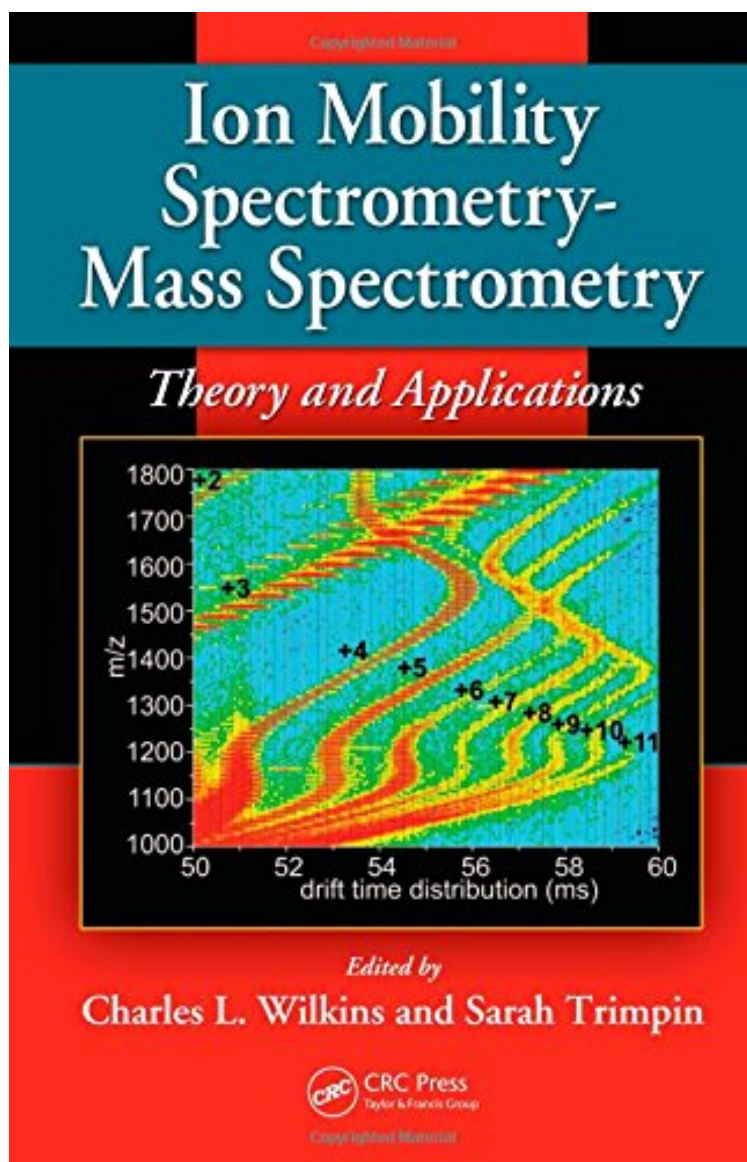


(Ebook free) Ion Mobility Spectrometry - Mass Spectrometry: Theory and Applications

# Ion Mobility Spectrometry - Mass Spectrometry: Theory and Applications

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The analytical power of ion mobility spectrometry-mass spectrometry (IMS-MS) instruments is poised to advance this technology from research to analytical laboratories. Exploring these developments at this critical juncture, *Ion Mobility Spectrometry-Mass Spectrometry: Theory and Applications* covers the tools, techniques, and applications involved when molecular size and shape information is combined with the well-known analytical advantages of high-performance mass spectrometry. One of the Most Exciting Developments in Contemporary Mass Spectrometry After presenting an overview chapter and the fundamentals, the book focuses on instrumentation and ionization sources. It describes an ion-mobility-capable quadrupole time-of-flight mass spectrometer, the differential mobility analyzer, a cryogenic-temperature ion mobility mass spectrometer, the atmospheric solids analysis probe method, and laserspray ionization. In the final applications-oriented chapters, the contributors explore how homebuilt and commercial instruments using electrospray ionization and matrix-assisted laser desorption/ionization (MALDI) methods are employed to solve biological and synthetic issues. *Harness the Power of IMS-MS for Analyzing Complex Substances* This work helps readers unfamiliar with IMS-MS to understand its fundamental theory and practical applications. It also encourages them to investigate the potential analytical uses of IMS-MS and further explore the power of this method. Numerous color figures are included on a CD-ROM.

**About the Author** Charles L. Wilkins is a distinguished professor in the Department of Chemistry and Biochemistry at the University of Arkansas in Fayetteville. He is the editor of eight books and the author of more than 235 scientific papers and 21 book chapters. Dr. Wilkins has been the recipient of many awards, including the Southern California Section of the American Chemical Society Tolman Medal, the New York Section of the Society for Applied Spectroscopy Gold Medal, the American Chemical Society Franklin and Field Award for Outstanding Achievement in Mass Spectrometry, the Eastern Analytical Symposium Award for Outstanding Achievements in the Field of Analytical Chemistry, and the University of Oregon Alumni Award for Outstanding Achievement in Pure Chemistry. His research interests include mass spectrometry of polymer and copolymer materials, Fourier transform mass spectrometry, and the development of new methods to improve the utility of analytical mass spectrometry. Sarah Trimpin is an assistant professor at Wayne State University in Detroit, Michigan. Dr. Trimpin has received the American Society for Mass Spectrometry Research Award, the DuPont Company Young Investigator Award, and the German Society for Mass Spectrometry Wolfgang-Paul-Studienpreis and Wolfgang-Paul-Promotionspreis. She also was honored with a National Science Foundation CAREER Award and was named one of Genome Technology's Rising PIs. She and her colleagues recently developed laserspray ionization, a new technique that combines the attributes of MALDI and electrospray ionization.