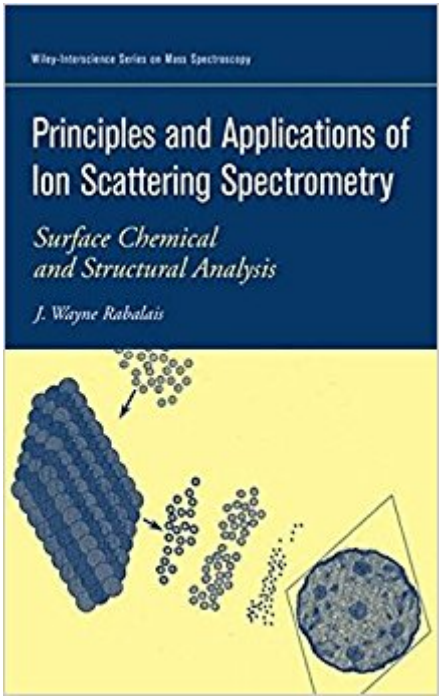
Principles And Applications Of Ion Scattering Spectrometry: Surface Chemical And Structural Analysis (Wiley Series On Mass Spectrometry)



Synopsis

Ion scattering spectrometry, a powerful analytical tool used to determine the structure and composition of a substance, addresses critical problems in semiconductors, thin film growth, coatings, computer chips, magnetic storage devices, bioreactive surfaces, catalytic surfaces, and electrochemical surfaces (including the large battery industry). Principles and Applications of Ion Scattering Spectrometry: Surface Chemical and Structural Analysis represents the first and only book on this exciting field, seamlessly merging theoretical fundamentals with cutting-edge practical applications. Author J. Wayne Rabalais, the worldÃ¢â ¬â„¢s leading expert in ion scattering spectrometry, recognizes both the pedagogic and research needs of such a text and divides his work accordingly. Chapters 1 through 5 address senior undergraduates and beginning graduate students in chemical physics and include figures and illustrative diagrams intended to exemplify the discussions. Chapters 6 through 9 comprise material on the brink of current research and contain specific references to other sources at the end of each; further, chapter 10 is a bibliography of ion scattering publications. Topics covered include: -Introductory, theoretical, and experimental aspects of ion scattering -General features and structural analysis -The recent technique of scattering and recoiling imaging spectrometry -Examples of structural analysis -Ion-surface charge exchange phenomena -Hyperthermal ion-surface interactions Engineers, researchers, professors, and postdoctoral associates involved in surface analysis, surface science, and studies of surfaces of materials will find RabalaisÃ¢â ¬â„¢ incomparable study a seminal moment in the advance of ion scattering spectrometry.

Book Information

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Customer Reviews

"Written with the needs of both students and researchers in mind, this volume is the first book devoted exclusively to ion scattering spectrometry." (Spectroscopy, Vol. 17, No. 12, December 2002) "This...is the first treatise on ion scattering and recoiling spectroscopy...recommended." (Choice, Vol. 40, No. 7, March 2003) "...I learned a lot from this book and highly recommend it to all surface scientists and mass spectrometrists." (Journal of the American Chemical Society, Vol. 125, No. 20, 2003) "...useful monograph...recommended...a good reference book that is strong on the principles and limited to one part of the 'applications' of ion scattering spectrometry." (Applied Spectroscopy, Vol. 57, No.8, August 2003)

The first authoritative account of ion scattering spectrometry for both students and researchers Ion scattering spectrometry, a powerful analytical tool used to determine the structure and composition of a substance, addresses critical problems in semiconductors, thin film growth, coatings, computer chips, magnetic storage devices, bioreactive surfaces, catalytic surfaces, and electrochemical surfaces (including the large battery industry). Principles and Applications of Ion Scattering Spectrometry: Surface Chemical and Structural Analysis represents the first and only book on this exciting field, seamlessly merging theoretical fundamentals with cutting-edge practical applications. Author J. Wayne Rabalais, the world's leading expert in ion scattering spectrometry, recognizes both the pedagogic and research needs of such a text and divides his work accordingly. Chapters 1 through 5 address senior undergraduates and beginning graduate students in chemical physics and include figures and illustrative diagrams intended to exemplify the discussions. Chapters 6 through 9 comprise material on the brink of current research and contain specific references to other sources at the end of each; further, chapter 10 is a bibliography of ion scattering publications. Topics covered include: * Introductory, theoretical, and experimental aspects of ion scattering * General features and structural analysis * The recent technique of scattering and recoiling imaging spectrometry * Examples of structural analysis * Ion-surface charge exchange phenomena * Hyperthermal ion-surface interactions Engineers, researchers, professors, and postdoctoral associates involved in surface analysis, surface science, and studies of surfaces of materials will find Rabalais' incomparable study a seminal moment in the advance of ion scattering spectrometry.

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