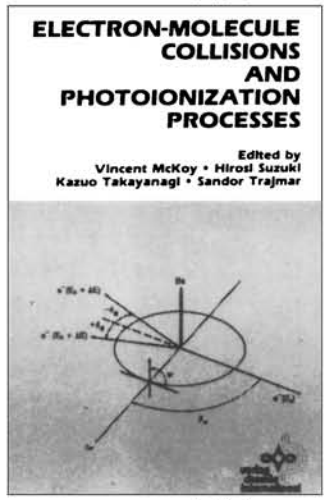
Electron-Molecule Collisions and Photoionization Processes



Edited by V. McKoy, H. Suzuki, K. Takayanagi, S. Trajmar

1984 XVI, 244pp with 102 figures ISBN 3 527-26114-1

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This book presents the contributions of the participants of the first United States-Japan Seminar on Electron-Molecule Collisions and Photoionization Processes, held October 26–29, 1982 in Pasadena, California.

The articles show that each of the two fields under discussion offers a wide spectrum of reaction processes. The section on electron-molecule collisions and related processes includes discussions of dissociative electron attachment, electron impact dissociation of molecules, electron collision with polar molecules, spin-polarized electron collisions, and negative ion states of large molecules. The various aspects of photoionization processes are treated in articles on photodetachment threshold processes, molecular photoionization, multiphoton ionization of molecules, electron-impact ionization, and the rotational and vibrational excitation of molecules by low-energy electrons.

The discussions which summarize recent progress also make clear that further experimental and theoretical studies are needed in this rapidly expanding field.

Contents: Photodetachment Threshold Processes; Dissociative Photoionization Caused by Autoionization of O_2 and N_2; Multiphoton Ionization as a Probe of Molecular Photoionization Dynamics; Theoretical Analysis of Elastic Scattering of Electrons from H_2^+; Doubly Differential Cross Sections for Electron Collisions with Nitrogen; Measurements of Ionization Cross Sections of Atomic Ions by Electron Impact; Overview of Electron-Molecule Collision Processes; Sum Rules and Partial-Sum Rules for Rotational Transitions of Molecules; Theory and Computations for Electron Collisions with Polar Molecules; Studies of Threshold Vibrational Excitation in Electron-Polar Molecular Collisions; Ab Initio Studies of Resonant Vibrational Excitation and Dissociative Electron Attachment; Temporary Negative Ion States of Large Molecules; Resonance Structure in Elastic Spin-Polarized Electron Scattering by Ne und Ar; Electron-Molecule Collisions: Data Needs versus Data Available; Electron Collision Processes in the Earth's Atmosphere; Electron-Molecule Collision Cross Sections: An Overview of the Experimental Developments; Investigation of Hybrid Theory Approach to Electron-Molecule Collisions; Recent Advances in Electron Spin Polarization Measurements; Third Harmonic Generation for Photoionization Studies; Excitation and Dissociation Mechanisms in Molecules with Application to Mercuric Halide Laser System; Theory of Electronically Inelastic Scattering of Electrons by Molecules; A Linear Algebraic Approach to Electron-Molecule Collisions; Quantum Defect Methods for Low Energies; Electron Impact Excitation Cross Sections of OCS, O_2 and Other Gases for Intermediate Incident Energies; Studies of Dissociative Excitation Processes of Simple Molecules by Means of TOF Spectroscopy of Fragment Atoms; The Need for Electron-Molecule Collision Cross Sections

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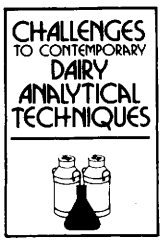

Over many years international organizations, national organizations, and private concerns have prepared standardization methods of analysis for food products, including milk and milk products, for purposes of quality control, assessment of nutritive content, enforcement of legal requirements, and affirmation of safety. This activity is concerned with identifying the most appropriate current methodology and codifying it in authoritative documents. *Challenges to Contemporary Dairy Analytical Techniques* appraises the problems that will be faced by analysis of dairy products in the future and examines the means that are likely to be used to solve them. This publication is thus concerned with the application of methods in quality control and with the techniques that will be in regular use in control, whether highly sophisticated or not and whether automated and/or indirect in principle.

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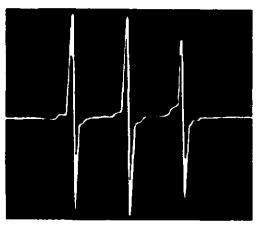

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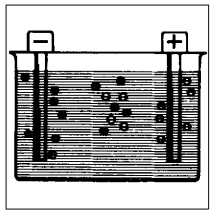

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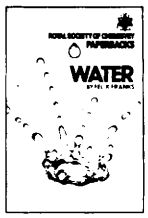

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