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Nonequilibrium Effects in Ion and Electron Transport Jan 11 2022

Linear and Nonlinear Electron Transport in Solids Aug 06 2021

Advances in Electron Transport Complex I Research and Application: 2012 Edition May 15 2022 Advances in Electron Transport Complex I Research and Application / 2012 Edition is a ScholarlyPaper™ that delivers timely, authoritative, and intensively focused information about Electron Transport Complex I in a compact format. The editors have built Advances in Electron Transport Complex I Research and Application / 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Electron Transport Complex I in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Advances in Electron Transport Complex I Research and Application / 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Classical and Quantum Trajectory-based Approaches to Electron Transport with Full Coulomb Correlations Sep 26 2020

Aspects of electron transport in semiconductor nanostructures May 23 2020

Advances in Electron Transport Complex II Research and Application: 2012 Edition Apr 02 2021 Advances in Electron Transport Complex II Research and Application / 2012 Edition is a ScholarlyPaper™ that delivers timely, authoritative, and intensively focused information about Electron Transport Complex II in a compact format. The editors have built Advances in Electron Transport Complex II Research and Application / 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Electron Transport Complex II in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Advances in Electron Transport Complex II Research and Application / 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Quantitative Analysis of Surface Electron Spectra Oct 16 2019

INVESTIGATION OF ELECTRON TRANSPORT MECHANISMUS IN PHOTOSYNTHESIS. FINAL REPORT. Dec 30 2020

Stochastic Approaches to Electron Transport in Micro- and Nanostructures Jan 23 2023 The book serves as a synergistic link between the development of mathematical models and the emergence of stochastic (Monte Carlo) methods applied for the simulation of current transport in electronic devices. Regarding the models, the historical evolution path, beginning from the classical charge carrier transport models for microelectronics to current quantum-based nanoelectronics, is explicatively followed. Accordingly, the solution methods are elucidated from the early phenomenological single particle algorithms applicable for stationary homogeneous physical conditions up to the complex algorithms required for quantum transport, based on particle generation and annihilation. The

book fills the gap between monographs focusing on the development of the theory and the physical aspects of models, their application, and their solution methods and monographs dealing with the purely theoretical approaches for finding stochastic solutions of Fredholm integral equations.

Balance Equation Approach to Electron Transport In Semiconductors Oct 20 2022 This book presents a systematic, comprehensive and up-to-date description of the physical basis of the balance equation transport theory and its applications in bulk and low-dimensional semiconductors. The different aspects of the balance equation method, originally proposed by C S Ting and the author of the present book, were reviewed in the volume entitled Physics of Hot Electron Transport in Semiconductors (edited by C S Ting, World Scientific, 1992). Since then, this method has been extensively developed and applied to various new fields, such as transport in nonparabolic systems, spatially nonuniform systems and semiconductor devices, miniband conduction of superlattices, hot-electron magnetotransport, effects of impact ionization in transport, microwave-induced magnetoresistance oscillation, radiation-driven transport and electron cooling, etc. Due to its simplicity and effectiveness, the balance equation approach has become a useful tool to tackle the many transport phenomena in semiconductors, and provides a reliable basis for developing theories, modeling devices and explaining experiments.The book may be used as a textbook by graduate students. It will also benefit researchers in the field by helping them grasp the basic principles and techniques of the method, without having to spend a lot of time digging out the information from widespread literature covering a period of 30 years.

Discontinuities in Electron Transport Sep 07 2021

Electron Transport in Quantum Dots Feb 18 2020 When I was contacted by Kluwer Academic Publishers in the Fall of 200 I, inviting me to edit a volume of papers on the issue of electron transport in quantum dots, I was excited by what I saw as an ideal opportunity to provide an overview of a field of research that has made significant contributions in recent years, both to our understanding of fundamental physics, and to the

development of novel nanoelectronic technologies. The need for such a volume seemed to be made more pressing by the fact that few comprehensive reviews of this topic have appeared in the literature, in spite of the vast activity in this area over the course of the last decade or so. With this motivation, I set out to try to compile a volume that would fairly reflect the wide range of opinions that has emerged in the study of electron transport in quantum dots. Indeed, there has been no effort on my part to ensure any consistency between the different chapters, since I would prefer that this volume instead serve as a useful forum for the debate of critical issues in this still developing field. In this matter, I have been assisted greatly by the excellent series of articles provided by the different authors, who are widely recognized as some of the leaders in this vital area of research.

Nonequilibrium Effects in Ion and Electron Transport Aug 18 2022 This volume presents the contributions of the participants in the Sixth International Swarm Seminar, held August 2-5, 1989, at the Webb Institute in Glen Cove, New York. The Swarm Seminars are traditionally held as relatively small satellite conferences of the International Conference on the Physics of Electronic and Atomic Collisions (ICPEAC) which occurs every two years. The 1989 ICPEAC took place in New York City prior to the Swarm Seminar. The focus of the Swarm Seminars has been on basic research relevant to understanding the transport of charged particles, mainly electrons and ions, in weakly ionized gases. This is a field that tends to bridge the gap between studies of fundamental binary atomic and molecular collision processes and studies of electrical breakdown or discharge phenomena in gases. Topics included in the 1989 seminar ranged the gamut from direct determinations of charged-particle collision cross sections to use of cross sections and swarm parameters to model the behavior of electrical gas discharges. Although the range of subjects covered was in many respects similar to that of previous seminars, there was an emphasis on certain selected themes that tended to give this seminar a distinctly different flavor. There was, for example, considerable discussion on the meaning of "equilibrium" and the conditions under which

nonequilibrium effects become important in the transport of electrons through a gas.

Advanced Physics of Electron Transport in Semiconductors and Nanostructures Nov 21 2022 This textbook is aimed at second-year graduate students in Physics, Electrical Engineering, or Materials Science. It presents a rigorous introduction to electronic transport in solids, especially at the nanometer scale.Understanding electronic transport in solids requires some basic knowledge of Hamiltonian Classical Mechanics, Quantum Mechanics, Condensed Matter Theory, and Statistical Mechanics. Hence, this book discusses those sub-topics which are required to deal with electronic transport in a single, self-contained course. This will be useful for students who intend to work in academia or the nano/ micro-electronics industry.Further topics covered include: the theory of energy bands in crystals, of second quantization and elementary excitations in solids, of the dielectric properties of semiconductors with an emphasis on dielectric screening and coupled interfacial modes, of electron scattering with phonons, plasmons, electrons and photons, of the derivation of transport equations in semiconductors and semiconductor nanostructures somewhat at the quantum level, but mainly at the semi-classical level. The text presents examples relevant to current research, thus not only about Si, but also about III-V compound semiconductors, nanowires, graphene and graphene nanoribbons. In particular, the text gives major emphasis to plane-wave methods applied to the electronic structure of solids, both DFT and empirical pseudopotentials, always paying attention to their effects on electronic transport and its numerical treatment. The core of the text is electronic transport, with ample discussions of the transport equations derived both in the quantum picture (the Liouville-von Neumann equation) and semi-classically (the Boltzmann transport equation, BTE). An advanced chapter, Chapter 18, is strictly related to the 'tricky' transition from the time-reversible Liouville-von Neumann equation to the time-irreversible Green's functions, to the density-matrix formalism and, classically, to the Boltzmann transport equation. Finally, several methods for solving the BTE are also reviewed,

including the method of moments, iterative methods, direct matrix inversion, Cellular Automata and Monte Carlo. Four appendices complete the text.

Many-particle Monte Carlo Approach to Electron Transport Sep 19 2022 Many-particle Monte Carlo Approach to Electron Transport.

Mapping the Cellular Response to Electron Transport Chain Inhibitors Reveals Selective Signaling Networks Triggered by Mitochondrial Perturbation Apr 21 2020

Electron Transport in Compound Semiconductors Feb 24 2023 Discovery of new transport phenomena and invention of electron devices through exploitation of these phenomena have caused a great deal of interest in the properties of compound semiconductors in recent years. Extensive re search has been devoted to the accumulation of experimental results, par ticularly about the artificially synthesised compounds. Significant ad vances have also been made in the improvement of the related theory so that the values of the various transport coefficients may be calculated with suf ficient accuracy by taking into account all the complexities of energy band structure and electron scattering mechanisms. Knowledge about these deve lopments may, however, be gathered only from original research contributions, scattered in scientific journals and conference proceedings. Review articles have been published from time to time, but they deal with one particular material or a particular phenomenon and are written at an advanced level. Available text books on semiconductor physics, do not cover the subject in any detail since many of them were written decades ago. There is, there fore, a definite need for a book, giving a comprehensive account of electron transport in compound semiconductors and covering the introductory material as well as the current work. The present book is an attempt to fill this gap in the literature. The first chapter briefly reviews the history of the developement of compound semiconductors and their applications. It is also an introduction to the contents of the book.

Quinones in Electron Transport Mar 21 2020

Electron Transport and Phosphorylation in Chloroplasts as a

Function of the Electron Acceptor Aug 26 2020

The Molecular Basis of Electron Transport Apr 14 2022 The Molecular Basis of Electron Transport presents the proceedings of the Miami Winter Symposia, held in Miami, Florida, on January 13–14, 1972. This book focuses on the development of the mitochondrial electron transport system by a symbiotic relationship of some bacteria with the cell. Comprised of 15 chapters, this volume starts with an overview of the structure and function of mitochondria. This book then explains all of the major categories of mitochondrial phenomena and provides the detailed molecular mechanism for mitochondrial energy coupling. Other chapters discuss the five postulates of the electromechanochemical model, including the super molecule concept, the principle of electromechanochemical energy transduction, conformon coupling, field-induced generation of the linkage system, and the de facto unit of mitochondrial control. Finally, the reader is introduced to the liver microsomal enzyme system, which catalyzes the hydroxylation of a variety of drugs, hydrocarbons, and fatty acids. Biologists, molecular biologists, and biochemists will find this book extremely useful.

Theory of Electron Transport Through Single Molecules Mar 01 2021

Quinones in Electron Transport Mar 13 2022 The Novartis Foundation Series is a popular collection of the proceedings from Novartis Foundation Symposia, in which groups of leading scientists from a range of topics across biology, chemistry and medicine assembled to present papers and discuss results. The Novartis Foundation, originally known as the Ciba Foundation, is well known to scientists and clinicians around the world.

Monte Carlo Simulation of Electron Transport Process in GaAs Jul 25 2020

An Embedding Green Function Approach for Electron Transport Through Interfaces Oct 28 2020

Status of Electron Transport in MCNPtrademark Nov 28 2020

Photosynthesis I May 03 2021 As editor of the two-part Volume V on photosynthesis in RUHLAND'S Encyclopedia, the forerunner of this series published in 1960, I have been approached by the editors of the present volume to provide a

short preface. The justification for following this suggestion lies in the great changes which have been taking place in biology in the two decades between these publications, changes which are reflected in the new editorial plan. Twenty years ago it appeared convenient and formally easy to consider photo synthesis as a clearly separated field of research, which could be dealt with under two major headings: one presenting primarily photochemical and biochemical prin ciples, the other physiological and environmental studies. Such a partition, however, as far as aims and opinions of the authors were concerned, resulted in a rather heterogeneous volume. Today, the tendency in experimental biology is towards a merger of previously distinct disciplines. Biochemists and biophysicists have developed their methods to such an extent that, over and above the analysis of individual reaction sequences, work on the manifold interrelationships among cellular activities has become in creasingly possible. Joining them in growing numbers are the physiologists and ecologists with their wealth of information on activity changes in vivo and on the variability and efficiency of the organisms concerned. Furthermore, biochemists, biophysicists and physiologists also now share a lively interest in ultrastructure research, the results and implications of which, through continually improving methodology, have generated important stimuli for the work in the field of cell function.

THE RESPONSE HISTORY MONTE CARLO METHOD FOR ELECTRON TRANSPORT (MONTE CARLO METHOD). Dec 10 2021 particularly attractive for use on sub-MeV electrons, because analog Monte Carlo calculations are too time-consuming and condensed history calculations are inaccurate.

Gamma-ray and Electron Transport by Monte Carlo Jun 23 2020

Theory of Electron Transport in Semiconductors Dec 22 2022 This book originated out of a desire to provide students with an instrument which might lead them from knowledge of elementary classical and quantum physics to moderntheoreticaltechniques for the analysisof electrontransport in semiconductors. The book is basically a

textbook for students of physics, material science, and electronics. Rather than a monograph on detailed advanced research in a speci?c area, it intends to introduce the reader to the fascinating ?eld of electron dynamics in semiconductors, a ?eld that, through its applications to electronics, greatly contributed to the transformationof all our lives in the second half of the twentieth century, and continues to provide surprises and new challenges. The ?eld is so extensive that it has been necessary to leave aside many subjects, while others could be dealt with only in terms of their basic principles. The book is divided into ?ve major parts. Part I moves from a survey of the fundamentals of classical and quantum physics to a brief review of basic semiconductor physics. Its purpose is to establish a common platform of language and symbols, and to make the entire treatment, as far as pos- ble, self-contained. Parts II and III, respectively, develop transport theory in bulk semiconductors in semiclassical and quantum frames. Part IV is devoted to semiconductor structures, including devices and mesoscopic coherent s- tems. Finally, Part V develops the basic theoretical tools of transport theory within the modern nonequilibrium Green-function formulation, starting from an introduction to second-quantization formalism.

Magnetic Field Studies of Electron Transport in Solids Jan 31 2021

Flux and Reactive Contributions to Electron Transport in Methane Feb 12 2022

Elastic Properties and Electron Transport in InAs Nanowires Jul 17 2022

Electron Transport in Quantum Dots Dec 18 2019 When I was contacted by Kluwer Academic Publishers in the Fall of 200 I, inviting me to edit a volume of papers on the issue of electron transport in quantum dots, I was excited by what I saw as an ideal opportunity to provide an overview of a field of research that has made significant contributions in recent years, both to our understanding of fundamental physics, and to the development of novel nanoelectronic technologies. The need for such a volume seemed to be made more pressing by the fact that few comprehensive reviews of this topic have

appeared in the literature, in spite of the vast activity in this area over the course of the last decade or so. With this motivation, I set out to try to compile a volume that would fairly reflect the wide range of opinions that has emerged in the study of electron transport in quantum dots. Indeed, there has been no effort on my part to ensure any consistency between the different chapters, since I would prefer that this volume instead serve as a useful forum for the debate of critical issues in this still developing field. In this matter, I have been assisted greatly by the excellent series of articles provided by the different authors, who are widely recognized as some of the leaders in this vital area of research.

Many-particle Monte Carlo Approach to Electron Transport Oct 08 2021

Response Kernel Density Estimation Monte Carlo Method for Electron Transport Jan 19 2020

Quinones in Electron Transport Nov 16 2019

Electron Transport in Nanostructures and Mesoscopic Devices Jun 16 2022 This book introduces researchers and students to the physical principles which govern the operation of solid-state devices whose overall length is smaller than the electron mean free path. In quantum systems such as these, electron wave behavior prevails, and transport properties must be assessed by calculating transmission amplitudes rather than microscopic conductivity. Emphasis is placed on detailing the physical laws that apply under these circumstances, and on giving a clear account of the most important phenomena. The coverage is comprehensive, with mathematics and theoretical material systematically kept at the most accessible level. The various physical effects are clearly differentiated, ranging from transmission formalism to the Coulomb blockade effect and current noise fluctuations. Practical exercises and solutions have also been included to facilitate the reader's understanding.

Electron Transport in a Dilute Weakly Ionized Gas Application to a Model Ionosphere Jul 05 2021 The author presents a kinetic model for the electron distribution function in micro-space in a dilute, nonuniform, weakly ionized gas. The model includes photoproduction of electron-ion pairs, electron-ion

recombination, and elastic, inelastic, and ionizing electron-neutral collisions. Under special conditions exact solutions are found for the steady-state electron velocity spectrum in a uniform, infinite medium for a delta-function photon energy source, and for an exponentially decreasing photon energy source. Also presented is a general method for finding the electron distribution function in a plane-parallel medium where the neutral gas density varies exponentially with position. The method is applied to give an approximation to the electron-ion concentration, the electron-ion drift velocity, and the electron temperature for a model ionosphere at altitudes where the assumption of weak ionization is valid. (Author).

Regulation of Electron Transport in Choroplasts Jun 04 2021

The Macro Response Monte Carlo Method for Electron Transport Nov 09 2021