Thermal Stability Of Spectral Hole And Electron Phonon Interaction In Donor Acceptor Electron Transfer System

#thermal stability #spectral hole burning #electron phonon coupling #donor acceptor electron transfer #photo-physics

This research investigates the critical thermal stability of spectral holes, exploring how these quantum features persist or degrade under varying temperatures. Concurrently, it delves into the intricate electron-phonon interaction mechanisms occurring within donor-acceptor electron transfer systems, shedding light on their role in energy dissipation and charge transfer efficiency.

Physics Briefs

The purpose of this 4-volume set is to examine some of the applications of lasers in polymer science and technology. Now available for the first time, up-to-date information on this fascinating subject is compiled and presented in compact form. This set focuses on current research and developments in the application of lasers in polymer and biopolymer chemistry. It includes experimental and theoretical details, apparatus, techniques, and applications. This set is a useful source for researchers, students, polymer chemists, and physicists involved in this astonishing field of high technology.

Polymer Journal

Photoluminescence spectroscopy is an important approach for examining the optical interactions in semiconductors and optical devices with the goal of gaining insight into material properties. With contributions from researchers at the forefront of this field, Handbook of Luminescent Semiconductor Materials explores the use of this technique to study semiconductor materials in a variety of applications, including solid-state lighting, solar energy conversion, optical devices, and biological imaging. After introducing basic semiconductor theory and photoluminescence principles, the book focuses on the optical properties of wide-bandgap semiconductors, such as AlN, GaN, and ZnO. It then presents research on narrow-bandgap semiconductors and solid-state lighting. The book also covers the optical properties of semiconductors in the nanoscale regime, including quantum dots and nanocrystals. This handbook explains how photoluminescence spectroscopy is a powerful and practical analytical tool for revealing the fundamentals of light interaction and, thus, the optical properties of semiconductors. The book shows how luminescent semiconductors are used in lasers, photodiodes, infrared detectors, light-emitting diodes, solid-state lamps, solar energy, and biological imaging.

Lasers in Polymer Science and Technology

This book provides the state-of-the-art survey of green techniques in preparation of different classes of nanomaterials, with an emphasis on the use of renewable sources. Key topics covered include fabrication of nanomaterials using green techniques as well as their properties and applications, the use of renewable sources to obtain nanomaterials of different classes, from simple metal and metal oxide nanoparticles to complex bioinspired nanomaterials, economic contributions of nanotechnology to green and sustainable growth, and more. This is an ideal book for students, lecturers, researchers and engineers dealing with versatile (mainly chemical, biological, and medical) aspects of nanotechnology, including fabrication of nanomaterials using green techniques and their properties and applications.

Handbook of Luminescent Semiconductor Materials

Structure and function of the components of the photosynthetic apparatus and the molecular biology of these components have become the dominant themes in advances in our understanding of the light reactions of oxygenic photosynthesis. Oxygenic Photosynthesis: The Light Reactions presents our current understanding of these reactions in thylakoid membranes. Topics covered include the photosystems, the cytochrome b6-f complex, plastocyanin, ferredoxin, FNR, light-harvesting complexes, and the coupling factor. Chapters are also devoted to the structure of thylakoid membranes, their lipid composition, and their biogenesis. Updates on the crystal structures of cytochrome f, ATP synthase and photosystem I are presented and a section on molecular biology and evolution of the photosynthetic apparatus is also included. The chapters in this book provide a comprehensive overview of photosynthetic reactions in eukaryotic thylakoids. The book is intended for a wide audience, including graduate students and researchers active in this field, as well as those individuals who have interests in plant biochemistry and molecular biology or plant physiology.

Green Processes for Nanotechnology

The aim of this work is to provide a fuller spectrum of information in a single source on enzyme-catalyzed reactions than is currently available in any published reference work or as part of any Internet database. The Enzyme Reference: A Comprehensive Guidebook to Enzyme Nomenclature, Reactions, and Methods includes 20,000 review articles and seminal research papers. Additionally, it provides a novel treatment of so-called ATPase and GTPase reactions to account for the noncovalent substratelike and productlike states of molecular motors, elongation factors, transporters, DNA helicases, G-reulatory proteins, and other energases. Includes a compendium of over 6,000 enzyme reactions (including enzyme commission numbers, alternative names, substrates, products, alternative substrates, and properties) Covers over 900 chemical structures of key metabolites and cofactors Index directs readers to the exact pages for over 9,500 enzyme names

Publications of the National Bureau of Standards ... Catalog

Monthly. Papers presented at recent meeting held all over the world by scientific, technical, engineering and medical groups. Sources are meeting programs and abstract publications, as well as questionnaires. Arranged under 17 subject sections, 7 of direct interest to the life scientist. Full programs of meetings listed under sections. Entry gives citation number, paper title, name, mailing address, and any ordering number assigned. Quarterly and annual indexes to subjects, authors, and programs (not available in monthly issues).

Publications of the National Bureau of Standards 1978 Catalog

Metal cluster chemistry is at the cutting edge between molecular and solid-state chemistry and has therefore had a great impact on the researchers working on organic, coordination, and solid-state chemistry, catalysis, physics, and materials science. The development of new sophisticated synthetic techniques has led to enormous progress in the synthesis of this diverse class of compounds. The number of clusters is growing rapidly, since the possible variations in the metal and ligand sphere are numerous. Modern bonding theories, such as the isolobal principle, have allowed a better understanding of the structures and properties of metal clusters, and thus paved the way for the usage of these versatile materials. Catalysis and nanomaterials are just two of the very promising application-oriented fields. Seventy six contributions, written by world experts in this research field, provide extensive coverage of different aspects of cluster chemistry, ranging from synthesis, structure determination, and dynamics to applications. Up-to-date information, including an impressive collection of structural data

and illustrations, extensive coverage of the most important publications of the last decade, and many more features make this three-volume set a complete single-source guide for all researchers working in the area of cluster chemistry.

NBS Special Publication

Since its creation in 1884, Engineering Index has covered virtually every major engineering innovation from around the world. It serves as the historical record of virtually every major engineering innovation of the 20th century. Recent content is a vital resource for current awareness, new production information, technological forecasting and competitive intelligence. The world?s most comprehensive interdisciplinary engineering database, Engineering Index contains over 10.7 million records. Each year, over 500,000 new abstracts are added from over 5,000 scholarly journals, trade magazines, and conference proceedings. Coverage spans over 175 engineering disciplines from over 80 countries. Updated weekly.

Publications of the National Institute of Standards and Technology ... Catalog

Vols. for 1964- have guides and journal lists.

Publications

In this Enrico Fermi School, the first one dedicated to advanced organic materials, the main research results and open problems in science and technology of organic nanostructures have been discussed; in particular, growth techniques, electronic and optical properties, device applications. The necessary background material has been covered and interdisciplinary aspects have been emphasized with the aim of a unified approach to the basic physical phenomena bridging the gap between standard graduate courses and the state of the art in the field. The lecturers have provided authoritative and comprehensive tutorial reviews of the main issues involved in the science and technology of organic materials and their nanostructures. In particular, the following topics have been specifically addressed: charge carrier mobility and transport properties, electrical conductivity of conjugated polymers, charge transfer states in organics, photorefractivity in organics, energy transfer processes in organics, photophysics and fast spectroscopy, technology of polymer electronics and light emitting devices.

Oxygenic Photosynthesis: The Light Reactions

English translation of Fizika i tekhnika poluprovodnikov; covers semiconductor research in countries of the Former Soviet Union. Topics include semiconductor theory, transport phenomena in semiconductors, optics, magneto-optics, and electro-optics of semiconductors, semiconductor lasers, and semiconductor surface physics. Includes book reviews.

Spectral Hole-burning and Related Spectroscopies-- Science and Applications

Progress in Photochemistry and Photophysics is a multiple-volume set that presents a critical review of developments in the inorganic, organic, atmospheric, environmental, material, bio- and polymer fields of photochemistry and photophysics . The book provides essential information for students and researchers in photochemistry and photophysics.

Government Reports Announcements & Index

The Enzyme Reference