# Chapter 36 Optical Properties Of Semiconductors

Optical properties of solids: papers, ed
Colour and the Optical Properties of Materials
Analytical Methods for Coal and Coal Products
Nonlinear Optical Properties of Materials
Selected Progresses in Modern Physics
Optical Properties and Applications of Semiconductors
Leaf Optical Properties
Introduction to Dynamic Modeling of Neuro-Sensory Systems
Optical Properties of Materials and Their Applications
Handbook of Optics, Third Edition Volume IV: Optical Properties of Materials, Nonlinear Optics, Quantum Optics (set)
Handbook of Optics, Third Edition Volume II: Design, Fabrication and Testing, Sources and Detectors, Radiometry and Photometry
Official Methods of Analysis of AOAC International
Optical Properties of Solids
Optical Properties of Condensed Matter and Applications
Novel Plant Bioresources
The Feynman Lectures on Physics, Vol. I
Conducting Polymers, Fundamentals and Applications
Energy Research Abstracts
Graphene Science Handbook
Handbook of Optics: Devices, measurements, and properties
Optical Phenomena in Semiconductor Structures of Reduced Dimensions
Inorganic Ternary Thin films: Anaysis of Optical Properties
Optical Properties of Nanoparticle Systems
Handbook of Optics: Fundamentals, techniques, and design
National Semiconductor Metrology Program
Graphene Science Handbook, Six-Volume Set

## DULCE KEITH

**Optical properties of solids: papers, ed** Academic Press
The most comprehensive and up-to-date optics resource available Prepared under the auspices of the Optical Society of America, the five carefully architected and cross-referenced volumes of the Handbook of Optics, Third Edition, contain everything a student, scientist, or engineer requires to actively work in the field. From the design of complex optical systems to world-class research and development methods, this definitive publication provides unparalleled access to the fundamentals of the discipline and its greatest minds. Individual chapters are written by the world's most renowned experts who explain, illustrate, and solve the entire field of optics. Each volume contains a complete chapter listing for the entire Handbook, extensive chapter glossaries, and a wealth of references. This pioneering work offers unprecedented coverage of optics data, techniques, and applications. Volume II covers design, fabrications, testing, sources, detectors, radiometry, and photometry.
*Colour and the Optical Properties of Materials* Oxford University Press, USA
Discover the Unique Electron Transport Properties of GrapheneThe Graphene Science Handbook is a six-volume set that describes graphene's special structural, electrical, and chemical properties. The book considers how these properties

can be used in different applications (including the development of batteries, fuel cells, photovoltaic cells, and s

**Analytical Methods for Coal and Coal Products** CRC Press

Filling the gap for a description of the optical properties of small particles with sizes less than 1000 nm and to provide a comprehensive overview on the spectral behavior of nanoparticulate matter, this is the most up-to-date reference on the optical physics of nanoparticle systems. The author, an expert in the field with both academic and industrial experience, concentrates on the linear optical properties, elastic light scattering and absorption of single nanoparticles and on reflectance and transmittance of nanoparticle matter.

**Nonlinear Optical Properties of Materials** CRC Press

Colour and the Optical Properties of Materials carefully introduces the science behind the subject, along with many modern and cutting-edge applications, chosen to appeal to today's students. For science students, it provides a broad introduction to the subject and the many applications of colour. To more applied students, such as engineering and arts students, it provides the essential scientific background to colour and the many applications. New to this Edition: The chapter framework of the first edition will be retained, with each chapter being substantially rewritten and some material would be relocated. Some chapters will be rewritten in a clearer fashion, e.g. There have been no significant advances in the understanding of rainbows recently, but the text could be clarified and improved. Colour has been an important attribute of many nano-particle containing systems, such as quantum dots. This aspect will be included, e.g. the colour of gold ruby glass, described in Chapter 5 as part of scattering phenomena now is better treated in terms of gold nanoparticles and surface plasmons. This would probably be transferred to Chapter 10 and considered in tandem with the colour of metals such as copper, silver and gold. A similar state of affairs applies to silver nanoparticles and polychromic glass. Some chapters will include extensive new material, e.g. Chapter 8, colours due to molecular processes [organic LEDs etc], and Chapter 12, Displays, [touch screen technologies]. For all chapters it would be intended to take into account the current scientific literature up to the time of submission – say up to the end of 2009. The end of chapter Further Reading sections would reflect this up-to-date overview. The end of chapter problems will be strengthened and expanded.

*Selected Progresses in Modern Physics* ScholarlyEditions

This book deals with the practical fundamentals and applications of conducting polymers. Written from a pedagogical point of view and at a very basic level, it provides a thorough grounding in CPs ideal for further work, as a reference, or as a supplementary course text.

*Optical Properties and Applications of Semiconductors* John Wiley & Sons

This book gives an introduction to the optical properties of solids, including many new topics that have not been previously covered in other solid state texts at this level. The fundamental principles of absorption, reflection, luminescence and light scattering are discussed for a wide range of materials, including crystalline insulators and semiconductors, glasses, metals, and molecular materials. Classical and quantum models are used where appropriate along with recent experimental data. Examples

include semiconductor quantum wells, organic semiconductors, vibronic solid state lasers, and nonlinear optics.

*Leaf Optical Properties* Elsevier

Authoritative reference treats the formation, structure, optical properties, and uses of thin solid films, emphasizing causes of their unusual qualities. 162 figures. 19 tables. 1955 edition.

**Introduction to Dynamic Modeling of Neuro-Sensory Systems** John Wiley & Sons

This book presents peer-reviewed articles from the 1st International Conference on Trends in Modern Physics (TiMP 2021) held at Assam Don Bosco University in Guwahati, India, between February 26 and 27, 2021. This conference was the 3rd in a series of annual conferences of the Department of Physics, ADBU, with the 1st and 2nd being national conferences. The conference was jointly organized by the Department of Physics, ADBU, and the Indian Association of Physics Teachers (IAPT) to promote greater synergy between thematic areas of astrophysics and cosmology, plasma physics, material and nanophysics, nuclear physics, and particle physics

**Optical Properties of Materials and Their Applications** Basic Books

"The whole thing was basically an experiment," Richard Feynman said late in his career, looking back on the origins of his lectures. The experiment turned out to be hugely successful, spawning publications that have remained definitive and introductory to physics for decades. Ranging from the basic principles of Newtonian physics through such formidable theories as general relativity and quantum mechanics, Feynman's lectures stand as a monument of clear exposition and deep insight. Timeless and collectible, the lectures are essential reading, not just for students of physics but for anyone seeking an introduction to the field from the inimitable Feynman.

**Handbook of Optics, Third Edition Volume IV: Optical Properties of Materials, Nonlinear Optics, Quantum Optics (set)** John Wiley & Sons

Theory and Phenomena of Metamaterials offers an in-depth look at the theoretical background and basic properties of electromagnetic artificial materials, often called metamaterials. A volume in the Metamaterials Handbook, this book provides a comprehensive guide to working with metamaterials using topics presented in a concise review format along with numerous references. With contributions from leading researchers, this text covers all areas where artificial materials have been developed. Each chapter in the text features a concluding summary as well as various cross references to address a wide range of disciplines in a single volume.

*Handbook of Optics, Third Edition Volume II: Design, Fabrication and Testing, Sources and Detectors, Radiometry and Photometry* CRC Press

Nano-Scale Materials - From Science to Technology

Official Methods of Analysis of AOAC International Springer Science & Business Media

This book is mostly concerned on the experimental research of the nonlinear optical characteristics of various media, low- and high-order harmonic generation in different materials, and formation, and nonlinear optical characterization of clusters. We also demonstrate the inter-connection between these areas of nonlinear optics. Nonlinear optical properties of media such as

optical limiting can be applied in various areas of science and technology. To define suitable materials for these applications, one has to carefully analyse the nonlinear optical characteristics of various media, such as the nonlinear refractive indices, coefficients of nonlinear absorption, saturation absorption intensities, etc. Knowing the nonlinear optical parameters of materials is also important for describing the propagation effects, self-interaction of intense laser pulses, and optimisation of various nonlinear optical processes. Among those processes one can admit the importance of the studies of the frequency conversion of coherent laser sources. The area of interest for nonlinear optical characterization of materials is also closely related with new field of nanostructures formation and application during laser-matter interaction. We show how the nonlinear optical analysis of materials leads to improvement of their high-order nonlinear optical response during the interaction with strong laser fields. Ablation-induced nanoparticles formation is correlated with their applications as efficient sources of coherent short-wavelength photons. From other side, recent achievements of harmonic generation in plasmas are closely related with the knowledge of the properties of materials in the laser plumes. All of these studies are concerned with the low-order nonlinear optical features of various materials. The novelty of the approach developed in present book is related with inter-connection of those studies with each other.

*Optical Properties of Solids* John Wiley & Sons

Optical Properties of Solids covers the important concepts of intrinsic optical properties and photoelectric emission. The book starts by providing an introduction to the fundamental optical spectra of solids. The text then discusses Maxwell's equations and the dielectric function; absorption and dispersion; and the theory of free-electron metals. The quantum mechanical theory of direct and indirect transitions between bands; the applications of dispersion relations; and the derivation of an expression for the dielectric function in the self-consistent field approximation are also encompassed. The book further tackles current-current correlations; the fluctuation-dissipation theorem; and the effect of surface plasmons on optical properties and photoemission. People involved in the study of the optical properties of solids will find the book invaluable.

*Optical Properties of Condensed Matter and Applications* Nova Publishers

This text is intended to provide an in-depth, self-contained, treatment of optical waveguide theory. We have attempted to emphasize the underlying physical processes, stressing conceptual aspects, and have developed the mathematical analysis to parallel the physical intuition. We also provide comprehensive supplementary sections both to augment any deficiencies in mathematical background and to provide a self-consistent and rigorous mathematical approach. To assist in. understanding, each chapter con centrates principally on a single idea and is therefore comparatively short. Furthermore, over 150 problems with complete solutions are given to demonstrate applications of the theory. Accordingly, through simplicity of approach and numerous examples, this book is accessible to undergraduates. Many fundamental topics are presented here for the first time, but, more importantly, the material is brought together to give a unified treatment of basic ideas using the

simplest approach possible. To achieve such a goal required a maturation of the subject, and thus the text was intentionally developed over a protracted period of the last 10 years.

**Novel Plant Bioresources** Cambridge University Press

Computational chemistry is a means of applying theoretical ideas using computers and a set of techniques for investigating chemical problems within which common questions vary from molecular geometry to the physical properties of substances. Theory and Applications of Computational Chemistry: The First Forty Years is a collection of articles on the emergence of computational chemistry. It shows the enormous breadth of theoretical and computational chemistry today and establishes how theory and computation have become increasingly linked as methodologies and technologies have advanced. Written by the pioneers in the field, the book presents historical perspectives and insights into the subject, and addresses new and current methods, as well as problems and applications in theoretical and computational chemistry. Easy to read and packed with personal insights, technical and classical information, this book provides the perfect introduction for graduate students beginning research in this area. It also provides very readable and useful reviews for theoretical chemists. * Written by well-known leading experts * Combines history, personal accounts, and theory to explain much of the field of theoretical and compuational chemistry * Is the perfect introduction to the field

The Feynman Lectures on Physics, Vol. I diplom.de

Semiconductors with optical characteristics have found widespread use in evolving semiconductor photovoltaics, where optical features are important. The industrialization of semiconductors and their allied applications have paved the way for optical measurement techniques to be used in new ways. Due to their unique properties, semiconductors are key components in the daily employed technologies in healthcare, computing, communications, green energy, and a range of other uses. This book examines the fundamental optical properties and applications of semiconductors. It summarizes the information as well as the optical characteristics and applicability of semiconductors through an in-depth review of the literature. Accomplished experts in the field share their knowledge and examine new developments. FEATURES Comprehensive coverage of all types of optical applications using semiconductors Explores relevant composite materials and devices for each application Addresses the optical properties of crystalline and amorphous semiconductors Describes new developments in the field and future potential applications Optical Properties and Applications of Semiconductors is a comprehensive reference and an invaluable resource for engineers, scientists, academics, and industry R&D teams working in applied physics.

Conducting Polymers, Fundamentals and Applications Academic Press

Presents state-of-the-art research into leaf interactions with light, for scientists working in remote sensing, plant physiology, ecology and resource management.

**Energy Research Abstracts** CRC Press

Novel Plant Bioresources: Applications in Food, Medicine and Cosmetics serves as the definitive source of information on under-utilized plant species, and fills a key niche in our understanding of the relationship of human beings with under-

utilized plants. By covering applications in food, medicine and cosmetics, the book has a broad appeal. In a climate of growing awareness about the perils of biodiversity loss, the world is witnessing an unprecedented interest in novel plants, which are increasingly prized for their potential use in aromas, dyes, foods, medicines and cosmetics. This book highlights these plants and their uses. After an introductory section which sets the scene with an overview of the historical and legislative importance of under-utilized plants, the main four parts of the book are dedicated to the diverse potential application of novel plant bioresources in Food, Medicine, Ethnoveterinary Medicine and Cosmetics. Examples and contributors are drawn from Africa, Europe, the USA and Asia. The economic, social, and cultural aspects of under-utilized plant species are addressed, and the book provides a much needed boost to the on-going effort to focus attention on under-utilized plant species and conservation initiatives. By focusing on novel plants and the agenda for sustainable utilization, Novel Plant Bioresources highlights key issues relevant to under-utilized plant genetic resources, and brings together international scholars on this important topic.

Graphene Science Handbook McGraw Hill Professional

Annotation -- A new volume in the field's bestselling optics reference -- an entirely new opus focusing on x-ray, nonlinear, and vision optics -- Provides the same mix of tutorial writing with in-depth reference material that distinguished Volumes I & II.

Handbook of Optics: Devices, measurements, and properties CRC Press

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