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Hydrogen Bonding - New Insights - Slawomir Grabowski
2006-10-07

This book uses examples from experimental studies to illustrate theoretical investigations, allowing greater understanding of hydrogen bonding phenomena. The most important topics in recent studies are covered. This volume is an invaluable resource that will be of particular interest to physical and theoretical chemists, spectroscopists, crystallographers and those involved with chemical physics.

Cyclotron Produced Radionuclides - International Atomic Energy Agency 2009

Application of radioisotopes has shown significant growth in the past decade, and a major factor contributing towards this growth is the availability of a large number of cyclotrons dedicated to the production of radioisotopes for medical applications. Although there are many articles in journals on cyclotrons and their use for radioisotope production, there is no

single source of information for beginners on radioisotope production using cyclotrons. This publication attempts to address this deficiency. It contains chapters on accelerator technology, theoretical considerations of nuclear reactions, the technology behind targetry, techniques on preparation of targets, irradiation of targets under high beam currents, target processing and target recovery.

Biology HL - Guy Décarie 2011-01

Information in Contemporary Society - Natalie Greene
Taylor 2019-03-12

This book constitutes the proceedings of the 14th International Conference on Information in Contemporary Society, iConference 2019, held in Washington, DC, USA, in March/April 2019. The 44 full papers and 33 short papers presented in this volume were carefully reviewed and selected from 133 submitted full papers and 88 submitted short papers. The papers are organized in the

following topical sections: Scientific work and data practices; methodological concerns in (big) data research; concerns about “smart” interactions and privacy; identity questions in online communities; measuring and tracking scientific literature; limits and affordances of automation; collecting data about vulnerable populations; supporting communities through public libraries and infrastructure; information behaviors in academic environments; data-driven storytelling and modeling; online activism; digital libraries, curation and preservation; social-media text mining and sentiment analysis; data and information in the public sphere; engaging with multi-media content; understanding online behaviors and experiences; algorithms at work; innovation and professionalization in technology communities; information behaviors on Twitter; data mining and NLP; informing technology design through offline experiences; digital tools for health management; environmental and visual literacy; and addressing social problems in iSchool research.

Laser Program Annual Report - 1987

Fundamentals of Inhomogeneous Fluids - Douglas Henderson
2021-12-17

A monograph examining recent progress in the field of inhomogeneous fluids, focusing on the theoretical - as well as experimental - techniques used. It presents the comprehensive theory of first-order phase transitions, including melting, and contains numerous figures, tables and display equations.;The contributors treat such subjects as: exact sum rules for inhomogeneous fluids, explaining density functional and integral equation methods; exact solutions for two-dimensional homogeneous and inhomogeneous plasmas; current advances in the

theory of interfacial electrochemistry; wetting experiments and the theory of wetting; freezing, with an emphasis on quantum systems and homogeneous nucleation in liquid-vapour and solid-liquid transitions; self-organizing liquids as well as kinetic phenomena in inhomogeneous fluids, using a modified Enskog theory.;Featuring over 1000 bibliographic citations, this volume is aimed at physical, surface, colloid and surfactant chemists; also physicists, electrochemists and graduate-level students in these disciplines.

Elasticity - Martin H. Sadd 2010-08-04

Although there are several books in print dealing with elasticity, many focus on specialized topics such as mathematical foundations, anisotropic materials, two-dimensional problems, thermoelasticity, non-linear theory, etc. As such they are not appropriate candidates for a general textbook. This book provides a concise and organized presentation and development of general theory of elasticity. This text is an excellent book teaching guide. Contains exercises for student engagement as well as the integration and use of MATLAB Software Provides development of common solution methodologies and a systematic review of analytical solutions useful in applications of

Quantum Physics - Florian Scheck 2014-07-08

Scheck's Quantum Physics presents a comprehensive introductory treatment, ideally suited for a two-semester course. Part One covers the basic principles and prime applications of quantum mechanics, from the uncertainty relations to many-body systems. Part Two introduces to relativistic quantum field theory and ranges from symmetries in quantum physics to electroweak interactions. Numerous worked-out examples as well as exercises, with solutions or hints, enables the book's

use as an accompanying text for courses, and also for independent study. For both parts, the necessary mathematical framework is treated in adequate form and detail. The book ends with appendices covering mathematical fundamentals and enrichment topics, plus selected biographical notes on pioneers of quantum mechanics and quantum field theory. The new edition was thoroughly revised and now includes new sections on quantization using the path integral method and on deriving generalized path integrals for bosonic and fermionic fields.

Real Analysis - N. L. Carothers 2000-08-15

A text for a first graduate course in real analysis for students in pure and applied mathematics, statistics, education, engineering, and economics.

Lie Groups and Algebraic Groups - Arkadij L. Onishchik 2012-12-06

This book is based on the notes of the authors' seminar on algebraic and Lie groups held at the Department of Mechanics and Mathematics of Moscow University in 1967/68. Our guiding idea was to present in the most economic way the theory of semisimple Lie groups on the basis of the theory of algebraic groups. Our main sources were A. Borel's paper [34], C. Chevalley's seminar [14], seminar "Sophus Lie" [15] and monographs by C. Chevalley [4], N. Jacobson [9] and J-P. Serre [16, 17]. In preparing this book we have completely rearranged these notes and added two new chapters: "Lie groups" and "Real semisimple Lie groups". Several traditional topics of Lie algebra theory, however, are left entirely disregarded, e.g. universal enveloping algebras, characters of linear representations and (co)homology of Lie algebras. A distinctive feature of this book is that almost all the material is presented

as a sequence of problems, as it had been in the first draft of the seminar's notes. We believe that solving these problems may help the reader to feel the seminar's atmosphere and master the theory. Nevertheless, all the non-trivial ideas, and sometimes solutions, are contained in hints given at the end of each section. The proofs of certain theorems, which we consider more difficult, are given directly in the main text. The book also contains exercises, the majority of which are an essential complement to the main contents.

Handbook of Image and Video Processing - Alan C. Bovik 2010-07-21

55% new material in the latest edition of this "must-have for students and practitioners of image & video processing! This Handbook is intended to serve as the basic reference point on image and video processing, in the field, in the research laboratory, and in the classroom. Each chapter has been written by carefully selected, distinguished experts specializing in that topic and carefully reviewed by the Editor, Al Bovik, ensuring that the greatest depth of understanding be communicated to the reader. Coverage includes introductory, intermediate and advanced topics and as such, this book serves equally well as classroom textbook as reference resource. • Provides practicing engineers and students with a highly accessible resource for learning and using image/video processing theory and algorithms • Includes a new chapter on image processing education, which should prove invaluable for those developing or modifying their curricula • Covers the various image and video processing standards that exist and are emerging, driving today's explosive industry • Offers an understanding of what images are, how they are modeled, and gives an introduction to how they are

perceived • Introduces the necessary, practical background to allow engineering students to acquire and process their own digital image or video data • Culminates with a diverse set of applications chapters, covered in sufficient depth to serve as extensible models to the reader's own potential applications About the Editor... Al Bovik is the Cullen Trust for Higher Education Endowed Professor at The University of Texas at Austin, where he is the Director of the Laboratory for Image and Video Engineering (LIVE). He has published over 400 technical articles in the general area of image and video processing and holds two U.S. patents. Dr. Bovik was Distinguished Lecturer of the IEEE Signal Processing Society (2000), received the IEEE Signal Processing Society Meritorious Service Award (1998), the IEEE Third Millennium Medal (2000), and twice was a two-time Honorable Mention winner of the international Pattern Recognition Society Award. He is a Fellow of the IEEE, was Editor-in-Chief, of the IEEE Transactions on Image Processing (1996-2002), has served on and continues to serve on many other professional boards and panels, and was the Founding General Chairman of the IEEE International Conference on Image Processing which was held in Austin, Texas in 1994. * No other resource for image and video processing contains the same breadth of up-to-date coverage * Each chapter written by one or several of the top experts working in that area * Includes all essential mathematics, techniques, and algorithms for every type of image and video processing used by electrical engineers, computer scientists, internet developers, bioengineers, and scientists in various, image-intensive disciplines
Radiological Safety Aspects of the Operation of Electron Linear Accelerators - William P. Swanson 1979

Electron linear accelerators are being used throughout the world in increasing numbers in a variety of important applications. Foremost among these is their role in the treatment of cancer. Commercial uses include non-destructive testing by radiography, food preservation, product sterilization and radiation processing of materials such as plastics and adhesives. Scientific applications include investigations in radiation biology, radiation chemistry, nuclear and elementary particle physics and radiation research. This manual provides authoritative guidance in radiation protection for this important category of radiation sources.

Frequency Modulated Cyclotron - 1946

Nanoferroics - M.D. Glinchuk 2013-05-13

This book covers the physical properties of nanosized ferroics, also called nanoferroics. Nanoferroics are an important class of ceramic materials that substitute conventional ceramic ferroics in modern electronic devices. They include ferroelectric, ferroelastic, magnetic and multiferroic nanostructured materials. The phase transitions and properties of these nanostructured ferroics are strongly affected by the geometric confinement originating from surfaces and interfaces. As a consequence, these materials exhibit a behavior different from the corresponding bulk crystalline, ceramic and powder ferroics. This monograph offers comprehensive coverage of size- and shape-dependent effects at the nanoscale; the specific properties that these materials have been shown to exhibit; the theoretical approaches that have been successful in describing the size-dependent effects observed experimentally; and the technological aspects of many

chemical and physico-chemical nanofabrication methods relevant to making nanoferroic materials and composites. The book will be of interest to an audience of condensed matter physicists, material scientists and engineers, working on ferroic nanostructured materials, their fundamentals, fabrication and device applications.

Advances in Theory and Practice of Computational Mechanics - Lakhmi C. Jain 2020-03-31

This book discusses physical and mathematical models, numerical methods, computational algorithms and software complexes, which allow high-precision mathematical modeling in fluid, gas, and plasma mechanics; general mechanics; deformable solid mechanics; and strength, destruction and safety of structures. These proceedings focus on smart technologies and software systems that provide effective solutions to real-world problems in applied mechanics at various multi-scale levels. Highlighting the training of specialists for the aviation and space industry, it is a valuable resource for experts in the field of applied mathematics and mechanics, mathematical modeling and information technologies, as well as developers of smart applied software systems.

The Mathematica GuideBook for Programming - Michael Trott 2004-10-28

This comprehensive, detailed reference provides readers with both a working knowledge of Mathematica in general and a detailed knowledge of the key aspects needed to create the fastest, shortest, and most elegant implementations possible. It gives users a deeper understanding of Mathematica by instructive implementations, explanations, and examples from a range of disciplines at varying levels of complexity. The three volumes -- Programming, Graphics, and Mathematics,

total 3,000 pages and contain more than 15,000 Mathematica inputs, over 1,500 graphics, 4,000+ references, and more than 500 exercises. This first volume begins with the structure of Mathematica expressions, the syntax of Mathematica, its programming, graphic, numeric and symbolic capabilities. It then covers the hierarchical construction of objects out of symbolic expressions, the definition of functions, the recognition of patterns and their efficient application, program flows and program structuring, and the manipulation of lists. An indispensable resource for students, researchers and professionals in mathematics, the sciences, and engineering.

Implicit Filtering - C. T. Kelley 2011-09-29

A description of the implicit filtering algorithm, its convergence theory and a new MATLAB® implementation.

The Mathematical Gardner - David A. Klarner 2012-12-06

--- The articles in this book are dedicated to Martin Gardner, the world's greatest expositor and popularizer of mathematics. While our papers are confined to this single subject, Gardner's interests and accomplishments have a wide range of subjects. Hence, we have entitled the book the Mathematical Gardner, and would like to see other volumes such as the Magical, the Literary, the Philosophical, or the Scientific Gardner accompany it. Of course, our title is also an appropriate pun, for Martin Gardner's relationship to the mathematical community is similar to a gardener's relationship to a beautiful flower garden. The contributors to this volume comprise only a small part of a large body of mathematicians whose work has been nurtured by its exposition in "Mathematical Games"; Martin's column which appears every month in Scientific American. More than just a mathematical journalist, Martin connects his

readers by passing along problems and information and stimulating creative activity. Thus, he is a force behind the scenes as well as a public figure. Two people were particularly helpful in putting this book together.

Encyclopedia of Continuum Mechanics - Holm Altenbach
2019-09-13

This Encyclopedia covers the entire science of continuum mechanics including the mechanics of materials and fluids. The encyclopedia comprises mathematical definitions for continuum mechanical modeling, fundamental physical concepts, mechanical modeling methodology, numerical approaches and many fundamental applications. The modelling and analytical techniques are powerful tools in mechanical civil and aerospace engineering, plus in related fields of plasticity, viscoelasticity and rheology. Tensor-based and reference-frame-independent, continuum mechanics has recently found applications in geophysics and materials. This three-volume encyclopedia comprises approximately uniform 600 entries.

Applied Mathematics: Body and Soul - Kenneth Eriksson
2003-10-17

Applied Mathematics: Body & Soul is a mathematics education reform project developed at Chalmers University of Technology and includes a series of volumes and software. The program is motivated by the computer revolution opening new possibilities of computational mathematical modeling in mathematics, science and engineering. It consists of a synthesis of Mathematical Analysis (Soul), Numerical Computation (Body) and Application. Volumes I-III present a modern version of Calculus and Linear Algebra, including constructive/numerical techniques and applications intended for undergraduate programs in engineering and

science. Further volumes present topics such as Dynamical Systems, Fluid Dynamics, Solid Mechanics and Electro-Magnetics on an advanced undergraduate/graduate level. The authors are leading researchers in Computational Mathematics who have written various successful books.

Error Correction Coding - Todd K. Moon 2005-07-22
An unparalleled learning tool and guide to error correction coding Error correction coding techniques allow the detection and correction of errors occurring during the transmission of data in digital communication systems. These techniques are nearly universally employed in modern communication systems, and are thus an important component of the modern information economy. Error Correction Coding: Mathematical Methods and Algorithms provides a comprehensive introduction to both the theoretical and practical aspects of error correction coding, with a presentation suitable for a wide variety of audiences, including graduate students in electrical engineering, mathematics, or computer science. The pedagogy is arranged so that the mathematical concepts are presented incrementally, followed immediately by applications to coding. A large number of exercises expand and deepen students' understanding. A unique feature of the book is a set of programming laboratories, supplemented with over 250 programs and functions on an associated Web site, which provides hands-on experience and a better understanding of the material. These laboratories lead students through the implementation and evaluation of Hamming codes, CRC codes, BCH and R-S codes, convolutional codes, turbo codes, and LDPC codes. This text offers both "classical" coding theory-such as Hamming, BCH, Reed-Solomon, Reed-Muller, and convolutional codes-as

well as modern codes and decoding methods, including turbo codes, LDPC codes, repeat-accumulate codes, space time codes, factor graphs, soft-decision decoding, Guruswami-Sudan decoding, EXIT charts, and iterative decoding. Theoretical complements on performance and bounds are presented. Coding is also put into its communications and information theoretic context and connections are drawn to public key cryptosystems. Ideal as a classroom resource and a professional reference, this thorough guide will benefit electrical and computer engineers, mathematicians, students, researchers, and scientists. An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.

Persuasive Communication - Richard O. Young 2016-07-15

This updated and expanded edition of *Persuasive Communication* offers a comprehensive introduction to persuasion and real-world decision making. Drawing on empirical research from social psychology, neuroscience, business communication research, cognitive science, and behavioral economics, Young reveals the thought processes of many different audiences—from investors to CEOs—to help students better understand why audiences make the decisions they make and how to influence them. The book covers a broad range of communication techniques, richly illustrated with compelling examples, including resumes, speeches, and slide presentations, to help students recognize persuasive methods that do, and do not, work. A detailed analysis of the emotions and biases that go into decision making arms students with perceptive insights into human behavior and helps them apply this understanding with various decision-making aids. Students will learn how to impact potential employers, clients, and other audiences essential to

their success. This book will prove fascinating to many, and especially useful for students of persuasion, rhetoric, and business communication.

Measurement, Instrumentation, and Sensors Handbook -

John G. Webster 2017-12-19

The Second Edition of the bestselling *Measurement, Instrumentation, and Sensors Handbook* brings together all aspects of the design and implementation of measurement, instrumentation, and sensors. Reflecting the current state of the art, it describes the use of instruments and techniques for performing practical measurements in engineering, physics, chemistry, and the life sciences and discusses processing systems, automatic data acquisition, reduction and analysis, operation characteristics, accuracy, errors, calibrations, and the incorporation of standards for control purposes. Organized according to measurement problem, the *Spatial, Mechanical, Thermal, and Radiation Measurement* volume of the Second Edition: Contains contributions from field experts, new chapters, and updates to all 96 existing chapters Covers instrumentation and measurement concepts, spatial and mechanical variables, displacement, acoustics, flow and spot velocity, radiation, wireless sensors and instrumentation, and control and human factors A concise and useful reference for engineers, scientists, academic faculty, students, designers, managers, and industry professionals involved in instrumentation and measurement research and development, *Measurement, Instrumentation, and Sensors Handbook, Second Edition: Spatial, Mechanical, Thermal, and Radiation Measurement* provides readers with a greater understanding of advanced applications.

Foundations of Radiation Theory and Quantum

Electrodynamics - Asim Barut 2013-06-29

National Construction Safety Team Act - United States. Congress. House. Committee on Rules 2002

Nuclear Regulatory Commission Issuances - U.S. Nuclear Regulatory Commission 1998

Upgrading Environmental Radiation Data - J. E. Watson 1980

High Energy Density Materials - Thomas M. Klapötke 2007-06-12

Introduction to Quantum Mechanics - David J. Griffiths 2019-11-20

Changes and additions to the new edition of this classic textbook include a new chapter on symmetries, new problems and examples, improved explanations, more numerical problems to be worked on a computer, new applications to solid state physics, and consolidated treatment of time-dependent potentials.

Mathematics for Computer Science - Eric Lehman 2017-03-08

This book covers elementary discrete mathematics for computer science and engineering. It emphasizes mathematical definitions and proofs as well as applicable methods. Topics include formal logic notation, proof methods; induction, well-ordering; sets, relations; elementary graph theory; integer congruences; asymptotic notation and growth of functions; permutations and combinations, counting principles; discrete probability. Further selected topics may also be covered, such as recursive definition and structural

induction; state machines and invariants; recurrences; generating functions.

Mathematics Higher Level (core) - John Gibson 1999

The Atomic Nucleus - R. D. Evans 2003-01-01

Non-Equilibrium Statistical Mechanics - Ilya Prigogine 2017-03-17

Groundbreaking monograph by Nobel Prize winner for researchers and graduate students covers Liouville equation, anharmonic solids, Brownian motion, weakly coupled gases, scattering theory and short-range forces, general kinetic equations, more. 1962 edition.

Spin Fluctuations in Itinerant Electron Magnetism - Toru Moriya 2012-12-06

Ferromagnetism of metallic systems, especially those including transition metals, has been a controversial subject of modern science for a long time. This controversy stems from the apparent dual character of the d-electrons responsible for magnetism in transition metals, i.e., they are itinerant electrons described by band theory in their ground state, while at finite temperatures they show various properties that have long been attributed to a system consisting of local magnetic moments. The most familiar example of these properties is the Curie-Weiss law of magnetic susceptibility obeyed by almost all ferromagnets above their Curie temperatures. At first the problem seemed to be centered around whether the d-electrons themselves are localized or itinerant. This question was settled in the 1950s and early 1960s by various experimental investigations, in particular by observations of d-electron Fermi surfaces in ferromagnetic transition metals. These observations are generally consistent with the results of band

calculations. Theoretical investigations since then have concentrated on explaining this dual character of d-electron systems, taking account of the effects of electron-electron correlations in the itinerant electron model. The problem in physical terms is to study the spin density fluctuations, which are neglected in the mean-field or one-electron theory, and their influence on the physical properties.

Elementary Nuclear Theory - Hans Albrecht Bethe
2006-01-01

Suitable for advanced undergraduates and graduate students, this compact treatment of basic theory of nuclear forces, structures, and reactions is based on familiar results of nonrelativistic quantum theory. 1956 edition.

How to Perform Radon Inspections - Nick Gromicko
2015-08-14

Geological Survey Research 1965 - Geological Survey
(U.S.) 1965

Universal Artificial Intelligence - Marcus Hutter
2006-01-17

Personal motivation. The dream of creating artificial devices that reach or outperform human intelligence is an old one. It is also one of the dreams of my youth, which have never left me. What makes this challenge so interesting? A solution would have enormous implications on our society, and there are reasons to believe that the AI problem can be solved in my expected lifetime. So, it's worth sticking to it for a lifetime, even if it takes 30 years or so to reap the benefits. The AI problem. The science of artificial intelligence (AI) may be defined as the construction of intelligent systems

and their analysis. A natural definition of a system is anything that has an input and an output stream. Intelligence is more complicated. It can have many faces like creativity, solving problems, pattern recognition, classification, learning, induction, deduction, building analogies, optimization, surviving in an environment, language processing, and knowledge. A formal definition incorporating every aspect of intelligence, however, seems difficult. Most, if not all known facets of intelligence can be formulated as goal driven or, more precisely, as maximizing some utility function. It is, therefore, sufficient to study goal-driven AI; e. g. the (biological) goal of animals and humans is to survive and spread. The goal of AI systems should be to be useful to humans.

Data Mining for Bioinformatics - Sumeet Dua 2012-11-06
Covering theory, algorithms, and methodologies, as well as data mining technologies, Data Mining for Bioinformatics provides a comprehensive discussion of data-intensive computations used in data mining with applications in bioinformatics. It supplies a broad, yet in-depth, overview of the application domains of data mining for bioinformatics to help readers from both biology and computer science backgrounds gain an enhanced understanding of this cross-disciplinary field. The book offers authoritative coverage of data mining techniques, technologies, and frameworks used for storing, analyzing, and extracting knowledge from large databases in the bioinformatics domains, including genomics and proteomics. It begins by describing the evolution of bioinformatics and highlighting the challenges that can be addressed using data mining techniques. Introducing the various data mining techniques that can be employed in biological databases,

the text is organized into four sections: Supplies a complete overview of the evolution of the field and its intersection with computational learning Describes the role of data mining in analyzing large biological databases—explaining the breath of the various feature selection and feature extraction techniques that data mining has to offer Focuses on concepts of unsupervised learning using clustering techniques and its application to large biological data Covers supervised learning using classification techniques most commonly used in bioinformatics—addressing the need for validation and benchmarking of inferences derived using either clustering or classification The book describes the various biological databases prominently referred to in bioinformatics and includes a detailed list of the applications of advanced clustering algorithms used in bioinformatics. Highlighting the challenges encountered during the application of classification on biological databases, it considers systems of both single and

ensemble classifiers and shares effort-saving tips for model selection and performance estimation strategies. The Cambridge Handbook of Creativity and Personality Research - Gregory J. Feist 2017-03-06

As individual subjects, creativity and personality have been the focus of much research and many publications. This Cambridge Handbook is the first to bring together these two topics and explores how personality and behavior affects creativity. Contributors from around the globe present cutting-edge research about how personality traits and motives make creative behavior more likely. Many aspects of personality and behavior are examined in the chapters, including genius, emotions, psychopathology, entrepreneurship, and multiculturalism, to analyse the impact of these on creativity. The Cambridge Handbook of Creativity and Personality Research will be the definitive resource for researchers, students and academics who study psychology, personality, and creativity.