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Managing aquifer recharge - UNESCO 2021-11-25

Bismuth - Ying Zhou 2018-06-20
Bismuth (Bi) is a post-transition metal element with the atomic number of 83, which belongs to the pnictogen group elements in Period 6 in the elemental periodic table. As a heavy metal, the hazard of Bi is unusually low in contrast to its neighbors Pb and Sb. This property, along with other typical characteristics like strong diamagnetism and low thermal conductivity, makes Bi attractive in industrial applications. There are more than 100 commercial bismuth products, from pharmaceutical to industrial catalysts. Based on the wide applications of Bi materials, this book goes further and mainly focuses on the potential uses of Bi-based materials, which consist of nine chapters. In addition, a special chapter concerning the defect in bismuth is also presented.

Electronic, Magnetic, and Optical Materials - Pradeep Fulay 2016-11-18
This book integrates materials science with other engineering subjects such as physics, chemistry and electrical engineering. The authors discuss devices and technologies used by the electronics, magnetics and photonics industries and offer a perspective on the manufacturing technologies used in device fabrication. The new addition includes chapters on optical properties and devices and addresses nanoscale phenomena and nanoscience, a subject that has made significant progress in the past decade regarding the fabrication of various materials and devices with nanometer-scale features.

The Science and Engineering of Materials - Donald R. Askeland 2013-11-11
The Science and Engineering of Materials, Third Edition, continues the general theme of the earlier editions in providing an understanding of the relationship between structure, processing, and properties of materials. This text is intended for use by students of engineering rather than materials, at first degree level who have completed prerequisites in chemistry, physics, and mathematics. The author assumes these stu dents will have had little or no exposure to engineering sciences such as statics, dynamics, and mechanics. The material presented here admittedly cannot and should not be covered in a one-semester course. By selecting the appropriate topics, however, the instructor can emphasise metals, provide a general overview of materials, concentrate on mechani cal behaviour, or focus on physical properties. Additionally, the text provides the student with a useful reference for accompanying courses in manufacturing, design, or materials selection. In an introductory, survey text such as this, complex and comprehensive design problems cannot be realistically introduced because materials design and selection rely on many factors that come later in the student's curriculum. To introduce the student to elements of design, however, more than 100 examples dealing with materials selection and design considerations are included in this edition.

Problems In General Physics - I.E. Irodov 2008-12-01

Intelligent Communication, Control and Devices - Sushabhan Choudhury 2019-08-28
The book focuses on the integration of intelligent communication systems, control systems, and devices related to all aspects of engineering and sciences. It includes high-quality research papers from the 3rd international conference, ICICCD 2018, organized by the Department of Electronics, Instrumentation and Control Engineering at the University of Petroleum and Energy Studies, Dehradun on 21–22 December 2018. Covering a range of recent advances in intelligent communication, intelligent control and intelligent devices., the book presents original research and findings as well as researchers' and industrial practitioners' practical development experiences of.

Objective Physics for NEET. - Kumar Abhay 2016
Objective Physics for NEET and Other Medical Examination has been written to build a firm foundation of the guiding principles of physics among the medical aspirants. It is mainly designed for NEET but would also be useful for other medical entrance examinations, such as AIIMS, JIPMER and state-level exams.

An Introduction to Nanoscience and Nanotechnology - Alain Nouailhat 2010-01-05
This book recalls the basics required for an understanding of the nanoworld (quantum physics, molecular biology, micro and nanoelectronics) and gives examples of applications in various fields: materials, energy, devices, data management and life sciences. It is clearly shown how the nanoworld is at the crossing point of knowledge and innovation. Written by an expert who spent a large part of his professional life in the field, the title also gives a general insight into the evolution of nanosciences and nanotechnologies. The reader is thus provided with an introduction to this complex area with different "tracks" for further personal comprehension and reflection. This guided and illustrated tour also reveals the importance of the nanoworld in everyday life.

Handbook of Physics - Arihant Experts 2019-07-06
Physics of higher level has too many concept and remembering all them on tips all the time is not an easy task. Handbook of Physics is an important, useful and compact reference book suitable for everyday study, problem solving or exam revision for class XI – XII, Engineering & Medical entrances and other Competitions Aspirants. This book is a multi-purpose quick revision resource that contains almost all key notes, terms, Definitions and formulae that all students & professionals in physics will want to have this essential reference book within easy reach. Its unique format displays formulae clearly, places them in the context and crisply identifies describes all the variables involved, summary about every equation and formula that one might want while learning physics is one of the unique features of the book, a stimulating and crisp extract of fundamental physics is to be enjoyed by the beginners and experts equally. The book is best-selling from its first edition and one of the most useful books of its type. Table of contents Measurement, Vectors, Motion in a Straight Line, Projectile Motion and Circular Motion, Laws of Motion, Work, Power and Energy, Rotational Motion, Gravitation, Elasticity, Hydrostatics, Hydrodynamics, Surface Tensions, Thermometry and Calorimetry, Kinetic Theory of Gases, Thermodynamics, Transmission of Heat, Oscillations, Waves and Sound, Electrostatics, Current Electricity, Heating and Chemical Effects of Currents, Magnetic Effect of Current, Magnetism, Electromagnetic Induction, Alternating Currents, Ray Optics, Wave Optics, Electrons, Photons and X-rays, Atomic Physics, Nuclear Physics, Electronics, Electromagnetic Waves and Communication, Universe, Basic Formulae of Physics, Nobel Laureates in Physics, Famous Physicists and their Contributions.

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.

Applications of Design for Manufacturing and Assembly - Ancuta Carmen Păcurar 2019-01-03
The book entitled Application of Design for Manufacturing and Assembly aims to present applicable research in the field of design, manufacturing, and assembly realized by researchers affiliated to well-known institutes. The book has a profound interdisciplinary character and is addressed to researchers, engineers, PhD students, graduate and undergraduate students, teachers, and other readers interested in assembly applications. I am confident that readers will find interesting information and challenging topics of high academic and scientific level within this book. The book presents case studies focused on new design for special parts using the principles of Design for Manufacturing and Assembly (DFMA), strategies that minimize the defects in design and manufacturing applications, special devices produced to replace human activity, multiple criteria analysis to evaluate engineering solutions, and the advantages of using the additive manufacturing technology to design the next generation of complex parts, in different engineering fields.

Nano - T. Pradeep 2008-03-16
Master the Fundamentals of Nanotechnology to Prepare for Nano-Related Career Opportunities If you want to move into the fast-growing field of nanotechnology, you can't afford to miss Nano--The Essentials. This career-building resource offers a rigorous, technological introduction to the fundamentals of nanotechnology, providing everything you need to enter this burgeoning discipline and prepare for nano-related jobs. Packed with over 100 detailed illustrations and lots of practical work-related advice, the book covers the experimental tools of nanotechnology, the basics of nanomaterials, and key applications in fields such as nanosensors, nanobiology, nanomedicine, and nanomachines. This on-target guide takes readers step-by-step through the manipulation of materials in the nanoscale ...fullerenes...carbon nanotubes...self-assembled nanolayers... gas-phase clusters...monolayer-protected metal nanoparticles...core-shell nanoparticles...and much more. Comprehensive and easy-to-understand, Nano--The Essentials features: A solid introduction to the fundamentals of nanomaterials Full details on the experimental tools used in nanotechnology The latest advances in nanobiology and nanomedicine Breakthroughs in the development of nanosensors Cutting-edge innovations in molecular nanomachines Inside this Expert Introduction to the Basics of Nanotechnology • Introduction • Manipulating Materials in the Nanoscale • Fullerenes • Carbon Nanotubes • Self-Assembled Nanolayers • Gas-Phase Clusters • Semiconductor Quantum Dots • Monolayer-Protected Metal Nanoparticles • Core-Shell Nanoparticles • Nanoshells • Nanobiology • Nanosensors • Nanomedicines • Molecular Nanomachines • Nanotribology • Societal Implications

Mems for Biomedical Applications - Shekhar Bhansali 2012-07-18
The application of Micro Electro Mechanical Systems (MEMS) in the biomedical field is leading to a new generation of medical devices. MEMS for biomedical applications reviews the wealth of recent research on fabrication technologies and applications of this exciting technology. The book is divided into four parts: Part one introduces the fundamentals of MEMS for biomedical applications, exploring the microfabrication of polymers and reviewing sensor and actuator mechanisms. Part two describes applications of MEMS for biomedical sensing and diagnostic applications. MEMS for in vivo sensing and electrical impedance spectroscopy are investigated, along with ultrasonic transducers, and lab-on-chip devices. MEMS for tissue engineering and clinical applications are the focus of part three, which considers cell culture and tissue scaffolding devices, BioMEMS for drug delivery and minimally invasive medical procedures. Finally, part four reviews emerging biomedical applications of MEMS, from implantable neuroprobes and ocular implants to cellular microinjection and hybrid MEMS. With its

distinguished editors and international team of expert contributors, MEMS for biomedical applications provides an authoritative review for scientists and manufacturers involved in the design and development of medical devices as well as clinicians using this important technology. Reviews the wealth of recent research on fabrication technologies and applications of Micro Electro Mechanical Systems (MEMS) in the biomedical field Introduces the fundamentals of MEMS for biomedical applications, exploring the microfabrication of polymers and reviewing sensor and actuator mechanisms Considers MEMS for biomedical sensing and diagnostic applications, along with MEMS for in vivo sensing and electrical impedance spectroscopy

MATERIALS SCIENCE AND ENGINEERING - V. RAGHAVAN 2015-05-01
This well-established and widely adopted book, now in its Sixth Edition, provides a thorough analysis of the subject in an easy-to-read style. It analyzes, systematically and logically, the basic concepts and their applications to enable the students to comprehend the subject with ease. The book begins with a clear exposition of the background topics in chemical equilibrium, kinetics, atomic structure and chemical bonding. Then follows a detailed discussion on the structure of solids, crystal imperfections, phase diagrams, solid-state diffusion and phase transformations. This provides a deep insight into the structural control necessary for optimizing the various properties of materials. The mechanical properties covered include elastic, anelastic and viscoelastic behaviour, plastic deformation, creep and fracture phenomena. The next four chapters are devoted to a detailed description of electrical conduction, superconductivity, semiconductors, and magnetic and dielectric properties. The final chapter on 'Nanomaterials' is an important addition to the sixth edition. It describes the state-of-art developments in this new field. This eminently readable and student-friendly text not only provides a masterly analysis of all the relevant topics, but also makes them comprehensible to the students through the skillful use of well-drawn diagrams, illustrative tables, worked-out examples, and in many other ways. The book is primarily intended for undergraduate students of all branches of engineering (B.E./B.Tech.) and postgraduate students of Physics, Chemistry and Materials Science. KEY FEATURES • All relevant units and constants listed at the beginning of each chapter • A note on SI units and a full table of conversion factors at the beginning • A new chapter on 'Nanomaterials' describing the state-of-art information • Examples with solutions and problems with answers • About 350 multiple choice questions with answers

Principles of Electric Machines and Power Electronics - Paresh Chandra Sen 2021-02-25

Concepts Of Physics - Harish Chandra Verma 1999

Learning for Adaptive and Reactive Robot Control - Aude Billard 2022-02-08
Methods by which robots can learn control laws that enable real-time reactivity using dynamical systems; with applications and exercises. This book presents a wealth of machine learning techniques to make the control of robots more flexible and safe when interacting with humans. It introduces a set of control laws that enable reactivity using dynamical systems, a widely used method for solving motion-planning problems in robotics. These control approaches can replan in milliseconds to adapt to new environmental constraints and offer safe and compliant control of forces in contact. The techniques offer theoretical advantages, including convergence to a goal, non-penetration of obstacles, and passivity. The coverage of learning begins with low-level control parameters and progresses to higher-level competencies composed of combinations of skills. Learning for Adaptive and Reactive Robot Control is designed for graduate-level courses in robotics, with chapters that proceed from fundamentals to more advanced content. Techniques covered include learning from demonstration, optimization, and reinforcement learning, and using dynamical systems in learning control laws, trajectory planning, and methods for compliant and force control . Features for teaching in each chapter: • applications, which range from arm manipulators to whole-body control of humanoid robots; • pencil-and-paper and programming exercises; • lecture videos, slides, and MATLAB code examples available on the author's website . • an eTextbook platform website offering protected material[EPS2] for instructors including solutions.

The Science and Engineering of Materials, Enhanced, SI Edition - Donald R. Askeland 2021-01-01
Develop a thorough understanding of the relationships between structure, processing and the properties of materials with

Askeland/Wright's THE SCIENCE AND ENGINEERING OF MATERIALS, ENHANCED, SI, 7th Edition. This comprehensive edition serves as a useful professional reference for current or future study in manufacturing, materials, design or materials selection. This science-based approach to materials engineering highlights how the structure of materials at various length scales gives rise to materials properties. You examine how the connection between structure and properties is key to innovating with materials, both in the synthesis of new materials as well as in new applications with existing materials. You also learn how time, loading and environment all impact materials -- a key concept that is often overlooked when using charts and databases to select materials. Trust this enhanced edition for insights into success in materials engineering today. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Physics : Textbook For Class Xi - 2007-01-01

Computer Engineering - C. Gordon Bell 2014-05-12
Computer Engineering: A DEC View of Hardware Systems Design focuses on the principles, progress, and concepts in the design of hardware systems. The selection first elaborates on the seven views of computer systems, technology progress in logic and memories, and packaging and manufacturing. Concerns cover power supplies, DEC computer packaging generations, general packaging, semiconductor logic technology, memory technology, measuring (and creating) technology progress, structural levels of a computer system, and packaging levels-of -integration. The manuscript then examines transistor circuitry in the Lincoln TX-2, digital modules, PDP-1 and other 18-bit computers, PDP-8 and other 12-bit computers, and structural levels of the PDP-8. The text takes a look at cache memories for PDP-11 family computers, buses, DEC LSI-11, and design decisions for the PDP-11/60 mid-range minicomputer. Topics include reliability and maintainability, price/performance balance, advances in memory technology, synchronization of data transfers, error control strategies, PDP-11/45, PDP-11/20, and cache organization. The selection is a fine reference for practicing computer designers, users, programmers, designers of peripherals and memories, and students of computer engineering and computer science.
Textbook of Nanoscience and Nanotechnology - B.S. Murty 2013-12-06
This book is meant to serve as a textbook for beginners in the field of nanoscience and nanotechnology. It can also be used as additional reading in this multifaceted area. It covers the entire spectrum of nanoscience and technology: introduction, terminology, historical perspectives of this domain of science, unique and widely differing properties, advances in the various synthesis, consolidation and characterization techniques, applications of nanoscience and technology and emerging materials and technologies.
Defence Science Journal - 2004

2D Materials - Phaedon Avouris 2017-06-29
Learn about the most recent advances in 2D materials with this comprehensive and accessible text. Providing all the necessary materials science and physics background, leading experts discuss the fundamental properties of a wide range of 2D materials, and their potential applications in electronic, optoelectronic and photonic devices. Several important classes of materials are covered, from more established ones such as graphene, hexagonal boron nitride, and transition metal dichalcogenides, to new and emerging materials such as black phosphorus, silicene, and germanene. Readers will gain an in-depth understanding of the electronic structure and optical, thermal, mechanical, vibrational, spin and plasmonic properties of each material, as well as the different techniques that can be used for their synthesis. Presenting a unified perspective on 2D materials, this is an excellent resource for graduate students, researchers and practitioners working in nanotechnology, nanoelectronics, nanophotonics, condensed matter physics, and chemistry.
Solid Materials - 2014-03-12

Physical and Chemical Properties of Carbon Nanotubes - Satoru Suzuki 2013-02-27
Carbon nanotubes are rolled up graphene sheets with a quasi-one-dimensional structure of nanometer-scale diameter. In these last twenty years, carbon nanotubes have attracted much attention from physicists, chemists, material scientists, and electronic device engineers because of their excellent structural, electronic, optical, chemical and mechanical properties. Carbon nanotube research, especially that aiming at industrial applications, is becoming more important. This book covers recent research topics regarding the physical, structural, chemical and electric properties on carbon nanotubes. All chapters were written by researchers who are active on the front lines. The chapters in this book will be helpful to many students, engineers and researchers working in the field of carbon nanotubes.
COMPUTER FUNDAMENTALS (SEMESTER - 1). - P. K. SINGH 2015

Introduction To Nanoscience And Nenotechnology - Chattopadhyay 2009

Undergraduate Instrumental Analysis - James W. Robinson 2004-12-02
Completely rewritten, revised, and updated, this Sixth Edition reflects the latest technologies and applications in spectroscopy, mass spectrometry, and chromatography. It illustrates practices and methods specific to each major chemical analytical technique while showcasing innovations and trends currently impacting the field. Many of the
English 906 - Starline Press 2011-05-30
Starline Press Curriculum Description Unit 6 of 10 English 900Units English 901-900 Ninth grade students study sentence types, sentence problems, sentence interruptions, sentence divisions, and sentence ends. They study newspapers, the internet, and persuasion pieces. Students learn about imagery, symbolism, irony, ambiguity, conflict, and subtlety. They study using rhetoric, the structure of an argument, writing descriptions, writing about people, places, and events, creating a timeline, gathering facts, and making it personal. Ninth grade students continue to learn the proper usage of the types of nouns, verb tenses, forms of adjectives, problems with pronouns, functions of adverbs, and rules with prepositions.Starline Press is a character-based, state standards aligned, individualized and independent learning curriculum. Perfect for any independent learning environment, from Homeschool to Adult High School completion and Home and Hospital instruction, it is designed to allow each student to progress at his or her own pace, which may vary from subject to subject. Students find the instruction embedded in the material, so that the teachers' voice is heard within the text. Both objective and subjective assessment methods are used to ensure mastery of the material. Challenging activities are included in each unit to help students to acquire critical thinking skillsets.Each complete Starline Press Curriculum Course contains from 5-12 individual units, from one semester to one years' instruction. The Starline Press core curriculum course list includes Math, English, Social Studies and Science for 3rd through 12th grades. The Starline Press High School Elective curriculum course list includes; Physical Education, Personal Finance, Spanish, and Automotive Technology, Home Economics, Art, Music and many others. Each Unit (24 to 60 pages) is about 3 weeks work for a student and comes with a test inserted into the back for easy removal. The separately purchased Score Key comes with the Test Key inserted into the back of it. All units of a particular course must be completed to meet all of the objectives of that course. Starline's 3rd - 8th grade curriculum offers 12 units per year. The 9th - 12th grade curriculum offers 5 units per semester and 10 units per year. Designed with independent learning and Homeschool in mind, Starline is self contained and includes lists of any additional resources needed to complete the units. Starline is a system of learning that is designed to be used independently, but can also be used as remediation or enrichment, special education individual ability and paced material or homework.Our contact numbers and more information about Starline can be found on our website at www.starlinepress.com. Quantity discounts are available for public and private schools, please call for information.
Chemical Metallurgy - Chiranjib Kumar Gupta 2006-03-06
Chemical metallurgy is a well founded and fascinating branch of the wide field of metallurgy. This book provides detailed information on both the first steps of separation of desirable minerals and the subsequent mineral processing operations. The complex chemical processes of extracting various elements through hydrometallurgical, pyrometallurgical or electrometallurgical operations are explained. In the choice of material for this work, the author made good use of the synergy of scientific principles and industrial practices, offering the much needed and hitherto unavailable combination of detailed treatises on both compiled in one book.
MOS (Metal Oxide Semiconductor) Physics and Technology - E. H. Nicollian 2002-11-21
Explains the theoretical and experimental foundations of the measurement of the electrical properties of the MOS system and the

technology for controlling its properties. Emphasizes the silica and the silica-silicon interface. Provides a critical assessment of the literature, corrects incomplete or incorrect theoretical formulations, and gives critical comparisons of measurement methods. Contains information needed to grow an oxide, make an MOS capacitor array, and fabricate an integrated circuit with optimal performance and stability.

A Text Book of Medical Instruments - S. Ananthi 2006
About the Book: This book has therefore subdivided the realm of medical instruments into the same sections like a text on physiology and introduces the basic early day methods well, before dealing with the details of present day instruments currently in

In The Company Of Owners - Joseph Blasi 2003-01-02
The string of business scandals that recently engulfed America painted a picture of corporate chieftains lining their pockets by cutting corners, cooking the books, and duping gullible investors. In doing so, greedy CEOs have hijacked what could be one of the most important business innovations in decades: stock options for all employees.Joseph Blasi, Douglas Kruse, and Aaron Bernstein-all leading experts on employee ownership-show how American companies would perform much better if they followed the lead of many high-tech firms and granted options to their entire workforce, rather than to just a tiny corporate elite. Using SEC data in a way never done before, they document the vast wealth executives have accumulated for themselves. It shows how the abuse of options has taken place not just at scandal-ridden companies such as Enron and WorldCom, but across the entire reach of corporate America. In the Company of Owners argues that there's a better way. Broad-employee ownership through stock options offers a new model for U.S. corporations and American capitalism. The authors explain how employees and shareholders alike would benefit if most large companies adopted what they call the partnership capitalism approach-using options to encourage employees to think and act like owners.A searing critique of business as usual in America's executive suites, this book offers a comprehensive vision for how stock options can enrich companies, employees, investors, and the U.S. economy as a whole. With its remarkable new evidence and astute synthesis, In the Company of Owners will change the way America thinks about stock options.Joseph R. Blasi, a sociologist, and Douglas L. Kruse, an economist, are professors at Rutgers University's School of Management and Labor Relations. Aaron Bernstein is a senior writer at Business Week magazine.

Electronic Systems and Intelligent Computing - Pradeep Kumar Mallick 2020-09-22
This book presents selected, high-quality research papers from the International Conference on Electronic Systems and Intelligent Computing (ESIC 2020), held at NIT Yupia, Arunachal Pradesh, India, on 2 – 4 March 2020. Discussing the latest challenges and solutions in the field of smart computing, cyber-physical systems and intelligent technologies, it includes papers based on original theoretical, practical and experimental simulations, developments, applications, measurements, and testing. The applications and solutions featured provide valuable reference material for future product development.

Nuclear Medicine: The Requisites - Harvey A. Ziessman, MD 2013-03-21
Get the essential tools you need to make an accurate diagnosis with Nuclear Medicine: The Requisites! The newest edition of his bestselling volume by Drs. Harvey Ziessman, Janis O'Malley, and James Thrall delivers the conceptual, factual, and interpretive information you need for effective clinical practice in nuclear medicine imaging, as well as for certification and recertification review. Prepare for the written board exam and for clinical practice with critical information on nuclear medicine physics, detection and instrumentation, SPECT and PET imaging, and clinical nuclear medicine imaging. Get the best results from today's most technologically advanced approaches, including hybrid imaging, PET/CT, and SPECT/CT, as well as recent developments in instrumentation, radiopharmaceuticals, and molecular imaging. Clearly visualize the findings you're likely to see in practice and on exams with nearly 200 vibrant new full-color images. Access the fully searchable text and downloadable images online at www.expertconsult.com.

Digital Transformation in Semiconductor Manufacturing - Sophia Keil 2020-01-01
This open access book reports on cutting-edge electrical engineering and microelectronics solutions to foster and support digitalization in the semiconductor industry. Based on the outcomes of the European project iDev40, which were presented at the two first conference editions of the European Advances in Digital Transformation Conference (EADCT 2018 and EADTC 2019), the book covers different, multidisciplinary aspects related to digital transformation, including technological and industrial

developments, as well as human factors research and applications. Topics include modeling and simulation methods in semiconductor operations, supply chain management issues, employee training methods and workplaces optimization, as well as smart software and hardware solutions for semiconductor manufacturing. By highlighting industrially relevant developments and discussing open issues related to digital transformation, the book offers a timely, practice-oriented guide to graduate students, researchers and professionals interested in the digital transformation of manufacturing domains and work environments.

Data-intensive Text Processing with MapReduce - Jimmy Lin 2010
Our world is being revolutionized by data-driven methods: access to large amounts of data has generated new insights and opened exciting new opportunities in commerce, science, and computing applications. Processing the enormous quantities of data necessary for these advances requires large clusters, making distributed computing paradigms more crucial than ever. MapReduce is a programming model for expressing distributed computations on massive datasets and an execution framework for large-scale data processing on clusters of commodity servers. The programming model provides an easy-to-understand abstraction for designing scalable algorithms, while the execution framework transparently handles many system-level details, ranging from scheduling to synchronization to fault tolerance. This book focuses on MapReduce algorithm design, with an emphasis on text processing algorithms common in natural language processing, information retrieval, and machine learning. We introduce the notion of MapReduce design patterns, which represent general reusable solutions to commonly occurring problems across a variety of problem domains. This book not only intends to help the reader "think in MapReduce", but also discusses limitations of the programming model as well. This volume is a printed version of a work that appears in the Synthesis Digital Library of Engineering and Computer Science. Synthesis Lectures provide concise, original presentations of important research and development topics, published quickly, in digital and print formats. For more information visit www.morganclaypool.com

Wikinomics - Don Tapscott 2008-04-17
The acclaimed bestseller that's teaching the world about the power of mass collaboration. Translated into more than twenty languages and named one of the best business books of the year by reviewers around the world, Wikinomics has become essential reading for business people everywhere. It explains how mass collaboration is happening not just at Web sites like Wikipedia and YouTube, but at traditional companies that have embraced technology to breathe new life into their enterprises. This national bestseller reveals the nuances that drive wikinomics, and share fascinating stories of how masses of people (both paid and volunteer) are now creating TV news stories, sequencing the human gnome, remixing their favorite music, designing software, finding cures for diseases, editing school texts, inventing new cosmetics, and even building motorcycles.

Nanoscience - Hans-Eckhardt Schaefer 2010-08-26
Nanoscience stands out for its interdisciplinarity. Barriers between disciplines disappear and the fields tend to converge at the very smallest scale, where basic principles and tools are universal. Novel properties are inherent to nanosized systems due to quantum effects and a reduction in dimensionality: nanoscience is likely to continue to revolutionize many areas of human activity, such as materials science, nanoelectronics, information processing, biotechnology and medicine. This textbook spans all fields of nanoscience, covering its basics and broad applications. After an introduction to the physical and chemical principles of nanoscience, coverage moves on to the adjacent fields of microscopy, nanoanalysis, synthesis, nanocrystals, nanowires, nanolayers, carbon nanostructures, bulk nanomaterials, nanomechanics, nanophotonics, nanofluidics, nanomagnetism, nanotechnology for computers, nanochemistry, nanobiology, and nanomedicine. Consequently, this broad yet unified coverage addresses research in academia and industry across the natural scientists. Didactically structured and replete with hundreds of illustrations, the textbook is aimed primarily at graduate and advanced-undergraduate students of natural sciences and medicine, and their lecturers.

Diagnostic Radiology Physics - International Atomic Energy Agency 2013-03-01
This publication is aimed at students and teachers involved in programmes that train medical physicists for work in diagnostic radiology. It provides, in the form of a syllabus, a comprehensive overview of the basic medical physics knowledge required for the practice of modern diagnostic radiology. This makes it particularly useful

for graduate students and residents in medical physics programmes. The material presented in the publication has been endorsed by the major international organisations and is the foundation for academic and clinical courses in both diagnostic radiology physics and in emerging areas such as imaging in radiotherapy.