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Handbook of Organic Materials for Electronic and Photonic Devices Oksana Ostroverkhova 2018-11-30 Handbook of Organic Materials for Electronic and Photonic Devices, Second Edition, provides an overview of the materials, mechanisms, characterization techniques, structure-property relationships, and most promising applications of organic materials. This new release includes new content on emerging organic materials, expanded content on the basic physics behind electronic properties, and new chapters on organic photonics. As advances in organic materials design, fabrication, and processing that enabled charge unprecedented carrier mobilities and power conversion efficiencies have made dramatic advances since the first edition, this latest release presents a necessary understanding of the underlying physics that enabled novel material design and improved organic device design. Provides a comprehensive overview of the materials, mechanisms, characterization techniques, and structure property relationships of organic electronic and photonic materials Reviews key applications, including organic solar cells, light-emitting diodes electrochemical cells, sensors, transistors, bioelectronics, and memory devices New content to reflect latest advances in our understanding of underlying physics to enable material design and device fabrication

Cleaning with Solvents: Science and Technology John Durkee 2013-11-29 High-precision cleaning is required across a wide range of sectors, including aerospace, defense, medical device manufacturing, pharmaceutical processing, semiconductor/electronics, etc. Cleaning parts and surfaces with solvents is simple, effective and low-cost. Although health and safety and environmental concerns come into play with the use of solvents, this book explores how safe and compliant solvent-based cleaning techniques can be implemented. A key to this is the selection of the right solvent. The author also examines a range of newer "green" solvent cleaning options. This book supplies scientific fundamentals and practical guidance supported by real-world examples. Durkee explains the three principal methods of solvent selection: matching of solubility parameters, reduction of potential for smog formation, and matching of physical properties. He also provides guidance on the safe use of aerosols, wipe-cleaning techniques, solvent stabilization, economics, and many other topics. A compendium of blend rules is included, covering the physical, chemical, and environmental properties of solvents. Three methods explained in detail for substitution of suitable solvents for those unsuitable for any reason: toxic solvents don't have to be tolerated; this volume explains how to do better Enables users to make informed judgments about their selection of cleaning solvents for specific applications, including solvent replacement decisions Explains how to plan and implement solvent cleaning systems that are effective, economical and compliant with regulations

A participatory approach for hydrometeorological monitoring in the Blue Nile River Basin of Ethiopia Zemadim, B. 2014-04-08 Participatory research is increasingly recognized as being useful for conducting multiple activities in research for development projects. The co-learning environment created in participatory research helps to identify existing social and technological gaps, and develop possible solutions to improve the livelihoods of rural communities. This report describes a participatory approach used in the establishment and implementation of hydrometeorological monitoring networks in the Blue Nile River Basin of Ethiopia. The networks were established with the involvement of rural communities and other stakeholders to gain insights into the hydrological processes of the watersheds, in order to improve rainwater management strategies. Local people were involved in the day-to-day management and maintenance of the networks. The participatory approach proved beneficial for several reasons, not least, because it instilled trust and goodwill amongst the communities.

Surface Preparation Techniques for Adhesive Bonding Raymond F. Wegman 1989-12-31 Provides information on processing adherends prior to adhesive bonding—from the point of view of the materials and process engineer. Processing of aluminum and its alloys, titanium and its alloys, steels, copper and its alloys, and magnesium are trea

Neutron Scattering - Magnetic and Quantum Phenomena 2015-11-29 Neutron Scattering - Magnetic and Quantum Phenomena provides detailed coverage of the application of neutron scattering in condensed matter research. The book's primary aim is to enable researchers in a particular area to identify the aspects of their work where neutron scattering techniques might contribute, conceive the important experiments to be done, assess what is required to carry them out, write a successful proposal for one of the major user facilities, and perform the experiments under the guidance of the appropriate instrument scientist. An earlier series edited by Kurt Sköld and David L. Price, and published in the 1980s by Academic Press as three volumes in the series Methods of Experimental Physics, was very successful and remained the standard reference in the field for several years. This present work has similar goals, taking into account the advances in experimental techniques over the past quarter-century, for example, neutron reflectivity and spin-echo spectroscopy, and techniques for probing the dynamics of complex materials of technological relevance. This volume complements Price and Fernandez-Alonso (Eds.), Neutron Scattering - Fundamentals published in November 2013. Covers the application of neutron scattering techniques in the study of quantum and magnetic phenomena, including superconductivity, multiferroics, and nanomagnetism Presents up-to-date reviews of recent results, aimed at enabling the reader to identify new opportunities and plan neutron scattering experiments in their own field Provides a good balance between theory and experimental techniques Provides a complement to Price and Fernandez-Alonso (Eds.), Neutron Scattering - Fundamentals published in November 2013

The Hockey Stick and the Climate Wars Michael E. Mann 2013-10-01 The ongoing assault on climate science in the United States has never been more aggressive, more blatant, or more widely publicized than in the case of the Hockey Stick graph—a clear and compelling visual presentation of scientific data, put together by Michael E. Mann and his colleagues, demonstrating that global temperatures have risen in conjunction with the increase in industrialization and the use of fossil fuels. Here was an easy-to-understand graph that, in a glance, posed a threat to major corporate energy interests and those who do their political bidding. The stakes were simply too high to ignore the Hockey Stick—and so began a relentless attack on a body of science and on the investigators whose work formed its scientific basis. The Hockey Stick achieved prominence in a 2001 UN report on climate change and quickly became a central icon in the “climate wars.” The real issue has never been the graph’s data but rather its implied threat to those who oppose governmental regulation and other restraints to protect the environment and planet. Mann, lead author of the original paper in which the Hockey Stick first appeared, shares the story of the science and politics behind this controversy. He reveals key figures in the oil and energy industries and the media front groups who do their bidding in sometimes slick, sometimes bare-knuckled ways. Mann concludes with the real story of the 2009 “Climategate” scandal, in which climate scientists’ emails were hacked. This is essential reading for all who care about our planet’s health and our own well-being.

Quantitative Data Processing in Scanning Probe Microscopy Petr Klapetek 2018-02-03 Quantitative Data Processing in Scanning Probe Microscopy: SPM Applications for Nanometrology, Second Edition describes the

recommended practices for measurements and data processing for various SPM techniques, also discussing associated numerical techniques and recommendations for further reading for particular physical quantities measurements. Each chapter has been revised and updated for this new edition to reflect the progress that has been made in SPM techniques in recent years. New features for this edition include more step-by-step examples, better sample data and more links to related documentation in open source software. Scanning Probe Microscopy (SPM) techniques have the potential to produce information on various local physical properties. Unfortunately, there is still a large gap between what is measured by commercial devices and what could be considered as a quantitative result. This book determines to educate and close that gap. Associated data sets can be downloaded from http://gwyddion.net/qspm/ Features step-by-step guidance to aid readers in progressing from a general understanding of SPM principles to a greater mastery of complex data measurement techniques Includes a focus on metrology aspects of measurements, arming readers with a solid grasp of instrumentation and measuring methods accuracy Worked examples show quantitative data processing for different SPM analytical techniques

The Effect of Long Term Thermal Exposure on Plastics and Elastomers Laurence W. McKeen 2021-04-25 The Effect of Long Term Thermal Exposure on Plastics and Elastomers, Second Edition brings together a wide range of essential data on the effect of long-term thermal exposure on plastics and elastomers, enabling engineers to make optimal material choices and design decisions. This second edition has been thoroughly revised to include the latest data and materials. This highly valuable handbook will support engineers, product designers, R&D professionals, and scientists who are working on plastics products or parts for high temperature environments across a range of industries. This readily available data will make it easy for practitioners to learn about plastic materials and their long- term thermal exposure without having to search the general literature or depend on suppliers. This book will also be of interest to researchers and advanced students in plastics engineering, polymer processing, coatings, and materials science and engineering. Provides essential data and practical guidance for engineers and scientists working with plastics in high temperature environments Includes introductory chapters on the effect of heat aging and testing methods, providing the underpinning knowledge required to utilize the data Covers a wide range of commercial polymer classes that are updated to include the latest developments in plastics materials

Population Growth and Rapid Urbanization in the Developing World Benna, Umar G. 2016-06-07 As the global population continues to boom, particularly in the developing countries, it has become necessary to find ways to handle this increase through various policy tools that address population growth and urbanization problems. The urbanization process has both potentials issues as well as opportunities to move societies forward that need to be exploited. Population Growth and Rapid Urbanization in the Developing World examines trends, challenges, issues and strategies adopted by developing countries in the face of population growth and rapid urbanization and its impact on urban environments. The book explores patterns of population growth and urbanization, use of different governance approaches in addressing challenges, as well as different tools and systems of appropriate allocation to address issues. The book is a comprehensive reference for academicians, students, practitioners, professionals, managers, urban planners and government officials.

Future Energy Trevor M. Letcher 2008-07-30 Future Energy will allow us to make reasonable, logical and correct decisions on our future energy as a result of two of the most serious problems that the civilized world has to face; the looming shortage of oil (which supplies most of our transport fuel) and the alarming rise in atmospheric carbon dioxide over the past 50 years (resulting from the burning of oil, gas and coal and the loss of forests) that threatens to change the world's climate through global warming. Future Energy focuses on all the types of energy available to us, taking into account a future involving a reduction in oil and gas production and the rapidly increasing amount of carbon dioxide in our atmosphere. It is unique in the genre of books of similar title in that each chapter has been written by a scientist or engineer who is an expert in his or her field. The book is divided into four sections: • Traditional Fossil Fuel and Nuclear Energy • Renewable Energy • Potentially Important New Types of Energy • New Aspects to Future Energy Usage Each chapter highlights the basic theory and implementation, scope, problems and costs associated with a particular type of energy. The traditional fuels are included because they will be with us for decades to come - but, we hope, in a cleaner form. The renewable energy types includes wind power, wave power, tidal energy, two forms of solar energy, bio-mass, hydroelectricity, geothermal and the hydrogen economy. Potentially important new types of energy include: pebble bed nuclear reactors, nuclear fusion, methane hydrates and recent developments in fuel cells and batteries. - Written by experts in the key future energy disciplines from around the globe - Details of all possible forms of energy that are and will be available globally in the next two decades - Puts each type of available energy into perspective with realistic, future options

Wearable Sensors Edward Sazonov 2014-08-14 Written by industry experts, this book aims to provide you with an understanding of how to design and work with wearable sensors. Together these insights provide the first single source of information on wearable sensors that would be a valuable addition to the library of any engineer interested in this field. Wearable Sensors covers a wide variety of topics associated with the development and application of various wearable sensors. It also provides an overview and coherent summary of many aspects of current wearable sensor technology. Both industry professionals and academic researchers will benefit from this comprehensive reference which contains the most up-to-date information on the advancement of lightweight hardware, energy harvesting, signal processing, and wireless communications and networks. Practical problems with smart fabrics, biomonitoring and health informatics are all addressed, plus end user centric design, ethical and safety issues. Provides the first comprehensive resource of all currently used wearable devices in an accessible and structured manner. Helps engineers manufacture wearable devices with information on current technologies, with a focus on end user needs and recycling requirements. Combines the expertise of professionals and academics in one practical and applied source.

Cambridge International AS and A Level Biology C. J. Clegg 2015-01-30 This title covers the entire syllabus for Cambridge International Examinations' International AS and A Level Biology (9700). It is divided into separate sections for AS and A Level making it ideal for students studying both the AS and the A Level and also those taking the AS examinations at the end of their first year. - Explains difficult concepts using language that is appropriate for students around the world - Provides practice throughout the course with carefully selected past paper questions at the end of each chapter We are working with Cambridge International Examinations to gain endorsement for this title.

The Geography of Transport Systems Jean-Paul Rodrigue 2013-07-18 Mobility is fundamental to economic and social activities such as commuting, manufacturing, or supplying energy. Each movement has an origin, a potential set of intermediate locations, a destination, and a nature which is linked with geographical attributes. Transport systems composed of infrastructures, modes and terminals are so embedded in the socio-economic life of individuals, institutions and corporations that they are often invisible to the consumer. This is paradoxical as the perceived invisibility of transportation is derived from its efficiency. Understanding how mobility is linked with geography is main the purpose of this book. The third edition of The Geography of Transport Systems has been revised and updated to provide an overview of the spatial aspects of transportation. This text provides greater discussion of security, energy, green logistics, as well as new and updated case studies, a revised content structure, and new figures. Each chapter covers a specific conceptual dimension including networks, modes, terminals, freight transportation, urban transportation and environmental impacts. A final chapter contains core methodologies linked with transport geography such as accessibility, spatial interactions, graph theory and Geographic Information Systems for transportation (GIS-T). This book provides a comprehensive and accessible introduction to the field, with a broad overview of its concepts, methods, and areas of application. The accompanying website for this text contains a useful additional material, including digital maps, PowerPoint slides, databases, and links to further reading and websites. The website can be accessed at: http://people.hofstra.edu/geotrans This text is an essential resource for undergraduates studying transport geography, as well as those interest in economic and urban geography, transport planning and engineering.

World Migration Report 2020 United Nations 2019-11-27 Since 2000, IOM has been producing world migration reports. The World Migration Report 2020, the tenth in the world migration report series, has been produced to contribute to increased understanding of migration throughout the world. This new edition presents key data and information on migration as well as thematic chapters on highly topical migration issues, and is structured to focus on two key contributions for readers: Part I: key information on migration and migrants (including migration-related statistics); and Part II: balanced, evidence-based analysis of complex and emerging migration issues.

Cambridge O Level Biology Revision Guide Ian J. Burton 2015-08-31 Revision Guide to support students of Cambridge O Level Biology through their course and help them to prepare for assessment.

The Economic Impact of Climate Change on Kenyan Crop Agriculture: A Ricardian Approach Jane Kabubo-Mariara 2007

Underneath the Bragg Peaks Takeshi Egami 2003 This book describes a technique of structural study, the atomic-pair distribution function analysis. This is a relatively new technique, with a strong promise of wide application in the study of the local structure of crystalline materials and materials science in general.

Clinical Engineering Azzam Taktak 2019-12-01 Clinical Engineering: A Handbook for Clinical and Biomedical Engineers, Second Edition, helps professionals and students in clinical engineering successfully deploy medical

technologies. The book provides a broad reference to the core elements of the subject, drawing from a range of experienced authors. In addition to engineering skills, clinical engineers must be able to work with both patients and a range of professional staff, including technicians, clinicians and equipment manufacturers. This book will not only help users keep up-to-date on the fast-moving scientific and medical research in the field, but also help them develop laboratory, design, workshop and management skills. The updated edition features the latest fundamentals of medical technology integration, patient safety, risk assessment and assistive technology. Provides engineers in core medical disciplines and related fields with the skills and knowledge to successfully collaborate on the development of medical devices, via approved procedures and standards Covers US and EU standards (FDA and MDD, respectively, plus related ISO requirements) Includes information that is backed up with real-life clinical examples, case studies, and separate tutorials for training and class use Completely updated to include new standards and regulations, as well as new case studies and illustrations

The Forensic Examination and Interpretation of Tool Marks David Baldwin 2013-09-23 The Forensic Examination and Interpretation of ToolMarks brings together key techniques and developments inthe field of tool marks in forensic science and explains clearlyhow tool mark analysis can be used within forensicinvestigation. The purpose of this book is to bring together as much of thisinformation as possible in an accessible manner. The book dealswith all aspects of tool mark evidence from crime scene tocourtroom. The examination of a wide variety of different toolmarks are discussed, including those made by specific tools such assaws and in complex materials such as bone. The general principles and techniques used in tool markexaminations can also be applied to some other closely relatedfields. Therefore, sections on the examination of manufacturingmarks, including those on plastic film items, and physical fitcomparisons are also included. The book will be of interest to a wide range of people andnot just to tool mark examiners and people studying forensicscience. It will be of use to crime scene examiners, officersinvestigating crimes where tool marks are found and members of thelegal professions. Brings together key techniques and developments within thefield of tool mark investigation. Includes material on examining tool marks at the crime sceneand in the laboratory, interpretation and evaluation issues and howtool mark evidence should be presented in court. Covers specialized tool mark examinations, manufacturing marks,including those on plastic film items, and physical fits. Includes a large range of illustrations and photographs. Invaluable reference for practicing forensic scientists,students of forensic sciences, members of the legal professions andcrime scene investigators, enabling them to recognise theimportance of tool marks within an investigation. An extremely valuable resource in the on-going debate regardingthe evidential value of tool marks in court. Part of the ‘Essentials in Forensic Science’book series.

Topological Insulators 2013-11-23 Topological Insulators, volume six in the Contemporary Concepts of Condensed Matter Series, describes the recent revolution in condensed matter physics that occurred in our understanding of crystalline solids. The book chronicles the work done worldwide that led to these discoveries and provides the reader with a comprehensive overview of the field. Starting in 2004, theorists began to explore the effect of topology on the physics of band insulators, a field previously considered well understood. However, the inclusion of topology brings key new elements into this old field. Whereas it was thought that all band insulators are essentially equivalent, the new theory predicts two distinct classes of band insulators in two spatial dimensions and 16 classes in three dimensions. These "topological" insulators exhibit a host of unusual physical properties, including topologically protected gapless surface states and exotic electromagnetic response, previously thought impossible in such systems. Within a short time, this new state of quantum matter, topological insulators, has been discovered experimentally both in 2D thin film structures and in 3D crystals and alloys. It appears that topological insulators are quite common in nature, and there are dozens of confirmed substances that exhibit this behavior. Theoretical and experimental studies of these materials are ongoing with the goal of attaining the fundamental understanding and exploiting them in future practical applications. Usable as a textbook for graduate students and as a reference resource for professionals Includes the most recent discoveries and visions for future technological applications All authors are prominent in the field

Thermoforming of Single and Multilayer Laminates Syed Ali Ashter 2013-11-07 Thermoforming of Single and Multilayer Laminates explains the fundamentals of lamination and plastics thermoforming technologies along with current and new developments. It focuses on properties and thermoforming mechanics of plastic films and in particular single and multilayered laminates, including barrier films. For environmental and economic reasons, laminates are becoming increasingly important as a replacement for solid sheets and paint finishes in many industries, including transportation, packaging, and construction. Yet the processes of film formability during the extensive deformation and elevated temperatures experienced in conventional processing technologies, such as thermoforming, are poorly understood by most engineers. This book covers production processes, such as extrusion, calendaring, and casting, as well as mechanical and impact testing methods. It also describes how testing protocols developed for metals can be leveraged for plastic films and laminates, and includes a thorough discussion on methods for performing optical strain analysis. Applications in transportation vehicles and packaging, including packaging for food, medical and electronics applications, sports equipment, and household appliances, are discussed. Safety, recycling and environmental aspects of thermoforming and its products complete the book. First comprehensive source of information and hands-on guide for the thermoforming of multilayered laminates Covers applications across such sectors as automotive, packaging, home goods, and construction Introduces new testing methods leveraging protocols used for metals

Limits to Climate Change Adaptation Walter Leal Filho 2017-11-15 This book sheds new light on the limits of adaptation to anthropogenic climate change. The respective chapters demonstrate the variety of and interconnections between factors that together constitute the constraints on adaptation. The book pays special attention to evidence that illustrates how and where such limits have become apparent or are in the process of establishing themselves, and which indicates future trends and contexts that might prove helpful in understanding adaptation limits. In particular, the book provides an overview of the most important challenges and opportunities regarding adaptation limits at different temporal, jurisdictional, and spatial scales, while also highlighting case studies, projects and best practices that show how they may be addressed. The book presents innovative multi-disciplinary research and gathers evidence from various countries, sectors and regions, the goal being to advance our understanding of the limits to adaptation and ways to overcome or modify them.

Alan Turing: His Work and Impact S. Barry Cooper 2013-03-18 In this 2013 winner of the prestigious R.R. Hawkins Award from the Association of American Publishers, as well as the 2013 PROSE Awards for Mathematics and Best in Physical Sciences & Mathematics, also from the AAP, readers will find many of the most significant contributions from the four-volume set of the Collected Works of A. M. Turing. These contributions, together with commentaries from current experts in a wide spectrum of fields and backgrounds, provide insight on the significance and contemporary impact of Alan Turing's work. Offering a more modern perspective than anything currently available, Alan Turing: His Work and Impact gives wide coverage of the many ways in which Turing's scientific endeavors have impacted current research and understanding of the world. His pivotal writings on subjects including computing, artificial intelligence, cryptography, morphogenesis, and more display continued relevance and insight into today's scientific and technological landscape. This collection provides a great service to researchers, but is also an approachable entry point for readers with limited training in the science, but an urge to learn more about the details of Turing's work. 2013 winner of the prestigious R.R. Hawkins Award from the Association of American Publishers, as well as the 2013 PROSE Awards for Mathematics and Best in Physical Sciences & Mathematics, also from the AAP Named a 2013 Notable Computer Book in Computing Milieux by Computing Reviews Affordable, key collection of the most significant papers by A.M. Turing Commentary explaining the significance of each seminal paper by preeminent leaders in the field Additional resources available online

Surface and Interface Chemistry of Clay Minerals Robert Schoonheydt 2018-11-05 Surface and Interface Chemistry of Clay Minerals, Volume 9, delivers a fundamental understanding of the surface and interface chemistry of clay minerals, thus serving as a valuable resource for researchers active in the fields of materials chemistry and sustainable chemistry. Clay minerals, with surfaces ranging from hydrophilic, to hydrophobic, are widely studied and used as adsorbents. Adsorption can occur at the edges and surfaces of clay mineral layers and particles, and in the interlayer region. This diversity in properties and the possibility to tune the surface properties of clay minerals to match the properties of adsorbed molecules is the basis for study. This book requires a fundamental understanding of the surface and interface chemistry of clay minerals, and of the interaction between adsorbate and adsorbent. It is an essential resource for clay scientists, geologists, chemists, physicists, material scientists, researchers, and students. Presents scientists and engineers with a resource they can rely on for their own research and work involving clay minerals Includes an in-depth look at ion exchange, adsorption of inorganic and organic molecules, including polymers and proteins, and catalysis occurring at the surfaces of clay minerals Includes materials chemistry of clay minerals with chiral clay minerals, optical materials and functional films

Reading in the mobile era West, Mark 2014-04-28 Millions of people do not read for one reason: they do not have access to text. But mobile phones and cellular networks are transforming a scarce resource into an abundant one. Drawing on the analysis of over 4,000 surveys collected in seven developing countries and corresponding qualitative interviews, this report paints a detailed picture of who reads books and stories on mobile devices and

why. The findings illuminate, for the first time, the habits, beliefs and profiles of mobile readers in developing countries. This information points to strategies to expand mobile reading and, by extension, the educational and socio-economic benefits associated with increased reading. Mobile technology can advance literacy and learning in underserved communities around the world. This report shows how.

Graphene Jamie H. Warner 2012-11-17 Providing fundamental knowledge necessary to understand graphene's atomic structure, band-structure, unique properties and an overview of groundbreaking current and emergent applications, this new handbook is essential reading for materials scientists, chemists and physicists. Since the 2010 physics Nobel Prize awarded to Geim and Novosolev for their groundbreaking work isolating graphene from bulk graphite, there has been a huge surge in interest in the area. This has led to a large number of news books on graphene. However, for such a vast inflow of new entrants, the current literature is surprisingly slight, focusing exclusively on current research or books on previous "hot topic" allotropes of carbon. This book covers fundamental groundwork of the structure, property, characterization methods and applications of graphene, along with providing the necessary knowledge of graphene's atomic structure, how it relates to its band-structure and how this in turn leads to the amazing properties of graphene. And so it provides new graduate students and post-docs with a resource that equips them with the knowledge to undertake their research. Discusses graphene's fundamental structure and properties, acting as a time-saving handbook for validated research Demonstrates 100+ high-quality graphical representations, providing the reader with clear images to convey complex situations Reviews characterization techniques relevant to grapheme, equipping the reader with experimental knowledge relevant for practical use rather than just theoretical understanding

Treatise on Process Metallurgy, Volume 1: Process Fundamentals 2013-11-20 Process metallurgy provides academics with the fundamentals of the manufacturing of metallic materials, from raw materials into finished parts or products. Coverage is divided into three volumes, entitled Process Fundamentals, encompassing process fundamentals, extractive and refining processes, and metallurgical process phenomena; Processing Phenomena, encompassing ferrous processing; non-ferrous processing; and refractory, reactive and aqueous processing of metals; and Industrial Processes, encompassing process modeling and computational tools, energy optimization, environmental aspects and industrial design. The work distils 400+ years combined academic experience from the principal editor and multidisciplinary 14-member editorial advisory board, providing the 2,608-page work with a seal of quality. The volumes will function as the process counterpart to Robert Cahn and Peter Haasen's famous reference family, Physical Metallurgy (1996)--which excluded process metallurgy from consideration and which is currently undergoing a major revision under the editorship of David Laughlin and Kazuhiro Hono (publishing 2014). Nevertheless, process and extractive metallurgy are fields within their own right, and this work will be of interest to libraries supporting courses in the process area. Synthesizes the most pertinent contemporary developments within process metallurgy so scientists have authoritative information at their fingertips Replaces existing articles and monographs with a single complete solution, saving time for busy scientists Helps metallurgists to predict changes and consequences and create or modify whatever process is deployed

Small reservoirs in Africa: a review and synthesis to strengthen future investment Saruchera, D. 2019-11-04

Cambridge International AS/A Level Biology Revision Guide 2nd edition Mary Jones 2016-01-25 Get your best grades with this exam-focused text that will guide you through the content and skills you need to prepare for the big day. Manage your own revision with step-by-step support from experienced examiner and author Mary Jones. This guide also includes a Questions and Answers section with exam-style questions, student's answers for each question, and examiner comments to ensure you're exam-ready. - Plan and pace your revision with the revision planner - Use the expert tips to clarify key points - Avoid making typical mistakes with expert advice - Test yourself with end-of-topic questions and answers and tick off each topic as you complete it - Practise your exam skills with exam-style questions and answers This title has not been through the Cambridge International endorsement process.

Thin Film Solar Cells From Earth Abundant Materials Subba Ramaiah Kodigala 2013-11-14 The fundamental concept of the book is to explain how to make thin film solar cells from the abundant solar energy materials by low cost. The proper and optimized growth conditions are very essential while sandwiching thin films to make solar cell otherwise secondary phases play a role to undermine the working function of solar cells. The book illustrates growth and characterization of Cu2ZnSn(S1-xSex)4 thin film absorbers and their solar cells. The fabrication process of absorber layers by either vacuum or non-vacuum process is readily elaborated in the book, which helps for further development of cells. The characterization analyses such as XPS, XRD, SEM, AFM etc., lead to tailor the physical properties of the absorber layers to fit well for the solar cells. The role of secondary phases such as ZnS, Cu2-xS,SnS etc., which are determined by XPS, XRD or Raman, in the absorber layers is promptly discussed. The optical spectroscopy analysis, which finds band gap, optical constants of the films, is mentioned in the book. The electrical properties of the absorbers deal the influence of substrates, growth temperature, impurities, secondary phases etc. The low temperature I-V and C-V measurements of Cu2ZnSn(S1-xSex)4 thin film solar cells are clearly described. The solar cell parameters such as efficiency, fill factor, series resistance, parallel resistance provide handful information to understand the mechanism of physics of thin film solar cells in the book. The band structure, which supports to adjust interface states at the p-n junction of the solar cells is given. On the other hand the role of window layers with the solar cells is discussed. The simulation of theoretical efficiency of Cu2ZnSn(S1-xSex)4 thin film solar cells explains how much efficiency can be experimentally extracted from the cells. One of the first books exploring how to conduct research on thin film solar cells, including reducing costs Detailed instructions on conducting research

Ordinary Level Physics A. F. Abbott 1977

Plastics in Medical Devices Vinny R. Sastri 2010-03-05 No book has been published that gives a detailed description of all the types of plastic materials used in medical devices, the unique requirements that the materials need to comply with and the ways standard plastics can be modified to meet such needs. This book will start with an introduction to medical devices, their classification and some of the regulations (both US and global) that affect their design, production and sale. A couple of chapters will focus on all the requirements that plastics need to meet for medical device applications. The subsequent chapters describe the various types of plastic materials, their properties profiles, the advantages and disadvantages for medical device applications, the techniques by which their properties can be enhanced, and real-world examples of their use. Comparative tables will allow readers to find the right classes of materials suitable for their applications or new product development needs.

Writing Scientific Research Articles Margaret Cargill 2011-09-13 "Margaret Cargill's background as a linguist and research communications educator and Patrick O'Connor's experience as both research scientist and educator synergize to improve both the science and art of scientific writing. If the authors' goal is to give scientists the tools to write and publish compelling, well documented, clear narratives that convey their work honestly and in proper context, they have succeeded admirably." Veterinary Pathology, July 2009 "[The book is] clearly written, has a logical step-by-step structure, is easy to read and contains a lot of sensible advice about how to get scientific work published in international journals. The book is a most useful addition to the literature covering scientific writing." Aquaculture International, April 2009 Writing Scientific Research Articles: Strategy and Steps guides authors in how to write, as well as what to write, to improve their chances of having their articles accepted for publication in international, peer reviewed journals. The book is designed for scientists who use English as a first or an additional language; for research students and those who teach them paper writing skills; and for early-career researchers wanting to hone their skills as authors and mentors. It provides clear processes for selecting target journals and writing each section of a manuscript, starting with the results. The stepwise learning process uses practical exercises to develop writing and data presentation skills through analysis of well-written example papers. Strategies are presented for responding to referee comments, as well as ideas for developing discipline-specific English language skills for manuscript writing. The book is designed for use by individuals or in a class setting. Visit the companion site at www.writeresearch.com.au for more information.

Salinity Gradient Heat Engines Alessandro Tamburini 2021-11-03 Salinity Gradient Heat Engines classifies all the existing SGHEs and presents an in-depth analysis of their fundamentals, applications and perspectives. The main SGHEs analyzed in this publication are Osmotic, the Reverse Electrodialysis, and the Accumulator Mixing Heat Engines. The production and regeneration unit of both cycles are described and analyzed alongside the related economic and environmental aspects. This approach provides the reader with very thorough knowledge on how these technologies can be developed and implemented as a low-impact power generation technique, wherever low-temperature waste-heat is available. This book will also be a very beneficial resource for academic researchers and graduate students across various disciplines, including energy engineering, chemical engineering, chemistry, physics, electrical and mechanical engineering. Focuses on advanced, yet practical, recovery of waste heat via salinity gradient heat engines Outlines the existing salinity gradient heat engines and discusses fundamentals, potential and perspectives of each of them Includes economics and environmental aspects Provides an innovative reference for all industrial sectors involving processes where low-temperature waste-

heat is available.
Diffusion MRI Heidi Johansen-Berg 2013-11-26 This title covers the field of diffusion imaging from the fundamental theory to its most cutting-edge applications. It contains sufficient detail to be a reference book for medical physicists, but also covers aspects of experimental design and example applications that will be of interest to clinical and basic neuroscientists. (Neuroscience)
Combustion Irvin Glassman 2014-12-02 Throughout its previous four editions, Combustion has made a very complex subject both enjoyable and understandable to its student readers and a pleasure for instructors to teach. With its clearly articulated physical and chemical processes of flame combustion and smooth, logical transitions to engineering applications, this new edition continues that tradition. Greatly expanded end-of-chapter problem sets and new areas of combustion engineering applications make it even easier for students to grasp the significance of combustion to a wide range of engineering practice, from transportation to energy generation to environmental impacts. Combustion engineering is the study of rapid energy and mass transfer usually through the common physical phenomena of flame oxidation. It covers the physics and chemistry of this process and the engineering applications—including power generation in internal combustion automobile engines and gas turbine engines. Renewed concerns about energy efficiency and fuel costs, along with continued concerns over toxic and particulate emissions, make this a crucial area of engineering. New chapter on new combustion concepts and technologies, including discussion on nanotechnology as related to combustion, as well as microgravity combustion, microcombustion, and catalytic combustion—all interrelated and discussed by considering scaling issues (e.g., length and time scales) New information on sensitivity analysis of reaction mechanisms and generation and application of reduced mechanisms Expanded coverage of turbulent reactive flows to better illustrate real-world applications Important new sections on stabilization of diffusion flames—for the first time, the concept of triple flames will be introduced and discussed in the context of diffusion flame stabilization
Emergency Triage Kevin Mackway-Jones 2014-02-03 The Manchester Triage System (MTS) is the most widely used triage system in the UK, Europe and Australia, with tens of millions of patients being processed through hospital emergency departments. It is also used in hospitals throughout Brazil. Emergency Triage is the core text for the MTS, which utilises a risk averse system of prioritisation for patients in all unscheduled care settings. As such, it is an essential text for all emergency department staff using the MTS, in particular triage nurses. The book is both a training tool and a reference for daily use in the Emergency Department and prehospital settings. This edition features revised protocols that reflect new approaches to prioritisation, with accompanying revised flowcharts - the core part of the book. Table of Contents Presentation flow charts index 1: Introduction 2: The decision-making process and triage 3: The triage method 4: Pain assessment as part of the triage process 5: Patient management, triage and the triage nurse 6: Auditing the triage process 7: Telephone triage 8: Beyond prioritisation to other applications
Water is Life Hellum, Anne 2015-10-19 This book approached water and sanitation as an African gender and human rights issue. Empirical case studies from Kenya, Malawi, South Africa and Zimbabwe show how coexisting international, national and local regulations of water and sanitation respond to the ways in which different groups of rural and urban women gain access to water for personal, domestic and livelihood purposes. The authors, who are lawyers, sociologists, political scientists and anthropologists, explore how women cope in contexts where they lack secure rights, and participation in water governance institutions, formal and informal. The research shows how women - as producers of family food - rely on water from multiple sources that are governed by community based norms and institutions which recognise the right to water for livelihood. How these ‘common pool water resources’ - due to protection gaps in both international and national law - are threatened by large-scale development and commercialisation initiatives, facilitated through national permit systems, is a key concern. The studies demonstrate that existing water governance structures lack mechanisms which make them accountable to poor and vulnerable water users on the ground, most importantly women. The findings thus underscore the need to intensify measures to hold states accountable, not just in water services provision, but in assuring the basic human right to clean drinking water and sanitation; and also to protect water for livelihoods.
Cambridge O Level Commerce Coursebook Mary Trigwell-Jones 2016-04-30 This second edition for Cambridge O Level Commerce syllabus (7100) is thoroughly updated for first examination from 2018. Written by an experienced author in an engaging and accessible style this Coursebook provides comprehensive coverage of the syllabus and contains lots of activities and practice questions to help students apply commercial theory, with up-to-date, real-life examples.
The Student EQ Edge Steven J. Stein 2013-01-28 "The Student EQ Edge is more relevant today than anyother time in the history of our world. Our opportunity to succeedin the 21st century will depend a great deal on our emotionalintelligence in our transformation to lifelong learning and ourleadership ability. This book is the competitive edge."—Stedman Graham, best-selling author, speaker,entrepreneur "We have been long aware that academic ability does notnecessarily predict college success. This book provides acomprehensive look at emotional intelligence and the role it playsin student persistence. It takes these noncognitive aspects that weknow really matter and puts them into a practical, user-friendlyguide. This book is long overdue in higher education."—Catherine Andersen, master trainer in emotional intelligence;professor and special assistant to the provost for student success,Gallaudet University "As important as book learning is, we know that success in lifeis also dependent upon emotional intelligence. The authors ofThe Student EQ Edge define emotional intelligence andprovide a road map for mastering emotional intelligence skills. Iwould highly recommend The Student EQ Edge to any highschool or college student interested in knowing what it takes to betruly successful both inside and outside the classroom." —BradBeacham, executive director, Sigma Nu Fraternity, Inc. "The Student EQ Edge is substantive, readable, and sureto appeal to students both in classes as well as those who arelucky to pick it up for personal development reading. The book isappealing because the research is understandable; numerous examplesare integrated throughout, and readers are encouraged to apply whatthey are reading." —Dennis Roberts, assistant vice presidentfor faculty and student services for the Qatar Foundation