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Assessment of Solid-State Lighting, Phase Two National Academies of Sciences, Engineering, and Medicine 2017-06-11 The standard incandescent light bulb, which still works mainly as Thomas Edison invented it, converts more than 90% of the consumed electricity into heat. Given the availability of newer lighting technologies that convert a greater percentage of electricity into useful light, there is potential to decrease the amount of energy used for lighting in both commercial and residential applications. Although technologies such as compact fluorescent lamps (CFLs) have emerged in the past few decades and will help achieve the goal of increased energy efficiency, solid-state lighting (SSL) stands to play a large role in dramatically decreasing U.S. energy consumption for lighting. Since the publication of the 2013 National Research Council report *Assessment of Advanced Solid-State Lighting*, the penetration of SSL has increased dramatically, with a resulting savings in energy and costs that were foreshadowed by that study. What was not anticipated then is the dramatic dislocation and restructuring of the SSL marketplace, as cost reductions for light-emitting diode (LED) components reduced profitability for LED manufacturers. At the same time, there has been the emergence of new applications for SSL, which have the potential to create new markets and commercial opportunities for the SSL industry. *Assessment of Solid-State Lighting, Phase Two* discusses these aspects of change—highlighting the progress of commercialization and acceptance of SSL and reviewing the technical advances and challenges in achieving higher efficacy for LEDs and organic light-emitting diodes. This report will also discuss the recent trends in SSL manufacturing and opportunities for new applications and describe the role played by the Department of Energy (DOE) Lighting Program in the development of SSL.

The Routledge Atlas of South Asian Affairs Robert W. Bradnock 2015-10-14 South Asia has developed from a group of newly independent post-Colonial states of at most secondary importance to the wider world to its current position as a region of central strategic importance to both global economic development and world peace and stability. This Atlas highlights the global significance of South Asia in relation to economic, geopolitical and strategic interests. It provides a coherent descriptive and analytical account of the key elements of the complex societies that make up the region and its component countries. Illustrated with more than 100 original maps and offering concise entries on key issues, the book is structured thematically in these sections: Global Context Geographical Environments Historical Evolution of South Asia Key Issues in modern South Asia Economy and Security Designed for use in teaching undergraduate and graduate classes and seminars in geography, history, economics, anthropology, international relations, political science and the environment as well as regional courses on the South Asia, this book is also a comprehensive reference source for libraries and decision makers focusing on South Asia.

Distributed, Ambient, and Pervasive Interactions Norbert Streitz 2015-07-21 This book constitutes the refereed proceedings of the Third International Conference on Distributed, Ambient, and Pervasive Interactions, DAPI 2015, held as part of the 17th International Conference on Human-Computer Interaction, HCII 2015, held in Los Angeles, CA, USA, in August 2015, jointly with 15 other thematically conferences. The total of 1462 papers and 246 posters presented at the HCII 2015 conferences were carefully reviewed and selected from 4843 submissions. These papers address the latest research and development efforts and highlight the human aspects of design and use of computing systems. The papers accepted for presentation thoroughly cover the entire field of human-computer interaction, addressing major advances in knowledge and effective use of computers in a variety of application areas. This volume contains papers addressing the following major topics: designing and developing intelligent environments; natural interaction; design and development of distributed, ambient and pervasive interactions; smart devices, objects and materials; location, motion and activity recognition; smart cities and communities; and humor in ambient intelligence.

Review of the 21st Century Truck Partnership National Academies of Sciences, Engineering, and Medicine 2015-11-25 The 21st Century Truck Partnership (21CTP) works to reduce fuel consumption and emissions, increase heavy-duty vehicle safety, and support research, development, and demonstration to initiate commercially viable products and systems. This report is the third in a series of three by the National Academies of Sciences, Engineering, and Medicine that have reviewed the research and development initiatives carried out by the 21CTP. *Review of the 21st Century Truck Partnership, Third Report* builds on the Phase 1 and 2 reviews and reports, and also comments on changes and progress since the Phase 2 report was issued in 2012.

Learning Science Barbara Schneider 2020-02-11 An innovative, internationally developed system to help advance science learning and instruction for high school students This book tells the story of a \$3.6 million research project funded by the National Science Foundation aimed at increasing scientific literacy and addressing global concerns of declining science engagement. Studying dozens of classrooms across the United States and Finland, this international team combines large-scale studies with intensive interviews from teachers and students to examine how to transform science education. Written for teachers, parents, policymakers, and researchers, this book offers solutions for matching science learning and instruction with newly recommended twenty-first-century standards.

Research Handbook on Climate Governance Karin Bäckstrand 2015-11-27 The 2009 United Nations climate conference in Copenhagen is often represented as a watershed in global climate politics, when the diplomatic efforts to negotiate a successor agreement to the Kyoto Protocol failed and was replaced by a fragmented and decentralized climate governance order. In the post-Copenhagen landscape the top-down universal approach to climate governance has gradually given way to a more complex, hybrid and dispersed political landscape involving multiple actors, arenas and sites. The Handbook contains contributions from more than 50 internationally leading scholars and explores the latest trends and theoretical developments of the climate governance scholarship.

Communication Technology Update and Fundamentals August E. Grant 2016-11-03 *Communication Technology Update and Fundamentals* has set the standard as the single best resource for students and professionals looking to brush up on how communication technologies have developed, grown, and converged, as well as what's in store for the future. The 15th edition is completely updated, reflecting the changes that have swept the communication industries. The first five chapters offer the communication technology fundamentals, including the ecosystem, the history, and structure—then

delves into each of about two dozen technologies, including mass media, computers, consumer electronics, and networking technologies. Each chapter is written by experts who provide snapshots of the state of each individual field. Together, these updates provide a broad overview of these industries, as well as the role communication technologies play in our everyday lives. In addition to substantial updates to each chapter, the 15th edition includes: First-ever chapters on Big Data and the Internet of Things Updated user data in every chapter Projections of what each technology will become by 2031 Suggestions on how to get a job working with the technologies discussed The companion website, www.tfi.com/ctu, offers updated information on the technologies covered in this text, as well as links to other resources **Geographies, Mobilities, and Rhythms over the Life-Course** Elaine Stratford 2014-11-20 By thinking in terms of the geographies of mobilities, we are better able to understand the central importance of movements, rhythms and shifting emplacements over the life-course. This innovative book represents research from a new and flourishing multidisciplinary field that includes, among other things, studies on smart cities, infrastructures and networks; mobile technologies for automated highways or locative media; mobility justice and rights to stay or enter or reside. These activities, cadences and changing attachments to place have profound effects—first upon how we conduct or govern ourselves and each other via many social institutions, and second upon how we constitute the spaces in and through which our lives are experienced. This scholarship also has clear connections to numerous aspects of social and spatial policy and planning.

Creating China's Climate Change Policy Olivia Gippner 2020-02-28 Drawing on first hand interview data with experts and government officials, Olivia Gippner develops a new analytical framework to explore the vested interests and policy debates surrounding Chinese climate policy-making.

Charge Dynamics in Organic Semiconductors Pascal Kordt 2016-09-12 In the field of organic semiconductors researchers and manufacturers are faced with a wide range of potential molecules. This work presents concepts for simulation-based predictions of material characteristics starting from chemical structures. The focus lies on charge transport – be it in microscopic models of amorphous morphologies, lattice models or large-scale device models. An extensive introductory review, which also includes experimental techniques, makes this work interesting for a broad readership. Contents: Organic Semiconductor Devices Experimental Techniques Charge Dynamics at Dierent Scales Computational Methods Energetics and Dispersive Transport Correlated Energetic Landscapes Microscopic, Stochastic and Device Simulations Parametrization of Lattice Models Drift–Diusion with Microscopic Link

Future Spacecraft Propulsion Systems and Integration Paul A. Czysz 2017-08-30 The updated and expanded third edition of this book focuses on the multi-disciplinary coupling between flight-vehicle hardware alternatives and enabling propulsion systems. It discusses how to match near-term and far-term aerospace vehicles to missions and provides a comprehensive overview of the subject, directly contributing to the next-generation space infrastructure, from space tourism to space exploration. This holistic treatment defines a mission portfolio addressing near-term to long-term space transportation needs covering sub-orbital, orbital and escape flight profiles. In this context, a vehicle configuration classification is introduced covering alternatives starting from the dawn of space access. A best-practice parametric sizing approach is introduced to correctly design the flight vehicle for the mission. This technique balances required mission with the available vehicle solution space and is an essential capability sought after by technology forecasters and strategic planners alike.

Science Policies and Twentieth-Century Dictatorships Amparo Gómez 2016-03-03 Making a fresh contribution to the political history of science, this book explores the connections between the science policies of three countries that each experienced considerable political upheaval in the twentieth century: Spain, Italy and Argentina. By focussing on these three countries, the contributors are able to present case studies that highlight the characteristics and specificities of the democratic and dictatorial political processes involved in the production of science and technology. The focus on dictatorship presents the opportunity to expand our knowledge -beyond the more extensive literature about science in Nazi Germany and Stalinist USSR -about the level of political involvement of scientists in non-democratic contexts and to what extent they act as politicians in different contexts. Key topics covered include the new forms of organization and institutionalization of science in the twentieth century; the involvement of scientific communities in the governance of science and its institutions; the role of ideology in scientific development; the scientific practices adopted by scientific communities in different contexts; and the characteristics of science and technology produced in these contexts.

Harmonic Oscillators and Two-By-Two Matrices in Symmetry Problems in Physics Young Suh Kim 2018-07-09 This book is a printed edition of the Special Issue "Harmonic Oscillators In Modern Physics" that was published in *Symmetry*

Cyber-Physical Systems Gaddadevara Matt Siddesh 2015-12-01 In cyber-physical systems (CPS), sensors and embedded systems are networked together to monitor and manage a range of physical processes through a continuous feedback system. This allows distributed computing using wireless devices. *Cyber-Physical Systems—A Computational Perspective* examines various developments of CPS that are impacting our daily lives and sets the stage for future directions in this domain. The book is divided into six sections. The first section covers the physical infrastructure required for CPS, including sensor networks and embedded systems. The second section addresses energy issues in CPS with the use of supercapacitors and reliability assessment. In the third section, the contributors describe the modeling of CPS as a network of robots and explore issues regarding the design of CPS. The fourth section focuses on the impact of ubiquitous computing and cloud computing in CPS and the fifth section discusses security and privacy issues in CPS. The final section covers the role of CPS in big data analytics, social network analysis, and healthcare. As CPS are becoming more complex, pervasive, personalized, and dependable, they are moving beyond niche laboratories to real-life application areas, such as robotics, smart grids, green computing, and healthcare. This book provides you with a guide to current CPS research and development that will contribute to a "smarter" planet.

Developing Property Sustainably Sara J. Wilkinson 2015-06-05 *Developing Property Sustainably* introduces readers to the key issues surrounding sustainable property development in the global marketplace. Pulling together received wisdom and

original research, the authors provide a clear and practical overview of the sustainable property development process as well as a critical appraisal of the problems faced by global built environment stakeholders. Throughout, the authors demonstrate how the property development industry could and should respond better to debate on sustainable practices in the built environment by adopting more rigorous measurement techniques and sustainable approaches. Starting by exploring key definitions and stakeholders, the book goes on to explore finance, planning, construction, procurement, occupation, retrofit and lifecycle sustainability in order to provide the reader with a detailed understanding of all the issues involved in the delivery of sustainable property development from inception to occupation and beyond. Throughout the book, international case studies are used to demonstrate how sustainable property development is applied in practice around the world. With a logical chapter structure and accessible writing style, Developing Property Sustainably would be perfect for use on undergraduate and postgraduate modules and courses in real estate development, property and urban development and other built environment programmes.

Determinism, Death, and Meaning Stephen Maitzen 2021-11-30 This book offers new arguments for determinism. It draws novel and surprising consequences from determinism for our attitudes toward such things as death, regret, grief, and the meaning of life. The book argues that rationalism is the right attitude to take toward reality. It then shows that rationalism implies determinism and that determinism has surprising and far-reaching consequences. The author contends that the existence of all of humanity almost certainly depends on the precise time and manner of your death and mine; that purely retrospective regret, relief, gratitude, and grief are irrational for all but those who hold extreme values; and that everyone's life has an unending impact on the future and thereby achieves the strongest kind of meaning that it makes sense to desire. Written in a direct and accessible style, Determinism, Death, and Meaning will be of interest to researchers and advanced students working in metaphysics, philosophy of religion, and value theory, as well as general readers with a serious interest in these topics.

Face To Face MAT With 24 Years Solved Papers 2021 BS Sijwalii 2021-11-24 1. FACE 2 FACE MAT is a complete collection of 24 years' Solved Papers 2. The book is divided into 5 section 3. Solved Papers are provided for the practice of the question 4. We detailed answers are given for every question for better understanding Here comes "FACE 2 FACE MAT 24 years' Solved Paper (2020 – 1997)" prepared under the close guidance of experts by keeping in mind to meet all the needs of students preparing for this exam and to gain entry into top business schools. Following the methodical approach this book gives comprehensive treatment to all the 5 sections as prescribed by the board. Ample numbers of solved questions (2020-1997) are mentioned in this book giving clear guidance on how to attempt the various types of questions with tips and tricks. Solved Papers are given to get acquainted with the paper pattern and question types. Adopting the unique style of teaching this book helps students to not only learn about the concepts but also managing time in during exam. Based on the latest syllabus and providing such a huge amount of solved papers, this book is a perfect study manual assuring success at your upcoming examination. TABLE OF CONTENT MAT SOLVED PAPER (Sept 2020), MAT SOLVE PAPER (May 2019), MAT SOLVED PAPER (May 2018), SECTION I: (Language & Comprehension), SECTION II: Intelligence & Critical Thinking, SECTION III: Mathematical Skills, SECTION IV: Data Analysis & Sufficiency, SECTION V: Indian & Global Environment.

Künstliche allgemeine Intelligenz Vasil Teigens 2020-01-30 Künstliche allgemeine Intelligenz (Artificial General Intelligence, AGI) ist die Intelligenz einer Maschine, die jede intellektuelle Aufgabeverstehen oder lernen kann, die ein Mensch kann. Es ist ein vorrangiges Ziel einiger Forschungsarbeiten zur künstlichen Intelligenz und ein allgemeines Thema in der Science-Fiction- und Zukunftsforschung. AGI kann auch als starke KI, vollständige KI oder allgemeine intelligente Aktion bezeichnet werden. (Einige akademische Quellen behalten den Begriff "starke KI" für Maschinen vor, die Bewusstsein erfahren können.) Einige Behörden betonen eine Unterscheidung zwischen starker KI und angewandter KI (auch enge KI oder schwache KI genannt): den Einsatz von Software zum Studium oder zur Erledigung spezifischer Aufgaben zur Problemlösung oder zum Lösen von Überlegungen. Eine schwache KI versucht im Gegensatz zu einer starken KI nicht, die gesamte Bandbreite der menschlichen kognitiven Fähigkeiten zu erreichen.

Research and Applications in Global Supercomputing Segall, Richard S. 2015-01-31 Rapidly generating and processing large amounts of data, supercomputers are currently at the leading edge of computing technologies. Supercomputers are employed in many different fields, establishing them as an integral part of the computational sciences. Research and Applications in Global Supercomputing investigates current and emerging research in the field, as well as the application of this technology to a variety of areas. Highlighting a broad range of concepts, this publication is a comprehensive reference source for professionals, researchers, students, and practitioners interested in the various topics pertaining to supercomputing and how this technology can be applied to solve problems in a multitude of disciplines.

Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles National Research Council 2015-09-28 The light-duty vehicle fleet is expected to undergo substantial technological changes over the next several decades. New powertrain designs, alternative fuels, advanced materials and significant changes to the vehicle body are being driven by increasingly stringent fuel economy and greenhouse gas emission standards. By the end of the next decade, cars and light-duty trucks will be more fuel efficient, weigh less, emit less air pollutants, have more safety features, and will be more expensive to purchase relative to current vehicles. Though the gasoline-powered spark ignition engine will continue to be the dominant powertrain configuration even through 2030, such vehicles will be equipped with advanced technologies, materials, electronics and controls, and aerodynamics. And by 2030, the deployment of alternative methods to propel and fuel vehicles and alternative modes of transportation, including autonomous vehicles, will be well underway. What are these new technologies - how will they work, and will some technologies be more effective than others? Written to inform The United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and Environmental Protection Agency (EPA) Corporate Average Fuel Economy (CAFE) and greenhouse gas (GHG) emission standards, this new report from the National Research Council is a technical evaluation of costs, benefits, and implementation issues of fuel reduction technologies for next-generation light-duty vehicles. Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles estimates the cost, potential efficiency improvements, and barriers to commercial deployment of technologies that might be employed from 2020 to 2030. This report describes these promising technologies and makes recommendations for their inclusion on the list of technologies applicable for the 2017-2025 CAFE standards.

A History of Civilization in 50 Disasters (History in 50) Gale Eaton 2015-10-23 *2016 IBPA Benjamin Franklin Silver Award Winner* The earth shakes and cracks open. Volcanoes erupt. Continents freeze, bake, and flood. Droughts parch the land. Wildfires and hundred-year storms consume anything in their paths. Invisible clouds of disease and pestilence probe for victims. Tidal waves sweep ashore from the vast sea. The natural world is a dangerous place, but one species has evolved a unique defense against the hazards: civilization. Civilization rearranges nature for human convenience.

Clothes and houses keep us warm; agriculture feeds us; medicine fights our diseases. It all works—most of the time. But key resources lie in the most hazardous places, so we choose to live on river flood plains, on the slopes of volcanoes, at the edge of the sea, above seismic faults. We pack ourselves into cities, Petri dishes for germs. Civilization thrives on the edge of disaster. And what happens when natural forces meet molasses holding tanks, insecticides, deepwater oil rigs, nuclear power plants? We learn the hard way how to avoid the last disaster—and maybe how to create the next one. What we don't know can, indeed, hurt us. This book's white-knuckled journey from antiquity to the present leads us to wonder at times how humankind has survived. And yet, as Author Gale Eaton makes clear, civilization has advanced not just in spite of disasters but in part because of them. Hats off to human resilience, ingenuity, and perseverance! They've carried us this far; may they continue to do so into our ever-hazardous future. The History in 50 series explores history by telling thematically linked stories. Each book includes 50 illustrated narrative accounts of people and events—some well-known, others often overlooked—that, together, build a rich connect-the-dots mosaic and challenge conventional assumptions about how history unfolds. Dedicated to the premise that history is the greatest story ever told. Includes a mix of "greatest hits" with quirky, surprising, provocative accounts. Challenges readers to think and engage. Includes a glossary of technical terms; sources by chapter; teaching resources as jumping-off points for student research; and endnotes. Fountas & Pinnell Level Z+

Canadian Journal of Physics 2014

Data Management for Researchers Kristin Briney 2015-09-01 A comprehensive guide to everything scientists need to know about data management, this book is essential for researchers who need to learn how to organize, document and take care of their own data. Researchers in all disciplines are faced with the challenge of managing the growing amounts of digital data that are the foundation of their research. Kristin Briney offers practical advice and clearly explains policies and principles, in an accessible and in-depth text that will allow researchers to understand and achieve the goal of better research data management. Data Management for Researchers includes sections on: * The data problem – an introduction to the growing importance and challenges of using digital data in research. Covers both the inherent problems with managing digital information, as well as how the research landscape is changing to give more value to research datasets and code. * The data lifecycle – a framework for data's place within the research process and how data's role is changing. Greater emphasis on data sharing and data reuse will not only change the way we conduct research but also how we manage research data. * Planning for data management – covers the many aspects of data management and how to put them together in a data management plan. This section also includes sample data management plans. * Documenting your data – an often overlooked part of the data management process, but one that is critical to good management; data without documentation are frequently unusable. * Organizing your data – explains how to keep your data in order using organizational systems and file naming conventions. This section also covers using a database to organize and analyze content. * Improving data analysis – covers managing information through the analysis process. This section starts by comparing the management of raw and analyzed data and then describes ways to make analysis easier, such as spreadsheet best practices. It also examines practices for research code, including version control systems. * Managing secure and private data – many researchers are dealing with data that require extra security. This section outlines what data falls into this category and some of the policies that apply, before addressing the best practices for keeping data secure. * Short-term storage – deals with the practical matters of storage and backup and covers the many options available. This section also goes through the best practices to insure that data are not lost. * Preserving and archiving your data – digital data can have a long life if properly cared for. This section covers managing data in the long term including choosing good file formats and media, as well as determining who will manage the data after the end of the project. * Sharing/publishing your data – addresses how to make data sharing across research groups easier, as well as how and why to publicly share data. This section covers intellectual property and licenses for datasets, before ending with the altmetrics that measure the impact of publicly shared data. * Reusing data – as more data are shared, it becomes possible to use outside data in your research. This chapter discusses strategies for finding datasets and lays out how to cite data once you have found it. This book is designed for active scientific researchers but it is useful for anyone who wants to get more from their data: academics, educators, professionals or anyone who teaches data management, sharing and preservation. "An excellent practical treatise on the art and practice of data management, this book is essential to any researcher, regardless of subject or discipline." –Robert Buntrock, Chemical Information Bulletin

Publications Combined - Over 100 Studies In Nanotechnology With Medical, Military And Industrial Applications 2008-2017

Over 7,300 total pages ... Just a sample of the contents: Title : Multifunctional Nanotechnology Research Descriptive Note : Technical Report,01 Jan 2015,31 Jan 2016 Title : Preparation of Solvent-Dispersible Graphene and its Application to Nanocomposites Descriptive Note : Technical Report Title : Improvements To Micro Contact Performance And Reliability Descriptive Note : Technical Report Title : Delivery of Nanotethered Therapies to Brain Metastases of Primary Breast Cancer Using a Cellular Trojan Horse Descriptive Note : Technical Report,15 Sep 2013,14 Sep 2016 Title : Nanotechnology-Based Detection of Novel microRNAs for Early Diagnosis of Prostate Cancer Descriptive Note : Technical Report,15 Jul 2016,14 Jul 2017 Title : A Federal Vision for Future Computing: A Nanotechnology-Inspired Grand Challenge Descriptive Note : Technical Report Title : Quantifying Nanoparticle Release from Nanotechnology: Scientific Operating Procedure Series: SOP C 3 Descriptive Note : Technical Report Title : Synthesis, Characterization And Modeling Of Functionally Graded Multifunctional Hybrid Composites For Extreme Environments Descriptive Note : Technical Report,15 Sep 2009,14 Mar 2015 Title : Equilibrium Structures and Absorption Spectra for Six0y Molecular Clusters using Density Functional Theory Descriptive Note : Technical Report Title : Nanotechnology for the Solid Waste Reduction of Military Food Packaging Descriptive Note : Technical Report,01 Apr 2008,01 Jan 2015 Title : Magneto-Electric Conversion of Optical Energy to Electricity Descriptive Note : Final performance rept. 1 Apr 2012-31 Mar 2015 Title : Surface Area Analysis Using the Brunauer-Emmett-Teller (BET) Method: Standard Operating Procedure Series: SOP-C Descriptive Note : Technical Report,30 Sep 2015,30 Sep 2016 Title : Stabilizing Protein Effects on the Pressure Sensitivity of Fluorescent Gold Nanoclusters Descriptive Note : Technical Report Title : Theory-Guided Innovation of Noncarbon Two-Dimensional Nanomaterials Descriptive Note : Technical Report,14 Feb 2012,14 Feb 2016 Title : Detering Emergent Technologies Descriptive Note : Journal Article Title : The Human Domain and the Future of Army Warfare: Present as Prelude to 2050 Descriptive Note : Technical Report Title : Drone Swarms Descriptive Note : Technical Report,06 Jul 2016,25 May 2017 Title : OFFSETTING TOMORROW'S ADVERSARY IN A CONTESTED ENVIRONMENT: DEFENDING EXPEDITIONARY ADVANCE BASES IN 2025 AND BEYOND Descriptive Note : Technical Report Title : A Self Sustaining Solar-Bio-Nano Based Wastewater Treatment System for Forward Operating Bases Descriptive Note : Technical Report,01 Feb 2012,31 Aug 2017 Title : Radiation Hard and Self Healing Substrate Agnostic Nanocrystalline ZnO Thin Film Electronics Descriptive Note : Technical Report,26 Sep 2011,25 Sep 2015 Title : Modeling and Experiments with Carbon Nanotubes for Applications in High Performance Circuits

Descriptive Note : Technical Report Title : Radiation Hard and Self Healing Substrate Agnostic Nanocrystalline ZnO Thin Film Electronics (Per5 E) Descriptive Note : Technical Report,01 Oct 2011,28 Jun 2017 Title : High Thermal Conductivity Carbon Nanomaterials for Improved Thermal Management in Armament Composites Descriptive Note : Technical Report Title : Emerging Science and Technology Trends: 2017-2047 Descriptive Note : Technical Report Title : Catalysts for Lightweight Solar Fuels Generation Descriptive Note : Technical Report,01 Feb 2013,31 Jan 2017 Title : Integrated Real-Time Control and Imaging System for Microbiorobotics and Nanobiostructures Descriptive Note : Technical Report,01 Aug 2013,31 Jul 2014

Mission-Oriented Sensor Networks and Systems: Art and Science Habib M. Ammari 2019-09-18 This book presents a broad range of deep-learning applications related to vision, natural language processing, gene expression, arbitrary object recognition, driverless cars, semantic image segmentation, deep visual residual abstraction, brain-computer interfaces, big data processing, hierarchical deep learning networks as game-playing artefacts using regret matching, and building GPU-accelerated deep learning frameworks. Deep learning, an advanced level of machine learning technique that combines class of learning algorithms with the use of many layers of nonlinear units, has gained considerable attention in recent times. Unlike other books on the market, this volume addresses the challenges of deep learning implementation, computation time, and the complexity of reasoning and modeling different type of data. As such, it is a valuable and comprehensive resource for engineers, researchers, graduate students and Ph.D. scholars.

Technology For Transformation Libbi R. Miller 2016-04-01 This book serves as a platform for educators and researchers to unite educational technology and social justice. While educational technology is a rapidly changing and progressive field of research and practice, it remains largely separate from education for social justice. Current literature about educational technology is often approached from a technical, how-to perspective that emphasizes ways to implement technology into the classroom. Technology is often viewed as inevitable, yet neutral and value-free. Educational technology, however, is anything but neutral. The contributors collectively advance a hopeful discourse by exploring the potential of technology as a vehicle to transform and emancipate, while not forgoing a critically reflective measure of self-conscious critique of our own role as educators, students, or scholars in oppressive silences, constraints and conditions. This edited collection makes an important and unique contribution to the field, as it will be the first published volume to detail research, theory, and practice regarding student use of technology in achieving liberatory aims since IAP's 2009 publication, *ICT for Education, Development and Social Justice*. The fields of educational technology and social justice are vast and applicable in many domains, including teacher education, graduate programs, and K-12 education. This work is intended to appeal to a diverse academic and professional audience of K-12 teachers, teacher educators, educational technology and social justice scholars, and policy makers. Scholars and academics instructing graduate-level educational technology courses can reference this edited collection as the most current text on socially just educational technology. Educational practitioners from teacher education programs and the K-12 sector may use this book as a source of ideas and inspiration to incorporate student use of technology toward emancipatory aims. This title could be adopted as a course text for both undergraduate and graduate education courses in: media literacy, digital literacy, distance education, education for social justice, and teacher preparation, and educational technology courses. Readers will also be able to use the book as a guide when critically analyzing their own professional practice, whether it is in research, working with K-12 students, or preparing future educators or scholars.

Gender and Climate Change Joane Nagel 2015-09-25 Does gender matter in global climate change? This timely and provocative book takes readers on a guided tour of basic climate science, then holds up a gender lens to find out what has been overlooked in popular discussion, research, and policy debates. We see that, around the world, more women than men die in climate-related natural disasters; the history of science and war are intimately interwoven masculine occupations and preoccupations; and conservative men and their interests drive the climate change denial machine. We also see that climate policymakers who embrace big science approaches and solutions to climate change are predominantly male with an ideology of perpetual economic growth, and an agenda that marginalizes the interests of women and developing economies. The book uses vivid case studies to highlight the sometimes surprising differential, gendered impacts of climate changes.

Promoting Behaviour for Learning in the Classroom Simon Ellis 2014-10-17 Promoting Behaviour for Learning in the Classroom offers essential support to help you develop capacity and confidence in managing behaviour in the group setting of the classroom. It provides a concise analysis of established behaviour management strategies, recognising that no single approach will work for all pupils and that central to effective practice is an understanding of the different personal attributes and experiences teachers and pupils bring to the classroom Illustrated by examples from the classroom, Promoting Behaviour for Learning in the Classroom uses the tried and tested 'Behaviour for Learning' framework to show how teachers' expertise in promoting learning can be used to improve behaviour. Key issues considered include: Developing positive relationships in the classroom Understanding personal style and self-management Effective use of feedback and rewards Using positive correction and sanctions Working with school systems and frameworks for managing behaviour Individual differences and special educational needs Dealing with challenging behaviour Written by experts in the field, Promoting Behaviour for Learning in the Classroom offers much-needed in-depth, realistic support and guidance to show teachers how to improve learning and behaviour in the group setting of the classrooms.

Geothermal Water Management Jochen Bundschuh 2018-03-12 Availability of and adequate accessibility to freshwater and energy are two key technological and scientific problems of global significance. At the end of the 20th century, the deficit of water for human consumption and economic application forced us to focus on rational use of resources. Increasing the use of renewable energy sources and improving energy efficiency is a challenge for the 21st century. Geothermal energy is heat energy generated and stored in the Earth, accumulated in hydrothermal systems or in dry rocks within the Earth's crust, in amounts which constitute the energy resources. The sustainable management of geothermal energy resources should be geared towards optimization of energy recovery, but also towards rational management of water resources since geothermal water serves both as energy carrier and also as valuable raw material. Geothermal waters, depending on their hydrogeothermal characteristics, the lithology of the rocks involved, the depth at which the resources occur and the sources of water supply, may be characterized by very diverse physicochemical parameters. This factor largely determines the technology to be used in their exploitation and the way the geothermal water can be used. This book is focused on the effective use of geothermal water and renewable energy for future needs in order to promote modern, sustainable and effective management of water resources. The research field includes crucial new areas of study: • an improvement in the management of freshwater resources through the use of residual geothermal water; • a review of the technologies available in the field of geothermal water treatment for its (re)use for energetic purposes and freshwater production, and • the development of balneotherapy. The book is aimed at professionals, academics and

decision makers worldwide, water sector representatives and administrators, business enterprises specializing in renewable energy management and water treatment, working in the areas of geothermal energy usage, water resources, water supply and energy planning. This book has the potential to become a standard text used by educational institutions and research & development establishments involved in the geothermal water management.

Introduction to Urban Science Luis M. A. Bettencourt 2021-08-17 A novel, integrative approach to cities as complex adaptive systems, applicable to issues ranging from innovation to economic prosperity to settlement patterns. Human beings around the world increasingly live in urban environments. In *Introduction to Urban Science*, Luis Bettencourt takes a novel, integrative approach to understanding cities as complex adaptive systems, claiming that they require us to frame the field of urban science in a way that goes beyond existing theory in such traditional disciplines as sociology, geography, and economics. He explores the processes facilitated by and, in many cases, unleashed for the first time by urban life through the lenses of social heterogeneity, complex networks, scaling, circular causality, and information. Though the idea that cities are complex adaptive systems has become mainstream, until now those who study cities have lacked a comprehensive theoretical framework for understanding cities and urbanization, for generating useful and falsifiable predictions, and for constructing a solid body of empirical evidence so that the discipline of urban science can continue to develop. Bettencourt applies his framework to such issues as innovation and development across scales, human reasoning and strategic decision-making, patterns of settlement and mobility and their influence on socioeconomic life and resource use, inequality and inequity, biodiversity, and the challenges of sustainable development in both high- and low-income nations. It is crucial, says Bettencourt, to realize that cities are not "zero-sum games" and that knowledge, human cooperation, and collective action can build a better future.

The New ABCs of Research Ben Shneiderman 2016-02-04 The problems we face in the 21st century require innovative thinking from all of us. Be it students, academics, business researchers of government policy makers. Hopes for improving our healthcare, food supply, community safety and environmental sustainability depend on the pervasive application of research solutions. The research heroes who take on the immense problems of our time face bigger than ever challenges, but if they adopt potent guiding principles and effective research lifecycle strategies, they can produce the advances that will enhance the lives of many people. These inspirational research leaders will break free from traditional thinking, disciplinary boundaries, and narrow aspirations. They will be bold innovators and engaged collaborators, who are ready to lead, yet open to new ideas, self-confident, yet empathetic to others. In this book, Ben Shneiderman recognizes the unbounded nature of human creativity, the multiplicative power of teamwork, and the catalytic effects of innovation. He reports on the growing number of initiatives to promote more integrated approaches to research so as to promote the expansion of these efforts. It is meant as a guide to students and junior researchers, as well as a manifesto for senior researchers and policy makers, challenging widely-held beliefs about how applied innovations evolve and how basic breakthroughs are made, and helping to plot the course towards tomorrow's great advancements.

Technological Innovation in Legacy Sectors William B. Bonvillian 2015-08-18 The American economy faces two deep problems: expanding innovation and raising the rate of quality job creation. Both have roots in a neglected problem: the resistance of Legacy economic sectors to innovation. While the U.S. has focused its policies on breakthrough innovations to create new economic frontiers like information technology and biotechnology, most of its economy is locked into Legacy sectors defended by technological/ economic/ political/ social paradigms that block competition from disruptive innovations that could challenge their models. Americans like to build technology "covered wagons" and take them "out west" to open new innovation frontiers; we don't head our wagons "back east" to bring innovation to our Legacy sectors. By failing to do so, the economy misses a major opportunity for innovation, which is the bedrock of U.S. competitiveness and its standard of living. Technological Innovation in Legacy Sectors uses a new, unifying conceptual framework to identify the shared features underlying structural obstacles to innovation in major Legacy sectors: energy, air and auto transport, the electric power grid, buildings, manufacturing, agriculture, health care delivery and higher education, and develops approaches to understand and transform them. It finds both strengths and obstacles to innovation in the national innovation environments - a new concept that combines the innovation system and the broader innovation context - for a group of Asian and European economies. Manufacturing is a major Legacy sector that presents a particular challenge because it is a critical stage in the innovation process. By increasingly offshoring production, the U.S. is losing important parts of its innovation capacity. "Innovate here, produce here," where the U.S. took all the gains of its strong innovation system at every stage, is being replaced by "innovate here, produce there," which threatens to lead to "produce there, innovate there." To bring innovation to Legacy sectors, authors William Bonvillian and Charles Weiss recommend that policymakers focus on all stages of innovation from research through implementation. They should fill institutional gaps in the innovation system and take measures to address structural obstacles to needed disruptive innovations. In the specific case of advanced manufacturing, the production ecosystem can be recreated to reverse "jobless innovation" and add manufacturing-led innovation to the U.S.'s still-strong, research-oriented innovation system.

Let There Be Light! Robert S. Dutch 2017-06-16 Have you ever wondered what it is like to work on a nuclear power plant? Robert Dutch worked in the UK's nuclear industry for many years as a scientist and then as a tutor at a nuclear training center. He also holds degrees in theology. Drawing upon his qualifications and experience Robert addresses the controversial issue of nuclear power from a Christian perspective. In contrast to a negative nuclear narrative often portrayed, he presents a positive nuclear narrative alongside other ways of generating electricity. Be prepared to be challenged to think seriously about nuclear's merits in providing clean, low-carbon electricity.

Handbook of the International Political Economy of Energy and Natural Resources Andreas Goldthau 2018-01-26 This Handbook offers a comprehensive overview of the latest research from leading scholars on the international political economy of energy and resources. Highlighting the important conceptual and empirical themes, the chapters study all levels of governance, from global to local, and explore the wide range of issues emerging in a changing political and economic environment.

Routledge Handbook of Nuclear Proliferation and Policy Joseph F. Pilat 2015-05-15 This new Handbook is a comprehensive examination of the rich and complex issues of nuclear proliferation in the early 21st century. The future of the decades-long effort to prevent the further spread of weapons of mass destruction is at a crossroads today. If international nonproliferation efforts are to be successful, an integrated, multi-tiered response will almost certainly be necessary. A serious, thorough, and clear-eyed examination of the range of threats, challenges, and opportunities facing the international community is a necessary first step. This Handbook, which presents the most up-to-date analysis and policy recommendations on these critical issues by recognized, leading scholars in the field, intends to provide such an examination. The volume is divided into three major parts: Part I presents detailed threat assessments

of proliferation risks across the globe, including specific regions and countries. Part II explains the various tools developed by the international community to address these proliferation threats. Part III addresses the proliferation risks and political challenges arising from nuclear energy production, including potential proliferation by aspiring states and nonstate groups. This Handbook will be of great interest to students and practitioners of nuclear proliferation, arms control, global governance, diplomacy, and global security and IR general.

UPPSC (Uttar Pradesh Public Service Commission) UP Combined State/Upper Subordinate Services General Studies (Paper-I) Preliminary Examination Solved Papers 2021–2005 Dr. Ranjit Kumar Singh, IAS (AIR-49) The presented book UPPSC (Uttar Pradesh Public Service Commission) General Studies (Paper-I) Preliminary Examination Solved Papers is a compilation of previous years' examination question papers from 2021 to 2005. Aspirants can find all these question papers easily where most of the syllabus is covered in the form of MCQs. The solutions are supplemented lucidly with analytical explanations to promote a clearer understanding to various levels of questions depending upon the complexity. This book seeks to make the aspirants fully aware about the developments in the papers throughout these years along with preparing them to face the upcoming examination with confidence.

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Practical Sports Coaching Christine Nash 2014-11-24 Practical Sports Coaching is a thorough and engaging guide for all sports coaching students and practitioners. Drawing on real-life case studies and examples, the book is designed to develop practical coaching skills and provides readers with the methods and tools they need to become an expert coach. Structured around all facets of the coaching process, the text comprehensively covers topics such as: preparation for coaching mentoring the philosophy of coaching direct intervention coaching methods the use of modern technology. The book's practical approach allows the reader to consider common challenges faced by coaches, suggesting solutions to performance concerns and preparing students for the realities of professional sports coaching. A companion website containing presentation slides and useful weblinks makes the book a complete resource for students and lecturers alike. Practical Sports Coaching helps to bridge the gap between theory and practical coaching skills, and is an essential

text for coaching students looking to deepen their understanding of sports coaching and experienced coaches developing their own practical skills.

The Physics of Computing Marilyn Wolf 2016-10-16 The Physics of Computing gives a foundational view of the physical principles underlying computers. Performance, power, thermal behavior, and reliability are all harder and harder to achieve as transistors shrink to nanometer scales. This book describes the physics of computing at all levels of abstraction from single gates to complete computer systems. It can be used as a course for juniors or seniors in computer engineering and electrical engineering, and can also be used to teach students in other scientific disciplines important concepts in computing. For electrical engineering, the book provides the fundamentals of computing that link core concepts to computing. For computer science, it provides foundations of key challenges such as power consumption, performance, and thermal. The book can also be used as a technical reference by professionals. Links fundamental physics to the key challenges in computer design, including memory wall, power wall, reliability Provides all of the background necessary to understand the physical underpinnings of key computing concepts Covers all the major physical phenomena in computing from transistors to systems, including logic, interconnect, memory, clocking, I/O

Drones and the Future of Air Warfare Michael P. Kreuzer 2016-05-26 This book examines the evolution of airpower and specifically the growth and proliferation of Remotely Piloted Aircraft (RPAs). While most existing literature examines either the law or ethics of RPAs, and some newer scholarship looks to the battlefield effectiveness (the gains from strikes versus the potential for 'blowback, etc.), this work investigates it from a broader military perspective. It examines the strategy for employment of RPAs across the spectrum of warfare, the potential deterrent value of RPAs in some circumstances, and the resulting ability of RPAs to fundamentally shift the character of when and how wars are fought. The central aim of this book is to evaluate the role of 'drones' in warfare to date, and make basic projections on how states will adopt RPAs and UCAVs in the future. At the core is the goal of answering a broad, underlying research question: How will the RPA innovation impact military strategy and international security? This book will be of much interest to students of airpower, drone warfare, military and strategic studies, security studies and IR.