Heinemann Media Second Edition

This book presents the first detailed biography of George Placzek -- an outstanding physicist, a participant in the Manhattan Project who stood at the very inception of nuclear physics and the subsequent development of the nuclear bomb in the course of the WWII. In the 1930s, George Placzek was known as an adventurous person with a sharp sense of humor, a tireless generator of novel physics ideas which he generously shared with his colleagues. Born in Brno (now Czech Republic) into a wealthy Jewish family, he lost all his relatives to Holocaust, casting a tragic shadow on his life. Placzek's scientific career began in the late 1920s when the quantum revolution was almost over, but nuclear physics was still at its infancy. He established personal and scientific relations with the creators of quantum mechanics, such as Heisenberg in Leipzig and Niels Bohr in Copenhagen. In Rome, he worked with Fermi, and in Copenhagen he became a part of Bohr's nuclear physics team which dominated nuclear theory at that time. The scope of Placzek's pilgrimage around world physics centers in the 1930s was unique among his colleagues. In January 1939, George Placzek managed to emigrate from Europe to the US, and became a part of the British Mission within the Manhattan Project. His physical insights were instrumental in advancing from the basic discoveries on nuclear chain reactions to the Trinity experiment, Hiroshima and Nagasaki. This book is a unique compilation of a large number of previously unknown and unpublished documents from private and university archives, police reports, etc. Placzek's correspondence with the leadership of the Hebrew University in 1934, the 1937 NKVD interrogation files of Konrad Weisselberg, recollections of Ella Andriesse as well as the Zurich Police report of 1956 detailing the circumstances of Placzek's death in a Zurich hotel are illuminating as they shed light on poorly known pages of his life.

Investigations: 150 Things You Should Know, Second Edition, explores the essential tips and techniques for security investigations, providing a useful reference for those at any stage of their security career. This practical guide covers the legal guidelines that all investigators must follow. Through anecdotes, case studies and documented procedures, the authors present the most complete collection of investigative information available. Readers in the security and law enforcement fields will find this book easy to use and understand when seeking explanations about a wide variety of investigative topics, including constitutional law, documentary evidence, surveillance equipment, interviewing, interrogating and reporting. Offers a comprehensive overview of security investigations Provides simple practical tips for busy security professionals Blends theory and practice with specific focus on today’s global business and social environment Provides legal guidelines that must be followed for proper private security investigations

An accessible student-oriented approach to radiowave propagation Propagation-the process whereby a signal is conveyed between transmitter and receiver-has a profound influence on communication systems design. Radiowave Propagation provides an overview of the physical mechanisms that govern electromagnetic wave propagation in the Earth's troposphere and ionosphere. Developed in conjunction with a graduate-level wave propagation course at The Ohio State University, this text offers a balance of physical and empirical models to provide basic physical insight as well as practical methods for system design. Beginning with discussions of propagation media properties, plane waves, and antenna and system concepts, successive chapters consider the most important wave propagation mechanisms for frequencies ranging from LF up to the millimeter wave range, including: Direct line-of-sight propagation through the atmosphere Rain attenuation The basic theory of reflection and refraction at material interfaces and in the Earth's atmosphere Reflection, refraction, and diffraction analysis in microwave link design for a specified terrain profile Empirical path loss models for point-to-point ground links Statistical fading models Standard techniques for prediction of ground wave propagation Ionospheric propagation, with emphasis on the skywave mechanism at MF and HF and on ionospheric perturbations for Earth-space links at VHF and higher frequencies A survey of other propagation mechanisms, including tropospheric scatter, meteor scatter, and propagation effects on GPS systems Radiowave Propagation incorporates fundamental materials to help senior undergraduate and graduate engineering students review and strengthen electromagnetic physics skills as well as the most current empirical methods recommended by the International Telecommunication Union. This book can also serve as a valuable teaching and reference text for engineers working with wireless communication, radar, or remote sensing systems.

Rhetoric Online is a systematic examination of the forms and nature of Web-based public discourse in the fields of social activism, political campaigning, and other venues where rhetorical discourses are addressed to public audiences. Warnick develops and adapts existing rhetorical theories to the study of Web-based persuasive discourse in the public sphere.

While many books on advertising are written by people whose experience of the industry is either limited or else rather distant in time, Excellence in Advertising, has been created by a group of people who are directly involved in the business currently and are at the very top of their profession. The first edition of this book, published in 1997, proved to be a huge success both in the UK and internationally. This new edition is substantially updated and enlarged - with new authors added and new subjects covered. The cast list of authors, headed by Leslie Butterfield as editor and contributor, reads like a veritable Who's Who of advertising and marketing: John Bartle, Steve Henry, Professor Peter Doyle, Mike Sommers and now also Richard Hytner, Tim Broadbent, Tim Pile and others. Together their contributions present an authoritative view on what constitutes best practice in a wide range of key areas that are the context for the creation of effective advertising: Building successful brands Strategy development The analysis and interpretation of qualitative research Creative briefing Media strategy AND NEW IN THIS EDITION: Managing relationships Evaluating advertising Loyalty Shareholder value Total communication strategy Combining state-of-the-art thinking and practical advice, this book will be of value to those who use advertising to build brands, those who study advertising and its role and to those actively engaged in producing excellence in advertising on a daily basis. Leslie Butterfield is Chairman of Partners BDDH, the agency he founded in 1987. He is one of the UK advertising industry's most respected strategists, and a regular contributor to advertising conferences and publications. He was Chairman of the IPA's Training and Development Committee from 1989 to 1997 and is now a Council Member and Fellow of the IPA.

Offers ideas for creating English classrooms where students can be nourished intellectually, emotionally, and morally by literature, and includes young adult literature pairings with classic texts, tips for motivating reluctant readers, a study guide, and guidelines for curriculum development.

A graduate-level book about the propagation of electromagnetic fields and their interaction with condensed matter.

Heinemann Media second edition is written for the revised VCE Media Study Design commencing 2012 and incorporates the requirements of unit 1-4 in one convenient student book.

This is the key publication for professionals and students in the metallurgy and foundry field. Fully revised and expanded, Castings Second Edition covers the latest developments in the understanding of the role of the liquid metal in controlling the properties of cast materials, and indeed, of all metallic materials that have started in the cast form. Practising foundry engineers, designers, and students will find the revealing insights into the behaviour of castings essential in developing their inderstanding and practice. John Campbell OBE is a leading international figure in the castings industry, with over four decades of experience. He is the originator of the Cosworth Casting Process, the pre-

eminent production process for automobile cylinder heads and blocks. He is also co-inventor of both the Baxi Casting Process (now owned by Alcoa) developed in the UK, and the newly emerging Alotech Casting Process in the USA. He is Professor of Casting Technology at the University of Birmingham, UK. New edition of this internationally respected reference and textbook for engineers and students Develops understanding of the concepts and practice of casting operations Castings' is the key work on castings technology and process metallurgy, and an essential resource on contemporary developments and thinking on the new metallurgy of cast alloys Revised and updated throughout, with new material on subjects including surface turbulence, the new theory of entrainment defects including folded film defects, plus the latest concepts of alloy theory

Design and Evaluation of Physical Security Systems, Second Edition, includes updated references to security expectations and changes since 9/11. The threat chapter includes references to new threat capabilities in Weapons of Mass Destruction, and a new figure on hate crime groups in the US. All the technology chapters have been reviewed and updated to include technology in use since 2001, when the first edition was published. Garcia has also added a new chapter that shows how the methodology described in the book is applied in transportation systems. College faculty who have adopted this text have suggested improvements and these have been incorporated as well. This second edition also includes some references to the author's recent book on Vulnerability Assessment, to link the two volumes at a high level. New chapter on transportation systems Extensively updated chapter on threat definition Major changes to response chapter

Confronted daily with decisions on how to present their stories, what to write and what not to write, journalists and the media are frequently accused of sensationalizing, of choosing to report the bad news, and of misquoting those they interview. In this substantially updated edition of Morals and the Media, Nick Russell addresses many of the concerns the public has about the media as he examines why the media behave the way they do. He also discusses how values have been developed and applied and suggests value systems that can be used to judge special situations.

This is an introduction to the quantum theory of light and its broad implications and applications. A significant part of the book covers material with direct relevance to current basic and applied research, such as quantum fluctuations and their role in laser physics and the theory of forces between macroscopic bodies (Casimir effects). The book includes numerous historical sidelights throughout, and approximately seventy exercises. The book provides detailed expositions of the theory with emphasis on general physical principles. Foundational topics in classical and quantum electrodynamics are addressed in the first half of the book, including the semiclassical theory of atom-field interactions, the quantization of the electromagnetic field in dispersive and dissipative media, uncertainty relations, and spontaneous emission. The second half begins with a chapter on the Jaynes-Cummings model, dressed states, and some distinctly quantum-mechanical features of atom-field interactions, and includes discussion of entanglement, the no-cloning theorem, von Neumann's proof concerning hidden variable theories, Bell's theorem, and tests of Bell inequalities. The last two chapters focus on quantum fluctuations and fluctuation-dissipation relations, beginning with Brownian motion, the Fokker-Planck equation, and classical and quantum Langevin equations. Detailed calculations are presented for the laser linewidth, spontaneous emission noise, photon statistics of linear amplifiers and attenuators, and other phenomena. Van der Waals interactions, Casimir forces, the Lifshitz theory of molecular forces between macroscopic media, and the many-body theory of such forces based on dyadic Green functions are analyzed from the perspective of Langevin noise, vacuum field fluctuations, and zero-point energy.

This book provides an in-depth exploration of the topics that are currently relevant in K–12 curricula, including the school librarian's role in dealing with these issues, collaborating with teachers, and connecting to classrooms. • Includes a form that can be used by school librarians and teachers in collaborative projects • Provides four suggested activities for school librarians or preservice librarians in all ten chapters, totaling forty ideas • A bibliography provides recommended resources in three chapters: students with autism, highly mobile students, and LGBT students • An appendix supplies an extensive list of suggested readings and websites for each chapter

Pinch analysis and related techniques are the key to design of inherently energy-efficient plants. This book shows engineers how to understand and optimize energy use in their processes, whether large or small. Energy savings go straight to the bottom line as increased profit, as well as reducing emissions. This is the key guide to process integration for both experienced and newly qualified engineers, as well as academics and students. It begins with an introduction to the main concepts of pinch analysis, the calculation of energy targets for a given process, the pinch temperature and the golden rules of pinch-based design to meet energy targets. The book shows how to extract the stream data necessary for a pinch analysis and describes the targeting process in depth. Other essential details include the design of heat exchanger networks, hot and cold utility systems, CHP (combined heat and power), refrigeration and optimization of system operating conditions. Many tips and techniques for practical application are covered, supported by several detailed case studies and other examples covering a wide range of industries, including buildings and other non-process situations. The only dedicated pinch analysis and process integration guide, fully revised and expanded supported by free downloadable energy targeting software The perfect guide and reference for chemical process, food and biochemical engineers, plant engineers and professionals concerned with energy optimisation, including building designers Covers the practical analysis of both new and existing systems, with ful details of industrial applications and case studies

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The Handbook of Nonwoven Filter Media, Second Edition provides readers with a fundamental understanding of nonwoven filter media. It is one of the few books dealing exclusively with the subject, and is primarily intended as a reference for people in the nonwovens industry (industry and academic researchers, technical, marketing , and quality

control personnel) and universities offering courses in filtration theory and practice and nonwovens technology. The book includes applications for gas, liquid, and engine filtration, and identifies the types of filter media used in these applications. The various separation technologies that can be achieved with nonwoven filter media are revealed and discussed. Theoretical presentation is based on flow through porous media, and is developed around a nonwovens or engineered fabrics orientation. Presents the latest information on legislative, regulatory, environmental and sustainability issues affecting the nonwovens and filtration industries Includes a comprehensive discussion of Computational Flow Dynamics (CFD) by Dr. George Chase, University of Akron, USA Includes the latest Global and North American marketing statistics for filters and filter media prepared by Brad Kalil of INDA.

Television and Common Knowledge considers how television is and can be a vehicle for well-informed citizenship in a fragmented modern society. Grouped into thematic sections, contributors first examine how common knowledge is assumed and produced across the huge social, cultural and geographical gulfs that characterise modern society, and investigate the role of television as the primary medium for the production and dissemination of knowledge. Later contributions concentrate on specific tv genres such as news, documentary, political discussions, and popular science programmes, considering the changing ways in which they attempt to inform audiences, and how they are actually made meaningful by viewers.

"With hit books that support strategic reading through conferring, small groups, and assessment, Jen Serravallo gets emails almost daily asking, 'Isn't there a book of the strategies themselves?' Now there is. 'Strategies make the often invisible work of reading actionable and visible, ' Jen writes. In The Reading Strategies Book, she collects 300 strategies to share with readers in support of thirteen goals -- everything from fluency to literary analysis. Each strategy is cross-linked to skills, genres, and Fountas & Pinnell reading levels to give you just-right teaching, just in time. With Jen's help you'll develop goals for every reader, give students step-by-step strategies for skilled reading, guide readers with prompts aligned to the strategies, adjust instruction to meet individual needs with Jen's Teaching Tips, craft demonstrations and explanations with her Lesson Language, and learn more with Hat Tips to the work of influential teacher-authors. Whether you use readers workshop, Daily 5/CAFE, guided reading, balanced reading, a core reading program, whole-class novels, or any other approach, The Reading Strategies Book will complement and extend your teaching. Rely on it to plan and implement goal-directed, differentiated instruction for individuals, small groups, and whole classes. 'We offer strategies to readers to put the work in doable terms for those who are still practicing, ' writes Jen Serravallo. 'The goal is not that they can do the steps of the strategy but that they become more comfortable and competent with a new skill.' With The Reading Strategies Book, you'll have ways to help your readers make progress every day"--Publisher.

School Security: How to Build and Strengthen a School Safety Program, Second Edition emphasizes a proactive rather than reactive approach to school security. Readers are introduced to basic loss prevention and safety concepts, including how to communicate safety information to students and staff, how to raise security awareness, and how to prepare for emergencies. The book discusses how to positively influence student behavior, lead staff training programs, and write sound security policies. This book isn't just for security professionals and will help educators and school administrators without formal security training effectively address school risk. As school safety challenges continue to evolve with new daily stories surrounding security lapses, lock-downs, or violent acts taking place, this thoroughly revised edition will help explain how to make educational institutions a safer place to learn. Includes new tabletop exercises for managing emergencies Contains coverage of the new risks commonly facing schools today, from access control to social media Presents updated School Security Resources Serves as a comprehensive guide for building an effective security program at little or no cost Covers fundamental crime prevention concepts Takes a holistic approach to school security rather than focusing on a particular threat or event

* Useful to engineers in any industry * Extensive references provided throughout * Comprehensive range of topics covered * Written with practical situations in mind A plant engineer is responsible for a wide range of industrial activities, and may work in any industry. The breadth of knowledge required by such professionals is so wide that previous books addressing plant engineering have either been limited to certain subjects or cursory in their treatment of topics. The Plant Engineer's Reference Book is the first volume to offer complete coverage of subjects of interest to the plant engineer. This reference work provides a primary source of information for the plant engineer. Subjects include selection of a suitable site for a factory and provision of basic facilities (including boilers, electrical systems, water, HVAC systems, pumping systems and floors and finishes). Detailed chapters deal with basic issues such as lubrication, corrosion, energy conservation, maintenance and materials handling as well as environmental considerations, insurance matters and financial concerns. The authors chosen to contribute to the book are experts in their various fields. The Editor has experience of a wide range of operations in the UK, other European countries, the USA, and elsewhere in the world. Produced with the backing of the Institution of Plant Engineers, this work is the primary source of information for plant engineers in any industry worldwide.

"A 22-volume, highly illustrated, A-Z general encyclopedia for all ages, featuring sections on how to use World Book, other research aids, pronunciation key, a student guide to better writing, speaking, and research skills, and comprehensive index"--

Communications are key to the success of disaster mitigation, preparedness, response, and recovery. Accurate information disseminated to the general public, to elected officials and community leaders, as well as to the media, reduces risk, saves lives and property, and speeds recovery. Disaster Communications in a Changing Media World, Second Edition, provides valuable information for navigating these priorities in the age of evolving media. The emergence of new media like the Internet, email, blogs, text messaging, cell

phone photos, and the increasing influence of first informers are redefining the roles of government and media. The tools and rules of communications are evolving, and disaster communications must also evolve to accommodate these changes and exploit the opportunities they provide. Disaster Communications in a Changing Media World, Second Edition, illuminates the path to effective disaster communication, including the need for transparency, increased accessibility, trustworthiness and reliability, and partnerships with the media. Includes case studies from recent disasters including Hurricane Sandy, the 2011 tsunami in Japan, and the Boston Marathon bombings Demonstrates how to use blogs, text messages, and cell phone cameras, as well as government channels and traditional media, to communicate during a crisis Examines current social media programs conducted by FEMA, the American Red Cross, state and local emergency managers, and the private sector Updated information in each chapter, especially on how social media has emerged as a force in disaster communications

The use of membranes is increasing throughout industry, and particularly the water industry.The municipal water industry, which is concerned with the provision of clean drinking water to the population, is a big user and developer of membrane technology which helps it to provide water free of pathogens, chemicals, odours and unwanted tastes. Municipal authorities also have to process sewage and waste water, and membranes are used extensively in these processes. The MBR Book covers all important aspects of Membrane BioReactors in water and waste water treatment, from the fundamentals of the processes via design principles to MBR technologies. Industrial case studies help interpret actual results and give pointers for best practice. Useful appendices provide data on commercial membranes and international membrane organisations. * Major growth area in the water industries * Internationally-known author * Principles and practice, backed by case studies

Several significant additions have been made to the second edition, including the operator method of calculating the bremsstrahlung cross-section, the calcualtion of the probabilities of photon-induced pair production and photon decay in a magnetic field, the asymptotic form of the scattering amplitudes at high energies, inelastic scattering of electrons by hadrons, and the transformation of electron-positron pairs into hadrons.

This book discusses the properties of fibres used in manufacturing technical textiles, highlighting the importance of material selection in terms of cost, end-user requirements and properties. It also discusses the classification of technical textiles, and describes the details of each category, such as the properties, applications, advantages and drawbacks. As such, it is a valuable resource for all those interested in advanced textiles.

A Concise Handbook of Mathematics, Physics, and Engineering Sciences takes a practical approach to the basic notions, formulas, equations, problems, theorems, methods, and laws that most frequently occur in scientific and engineering applications and university education. The authors pay special attention to issues that many engineers and students

This volume is a valuable reference work for the student and the practising engineer in the chemical, pharmaceutical, minerals, food, plastics, paper and metallurgical industries. The second edition of this successful text has been thoroughly rewritten and updated. Based on the long running post-experience course produced by the University of Bradford, in association with the Institution of Chemical Engineers, it covers all aspects of mixing, from fundamentals through to design procedures in single and multi-phase systems. Experts from both industry and academia have contributed to this work giving both a theoretical practical approach. It covers dry and wet powders, single and two-phase liquids, solid/liquid and gas/liquid systems. The range of mixers available for such diverse duties is dealt with, including tumbler mixers for powders, mechanically agitated vessels, in-line continuous mixers and jet mixers. Coverage is given of the range of mixing objectives, varying from achieving product uniformity to obtaining optimum conditions for mass transfer and chemical reactions. This volume is a valuable reference work for the student and the practising engineer in the chemical, pharmaceutical, minerals, food, plastics, paper and metallurgical industries. The second edition of this successful text has been thoroughly rewritten and updated. Based on the long running post-experience course produced by the University of Bradford, in association with the Institution of Chemical Engineers, it covers all aspects of mixing, from fundamentals through to design procedures in single and multi-phase systems. Experts from both industry and academia have contributed to this work giving both a theoretical practical approach. It covers dry and wet powders, single and two-phase liquids, solid/liquid and gas/liquid systems. The range of mixers available for such diverse duties is dealt with, including tumbler mixers for powders, mechanically agitated vessels, in-line continuous mixers and jet mixers. Coverage is given of the range of mixing objectives, varying from achieving product uniformity to obtaining optimum conditions for mass transfer and chemical reactions.

The climate has changed and communities across America are living with the consequences: rapid sea level rise, multi-state wildfires, heat waves, and enduring drought. Living with Climate Change: How Communities Are Surviving and Thriving in a Changing Climate details the steps cities are taking now to protect lives and businesses, to reduce their vulnerability, and to adapt and make themselves more resilient. The authors included in this book have been directly involved in the successful design and implementation of community-based adaptation and resilience programs. In this book, they apply decades of combined experience in hazard risk reduction, climate change adaptation, and environmental protection to provide timely and practical advice on how to plan for and live with a climate that is changing faster and more erratically than predicted. The book also examines obstacles to local, state, and national action on climate change, includes case studies to illustrate smart, effective policies and practices that have already been put in place, and defines how these actions benefit the economy, the environment, and public health. Living with Climate Change provides much-needed guidance for finding and enacting solutions to immediate and future risks of climate change.

This fifth edition of the successful Promotion and Marketing for Broadcasting, Cable, and the Web, 4ed takes an important, timely look at the newest media venue, the Internet. Under its new title, Media Promotion and Marketing for Broadcast, Cable and the Internet, 5ed it takes a fresh look at the industry and the latest strategies for media promotion and marketing. The book explores the scope and goals of media production from the perspectives of network and local television, cable, Internet and radio, including public broadcasting. Topics include: goals of promotion; research in promotion; on-air, print, and Web message design; radio promotion; television network and station promotion and new campaigns; non-commercial radio and television promotion; cable marketing and promotion; research and budgeting for promotion; syndicated program marketing; global and international promotion and marketing; and online marketing and

promotion.
Nuclear Safety provides the methods and data needed to evaluate and manage the safety of nuclear facilities and related processes using risk-based safety analysis, and provides readers with the techniques to assess the consequences of radioactive releases. The book covers relevant international and regional safety criteria (US, IAEA, EUR, PUN, URD, INI). The contents deal with each of the critical components of a nuclear plant, and provide an analysis of the risks arising from a variety of sources, including earthquakes, tornadoes, external impact and human factors. It also deals with the safety of underground nuclear testing and the handling of radioactive waste. Covers all plant components and potential sources of risk including human, technical and natural factors. Brings together information on nuclear safety for which the reader would previously have to consult many different and expensive sources. Provides international design and safety criteria and an overview of regulatory regimes.
The role of the film marketer is both vital and challenging. Promotion is one of the industry’s biggest costs, with the campaign of a large film costing up to half its production budget. Box office results, however, are wildly unpredictable: relatively few films a year make a profit. These market conditions make this a unique industry and film marketing a specific and demanding skill set that requires attention early in the career of any marketing student looking to progress in the industry. This new edition of Film Marketing is a thorough update of the first textbook in film promotion. Like in the first edition, Kerrigan takes a socio-cultural, as well as a business view of film marketing and its impact, covering different approaches to promotion according to different aims and audiences internally and externally, and across the world. This book addresses all areas of film marketing from the rigorous perspective of someone with first-hand knowledge of the trade. This new edition also includes: Additional pedagogy and visual examples to reinforce key points A more international range of cases and coverage of non-Western markets to give a global overview of film marketing across the world New and expanded sections on social media, digital promotion, transmedia and crowdfunding This is the original film marketing text which no engaged film or marketing student should be without.
Flexible and practical, New Heinemann Maths enables you to organise your teaching by topics or blocked unit of work. With revised planning for the renewed Framework, this complete maths programme provides outstanding planning support, exceptional teacher resources and motivating pupil materials.
'Materials and Design' offers an accessible and systematic approach to the selection of materials and the ways in which they can be used. The book is aimed at the industrial designer who may have limited technical support.
This new edition of Profit Planning is ideal for hotel, restaurant and licensed house managers as it focuses on profit planning, the major area of finance which the general manager needs to get to grips with. The practical aspects of day-to-day profit planning are emphasized, which means that the reader can understand the approach with the minimum of theory and technical jargon. The examples and illustrations used can easily be translated into all aspects of the hospitality industry, so this book has a wide appeal. Unit managers now have high levels of finance responsibility at an early stage in their career. This reflects the growth in strongly branded and market oriented chains of pubs and restaurants which need to achieve swift returns on their investments. The financial management skills expected of unit managers are therefore growing in sophistication and this new edition takes full account of this.
The aim of the Opus scheme is to develop pupils confidence and enrich their learning with opportunities to explore rhythm, pitch, structure and texture of music through a variety of musical genres.
Heinemann Media Student BookHandbook of Nonwoven Filter MediaButterworth-Heinemann
Since it was first published in 1995, Photonic Crystals has remained the definitive text for both undergraduates and researchers on photonic band-gap materials and their use in controlling the propagation of light. This newly expanded and revised edition covers the latest developments in the field, providing the most up-to-date, concise, and comprehensive book available on these novel materials and their applications. Starting from Maxwell's equations and Fourier analysis, the authors develop the theoretical tools of photonics using principles of linear algebra and symmetry, emphasizing analogies with traditional solid-state physics and quantum theory. They then investigate the unique phenomena that take place within photonic crystals at defect sites and surfaces, from one to three dimensions. This new edition includes entirely new chapters describing important hybrid structures that use band gaps or periodicity only in some directions: periodic waveguides, photonic-crystal slabs, and photonic-crystal fibers. The authors demonstrate how the capabilities of photonic crystals to localize light can be put to work in devices such as filters and splitters. A new appendix provides an overview of computational methods for electromagnetism. Existing chapters have been considerably updated and expanded to include many new three-dimensional photonic crystals, an extensive tutorial on device design using temporal coupled-mode theory, discussions of diffraction and refraction at crystal interfaces, and more. Richly illustrated and accessibly written, Photonic Crystals is an indispensable resource for students and researchers. Extensively revised and expanded Features improved graphics throughout Includes new chapters on photonic-crystal fibers and combined index-and band-gap-guiding Provides an introduction to coupled-mode theory as a powerful tool for device design Covers many new topics, including omnidirectional reflection, anomalous refraction and diffraction, computational photonics, and much more.
"The author shows how K-5 teachers can introduce the importance, discuss, and explore social justice practices for younger students"--
Carbon Capture and Storage, Second Edition, provides a thorough, non-specialist introduction to technologies aimed at reducing greenhouse gas emissions from burning fossil fuels during power generation and other energy-intensive industrial processes, such as steelmaking. Extensively revised and updated, this second edition provides detailed coverage of key carbon dioxide capture methods along with an examination of the most promising techniques for carbon storage. The book opens with an introductory section

that provides background regarding the need to reduce greenhouse gas emissions, an overview of carbon capture and storage (CCS) technologies, and a primer in the fundamentals of power generation. The next chapters focus on key carbon capture technologies, including absorption, adsorption, and membrane-based systems, addressing their applications in both the power and non-power sectors. New for the second edition, a dedicated section on geological storage of carbon dioxide follows, with chapters addressing the relevant features, events, and processes (FEP) associated with this scenario. Non-geological storage methods such as ocean storage and storage in terrestrial ecosystems are the subject of the final group of chapters. A chapter on carbon dioxide transportation is also included. This extensively revised and expanded second edition will be a valuable resource for power plant engineers, chemical engineers, geological engineers, environmental engineers, and industrial engineers seeking a concise, yet authoritative one-volume overview of this field. Researchers, consultants, and policy makers entering this discipline also will benefit from this reference. Provides all-inclusive and authoritative coverage of the major technologies under consideration for carbon capture and storage Presents information in an approachable format, for those with a scientific or engineering background, as well as non-specialists Includes a new Part III dedicated to geological storage of carbon dioxide, covering this topic in much more depth (9 chapters compared to 1 in the first edition) Features revisions and updates to all chapters Includes new sections or expanded content on: chemical looping/calcium looping; life-cycle GHG assessment of CCS technologies; non-power industries (e.g. including pulp/paper alongside ones already covered); carbon negative technologies (e.g. BECCS); gas-fired power plants; biomass and waste co-firing; and hydrate-based capture

An Introduction to Filter Media -- Textiles -- Filter Papers and Filter Sheets -- Media for air and gas filters -- Screens and Meshes -- Porous Sheets and Tubes (excluding Membranes) -- Membranes -- Cartridges and Special Fabrications -- Loose Powders, granules and fibres -- Testing filter media.