

Nature Journal Impact Factor

Eco-efficient Construction and Building Materials reviews ways of assessing the environmental impact of construction and building materials. Part one discusses the application of life cycle assessment (LCA) methodology to building materials as well as eco-labeling. Part two includes case studies showing the application of LCA methodology to different types of building material, from cement and concrete to wood and adhesives used in building. Part three includes case studies applying LCA methodology to particular structures and components. Reviews ways of assessing the environmental impact of construction and building materials Provides a thorough overview, including strengths and shortcomings, of the life cycle assessment (LCA) and eco-labeling of eco-efficient construction and building materials Includes case studies showing the application of LCA methodology to different types of building material, from cement and concrete to wood and adhesives used in building

The enormous advances in nanomedicine and precision medicine in the past two decades necessitated this comprehensive reference, which can be relied upon by researchers, clinicians, pharmaceutical scientists, regulators, policymakers, and lawyers alike. This standalone, full-color resource broadly surveys innovative technologies and advances pertaining to nanomedicine and precision medicine. In addition, it addresses often-neglected yet crucial areas such as translational medicine, intellectual property law, ethics,

policy, FDA regulatory issues, nano-nomenclature, and artificial nano-machines—all accomplished in a user-friendly, broad yet interconnected format. The book is essential reading for the novice and the expert alike in diverse fields such as medicine, law, pharmacy, genomics, biomedical sciences, ethics, and regulatory science. The book's multidisciplinary approach will attract a global audience and serve as a valuable reference resource for industry, academia, and government.

How biases, the desire for a good narrative, reliance on citation metrics, and other problems undermine confidence in modern science. Modern science is built on experimental evidence, yet scientists are often very selective in deciding what evidence to use and tend to disagree about how to interpret it. In *The Matter of Facts*, Gareth and Rhodri Leng explore how scientists produce and use evidence. They do so to contextualize an array of problems confronting modern science that have raised concerns about its reliability: the widespread use of inappropriate statistical tests, a shortage of replication studies, and a bias in both publishing and citing “positive” results. Before these problems can be addressed meaningfully, the authors argue, we must understand what makes science work and what leads it astray. The myth of science is that scientists constantly challenge their own thinking. But in reality, all scientists are in the business of persuading other scientists of the importance of their own ideas, and they do so by combining reason with rhetoric. Often, they look for evidence that will support their ideas, not for evidence

that might contradict them; often, they present evidence in a way that makes it appear to be supportive; and often, they ignore inconvenient evidence. In a series of essays focusing on controversies, disputes, and discoveries, the authors vividly portray science as a human activity, driven by passion as well as by reason. By analyzing the fluidity of scientific concepts and the dynamic and unpredictable development of scientific fields, the authors paint a picture of modern science and the pressures it faces.

Examines current issues in journals publishing and reviews how the industry will develop over the next few years. With contributions from leading academics and industry professionals, the book provides an authoritative and balanced view of this fast-changing area. There are a variety of views surrounding the future of journals and these are covered using a range of contributors. Online access is now taken for granted - 90 per cent of journals published are now available online, an increase from 75 per cent in 2003. Looks at a fast moving and vital area for academics and publishers Contains contributions from leading international figures from universities and publishers

Consuming and Producing Research in Communication Sciences and Disorders is an exciting new textbook designed for undergraduate research methods in communication sciences and disorders (CSD) programs. It is also appropriate for first-year graduate students taking research methods courses in speech-language pathology and audiology. The text guides students in attaining the competencies required to consume,

produce, and disseminate research; and students will have the knowledge and skills that are necessary and sufficient to conduct research as is consistent with the duties of an academic professor. The text reviews what obligations an individual, professor or not, has before being permitted to do research. The emphasis is on clinically-oriented professionals who can perform the research associated with professors. Part I on Consuming Research in CSD includes academic-clinical integration of research, as well as information required for consumption of research such as research ethics, the scientific method, types of research, and how to critique a journal article and a diagnostic test. Part II on Producing Research in CSD helps guide the undergraduate student in producing a capstone project or senior thesis and the master's student in producing a graduate thesis or research project. Part II also addresses mentoring, the Institutional Review Board, and conducting academic and clinical research. Part III addresses Disseminating Research in CSD, from the traditional (presenting and publishing academic and clinical research) to the non-traditional (marketing, social media, and new technologies). Key Features: *Each chapter begins with an Introduction and Learning Objectives to set the scene and prepare the student for what is covered. *Advanced Study Questions end each chapter and allow the student to review their skills. *Boxes throughout the text highlight key points and explore topics in more depth. Disclaimer: Please note that ancillary content (such as documents, audio, and video, etc.) may not be included as published in the

original print version of this book.

This book describes the principles around which cancer research and clinical trials can be developed.

Additionally, by describing the particularities of planning and implementing cancer research in developing countries, this book provides valuable practical information for researchers in resource-rich countries who contemplate cooperating with scientists from limited-resource countries in performing research. Written and edited by leaders in the field who work in these developing countries, *Cancer Research and Clinical Trials in Developing Countries: A Practical Guide* will appeal to a wide range of researchers, students, and physicians who are engaging in cancer research and clinical trials. It focuses on methodology and statistics while structured around the needs of cancer research. It provides valuable information regarding international collaboration, funding mechanisms as well as publishing and dissemination of research findings.

Few people have changed the world like the Nobel Prize winners. Their breakthrough discoveries have revolutionised medicine, chemistry, physics and economics. *Nobel Life* consists of original interviews with twenty-four Nobel Prize winners. Each of them has a unique story to tell. They recall their eureka moments and the challenges they overcame along the way, give advice to inspire future generations and discuss what remains to be discovered. Engaging and thought-provoking, *Nobel Life* provides an insight into life behind the Nobel Prize winners. A call from Stockholm turned a group of twenty-four academics into Nobel Prize winners.

This is their call to the next generations worldwide. Often taken for granted, the sense of smell has seldom been discussed or understood. However, since the start of the 20th Century, studies in this area have grown exponentially and today there is a greater understanding of the olfactory system – at both structural and functional levels. Scientists now concern themselves with questions about the holistic nature of our sense of smell and are investigating the role of odors in interpersonal relations, in food intake processes, in the diagnosis of certain illnesses, and many other areas. The beginnings of this knowledge are as fascinating as they are abundant and numerous disciplines are involved: psychology, physiology, genetics, neuroscience, engineering, etc. This book illustrates and analyzes the current state of advances in research about the smells around us, and the way in which they influence our relationship with the world.

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An essential book to understanding whether the new miracle cure is good science or simply too good to be true American taxpayers spend \$30 billion annually funding biomedical research, but over half of these studies can't be replicated due to poor experimental design, improper methods, and sloppy statistics. Bad science doesn't just hold back medical progress, it can sign the equivalent of a death sentence for terminal patients. In *Rigor Mortis*, Richard Harris explores these urgent issues with vivid anecdotes, personal stories, and interviews with the top biomedical researchers. We need to fix our dysfunctional biomedical system -- before it's too late.

Interest in relations between knowledge, power, and space has a long tradition in a range of disciplines, but it was reinvigorated in the last two decades through critical engagement with Foucault and Gramsci. This volume focuses on relations between knowledge and power. It shows why space is fundamental in any exercise of power and explains which roles various types of knowledge play in the acquisition, support, and legitimization of power. Topics include the control and manipulation of knowledge through centers of power in historical

contexts, the geopolitics of knowledge about world politics, media control in twentieth century, cartography in modern war, the power of words, the changing face of Islamic authority, and the role of Millennialism in the United States. This book offers insights from disciplines such as geography, anthropology, scientific theology, Assyriology, and communication science.

"Perez Velazquez has written a little gem that I advise reading to anyone pursuing a scientific career, as well as for the general public interested in the sociological aspects of science. It alerts the reader about the rise of a new type of scientist, buried in bureaucracy and financial issues. In contrast to past generations, this "new scientist" is sadly left with minimal time to dedicate to creative work. It studies the consequences of this state of affairs, the problems associated with peer reviewing, the dilemma of funding innovative research, the nature of corporate academic culture and the trivialization of scientific achievement by grant agencies and universities. It also provides possible solutions for these problems. All this is magnificently exemplified and documented, including personal experiences from the author and a touch of humor illustrated in the accompanying cartoons. Despite the humor, it is a serious piece of work that would also be useful for the conscientious academic worried about the difficulties of the current research scene."

Marina Frantseva, MD, PhD Jose Luis Perez Velazquez is a Spanish biochemist/biophysicist. He has a degree in Biochemistry and a PhD in Molecular Physiology & Biophysics. His research activities are mainly in the fields of the brain-behaviour relation at a high level of description, seeking principles of biological organisation. He worked as a senior scientist at the Hospital for Sick Children in Toronto and was Professor at the University of Toronto, where he taught a graduate course on consciousness and self-awareness, which derived in part from his book *The Brain-Behaviour Continuum* (World Scientific). He also edited the book *Coordinated Activity in the Brain* (Springer), and edited special issues for *The Journal of Biological Physics*, *Frontiers in Integrative Neuroscience* and *Frontiers in Computational Neuroscience*. Currently he is a Research Scholar at the Ronin Institute, where he continues to investigate a possible global principle, a scheme that combines theoretical studies and experimental observations, aimed at conceptualizing how consciousness arises from the organization of matter.

New research and innovations in the field of science are leading to life-changing and world-altering discoveries like never before. What does the horizon of science look like? Who are the scientists that are making it happen? And, how are we to introduce these revolutions to a society in which a segment of

the population has become more and more skeptical of science? Climate change is the biggest challenge facing our nation, and scientists are working on renewable energy sources, meat alternatives, and carbon dioxide sequestration. At the same time, climate change deniers and the politicization of funding threaten their work. CRISPR, (Clustered Regularly Interspaced Short Palindromic Repeats) repurposes bacterial defense systems to edit genes, which can change the way we live, but also presents real ethical problems. Optogenetics will help neuroscientists map complicated neural circuitry deep inside the brain, shedding light on treating Alzheimer's and Parkinson's disease. Zimmer also investigates phony science ranging from questionable "health" products to the fervent anti-vaccination movement. Zimmer introduces readers to the real people making these breakthroughs. Concluding with chapters on the rise of women in STEM fields, the importance of US immigration policies to science, and new, unorthodox ways of DIY science and crowdsource funding, *The State of Science* shows where science is, where it is heading, and the scientists who are at the forefront of progress.

Labeled either as the "next industrial revolution" or as just "hype," nanoscience and nanotechnologies are controversial, touted by some as the likely engines of spectacular transformation of human societies and even human bodies,

and by others as conceptually flawed. These challenges make an encyclopedia of nanoscience and society an absolute necessity. Providing a guide to what these understandings and challenges are about, the Encyclopedia of Nanoscience and Society offers accessible descriptions of some of the key technical achievements of nanoscience along with its history and prospects. Rather than a technical primer, this encyclopedia instead focuses on the efforts of governments around the world to fund nanoscience research and to tap its potential for economic development as well as to assess how best to regulate a new technology for the environmental, occupational, and consumer health and safety issues related to the field. Contributions examine and analyze the cultural significance of nanoscience and nanotechnologies and describe some of the organizations, and their products, that promise to make nanotechnologies a critical part of the global economy. Written by noted scholars and practitioners from around the globe, these two volumes offer nearly 500 entries describing the societal aspects of nanoscience and nanotechnology. Key Themes - Art, Design, and Materials - Bionanotechnology Centers - Context - Economics and Business - Engagement and the Public - Environment and Risk - Ethics and Values - Geographies and Distribution - History and Philosophy - Integration and Interdisciplinarity - Nanotechnology Companies - Nanotechnology Organizations

Bibliometrics and altmetrics are increasingly becoming the focus of interest in the context of research evaluation. The Handbook Bibliometrics provides a comprehensive introduction to quantifying scientific output in addition to a historical derivation, individual indicators, institutions, application perspectives and data bases. Furthermore, application scenarios, training and qualification on bibliometrics and their implications are considered.

A eureka-inspiring book that will change your view of the world as you know it. In this compilation of the biggest scientific discoveries of the last decades, Pere Estupinyà clearly and thoughtfully explains to his readers the most innovative ideas sprouting from the world's top scientists' brains... How does the brain act when we are hung-over? Can we trick our body into falling in love? What's the world going to be like in thirty years? All of this, and much more, is explained in this indispensable book for science lovers and the curious-minded. In *The Brain Snatcher*, the author accesses the world's most prestigious laboratories in order to steal the knowledge of this century's heroes -scientists- and share it with his readers. Through entertaining stories, the reader gets acquainted with the hottest debates in neuroscience, cosmology, genetics, human psychology, sociology of science, and climate change. Moreover, the brain snatcher follows the flu virus through the body; steps into a brain scanner to check if it's capable of detecting his own lies; delves into the frictions between religion and creationism; asks his own hormones why he falls in love; surrenders to the Chaos theory, and sees how disastrous the brain is when it comes to making a thorough decision. He also gets to understand why his pupils dilate when he is having an orgasm; finds the origins of superstitions, analyzes why magazines like *Science* or *Nature* make more mistakes than other so-called minor magazines, discovers the reasons that can lead an endearing scientist to keep on investigating until he is 96, and goes crazy trying to figure out what things like antimatter or quantum entanglement are. A buffet of knowledge for those without a science degree, but who are curious about the whys, whats and hows of science! Your body has trillions of cells, and each one has the complexity and dynamism of a city. Your life, your thoughts, your diseases, and your health are all the function of cells.

But what do you really know about what goes on inside you? The last time most people thought about cells in any detail was probably in high school or a college general biology class. But the field of cell biology has advanced incredibly rapidly in recent decades, and a great deal of what we may have learned in high school and college is no longer accurate or particularly relevant. *The Cell: Inside the Microscopic World that Determines Our Health, Our Consciousness, and Our Future* is a fascinating story of the incredible complexity and dynamism inside the cell and of the fantastic advancements in our understanding of this microscopic world. Dr. Joshua Z. Rappoport is at the forefront of this field, and he will take you on a journey to discover: A deeper understanding of how cells work and the basic nature of life on earth. Fascinating histories of some of the key discoveries from the seventeenth century to the last decade and provocative thoughts on the current state of academic research. The knowledge required to better understand the new developments that are announced almost weekly in science and health care, such as cancer, cellular therapies, and the potential promise of stem cells. The ability to make better decisions about health and to debunk the misinformation that comes in daily via media. Using the latest scientific research, *The Cell* illustrates the diversity of cell biology and what it all means for your everyday life. The promotion and dissemination of knowledge is a crucial part of the academic community. This is accomplished through the publication of new research through both traditional and emerging venues. *Scholarly Communication and the Publish or Perish Pressures of Academia* is an authoritative reference source for the latest material on methods and available networks for the publication of contemporary academic research. Highlighting innovative writing styles, ethical considerations, and marketing avenues,

this book is ideally designed for researchers, upper-level students, scholars, professionals, and practitioners actively involved in the publication of academic research.

Why bibliometrics is useful for understanding the global dynamics of science but generate perverse effects when applied inappropriately in research evaluation and university rankings. The research evaluation market is booming. “Ranking,” “metrics,” “h-index,” and “impact factors” are reigning buzzwords. Government and research administrators want to evaluate everything—teachers, professors, training programs, universities—using quantitative indicators. Among the tools used to measure “research excellence,” bibliometrics—aggregate data on publications and citations—has become dominant. Bibliometrics is hailed as an “objective” measure of research quality, a quantitative measure more useful than “subjective” and intuitive evaluation methods such as peer review that have been used since scientific papers were first published in the seventeenth century. In this book, Yves Gingras offers a spirited argument against an unquestioning reliance on bibliometrics as an indicator of research quality. Gingras shows that bibliometric rankings have no real scientific validity, rarely measuring what they pretend to. Although the study of publication and citation patterns, at the proper scales, can yield insights on the global dynamics of science over time, ill-defined quantitative indicators often generate perverse and unintended effects on the direction of research. Moreover, abuse of bibliometrics occurs when data is manipulated to boost rankings. Gingras looks at the politics of evaluation and argues that using numbers can be a way to control scientists and diminish their autonomy in the evaluation process. Proposing precise criteria for establishing the validity of indicators at a given scale of analysis, Gingras questions why universities are so eager to let invalid indicators influence their research

strategy.

The functionalization of nanomaterials provides them with some unique properties, making the same nanomaterial amenable for various applications by simply manipulating functional components. However, functionalized nanomaterials also face some challenges, along with some encouraging new applications in the future. This book provides a detailed account of applications of the functionalization of nanomaterials. This book can serve as a reference book for scientific investigators, including doctoral and post-doctoral scholars and undergraduate and graduate students, in context with the scope of applications of functionalized nanomaterials. It also highlights recent advances, challenges, and opportunities in the application of nanomaterials. This book will provide critical and comparative data for nanotechnologists. It may also be beneficial for multidisciplinary researchers, industry personnel, journalists, policy makers, and the common public to understand the scope of functionalized nanomaterials in detail and in depth.

Features: This book covers various applications of functionalized nanomaterials. It discusses recent global research trends and future applications of functionalized nanomaterials. It highlights the need for more rigorous regulatory frameworks for the safe use of functionalized nanomaterials. It contains contributions from international experts and will be a valuable resource for researchers.

The largest interventional and monitoring studies to date worldwide give us an excellent overview of our current state of knowledge on the physiological interactions between nutrition and exercise. This wealth of evidence covers aspects like body weight, metabolism, fatty tissue, hormones, the

cardiovascular system and skeletal structures – all ultimate determinants of immunity. The book you hold in your hands is based on the findings generated by such long-term investigations. Herein, each topic is dealt with page by page in an understandable manner. The reader will find illustrations and discussions of key physiological adaptation mechanisms and the basic principles of preventive healthcare. This non-fiction work has been written to be easily comprehensible for all individuals interested in learning the salient facts about the popular subjects of health, fitness and nutrition. For this 3rd edition, the text has been revised and updated to the state of the art in science and medicine, including the addition of 11 new topics.

ARIST, published annually since 1966, is a landmark publication within the information science community. It surveys the landscape of information science and technology, providing an analytical, authoritative, and accessible overview of recent trends and significant developments. The range of topics varies considerably, reflecting the dynamism of the discipline and the diversity of theoretical and applied perspectives. While ARIST continues to cover key topics associated with classical information science (e.g., bibliometrics, information retrieval), editor Blaise Cronin is selectively expanding its footprint in an effort to connect

information science more tightly with cognate academic and professional communities.

Research in the Biomedical Sciences: Transparent and Reproducible documents the widespread concerns related to reproducibility in biomedical research and provides a best practices guide to effective and transparent hypothesis generation, experimental design, reagent standardization (including validation and authentication), statistical analysis, and data reporting. The book addresses issues in the perceived value of the existing peer review process and calls for the need for improved transparency in data reporting. It reflects new guidelines for publication that include manuscript checklists, replication/reproducibility initiatives, and the potential consequences for the biomedical research community and societal health and well-being if training, mentoring, and funding of new generations of researchers and incentives for publications are not improved. This book offers real world examples, insights, and solutions to provide a thought-provoking and timely resource for all those learning about, or engaged in, performing and supervising research across the biomedical sciences. Provides a “big picture perspective on the scope of reproducibility issues and covers initiatives that have potential as effective solutions Offers real-world research context for transparent, reproducible experimental design, execution and reporting of

biomedical research with the potential to address aspects of the translational gap in drug discovery Highlights the importance of reproducibility and the necessary changes in biomedical and pharmaceutical research training and incentives to ensure sustainability

Invaluable guidance on how scientists can communicate the societal benefits of their work to the public and funding agencies. This will help scientists submit proposals to the US National Science Foundation and other funding agencies with a 'Broader Impacts' section, as well as helping to develop successful wider outreach activities.

Nanomaterials contain some unique properties due to their nanometric size and surface functionalization. Nanomaterial functionalization also affects their compatibility to biocompatibility and toxicity behaviors. environment and living organism. This makes functionalized nanomaterials a material with huge scope and few challenges. This book provides detailed information about the nanomaterial functionalization and their application. Recent advancements, challenges and opportunities in the preparation and applications of functionalized nanomaterials are also highlighted. This book can serve as a reference book for scientific investigators, doctoral and post-doctoral scholars; undergrad and grad. This book is very useful for multidisciplinary researchers, industry personnel's, journalists, and

policy makers. Features: Covers all aspects of Nanomaterial functionalization and its applications Describes and methods of functionalized nanomaterials synthesis for different applications Discusses the challenges, recent findings, and cutting-edge global research trends on functionalization of nanomaterials and its applications It discusses the regulatory frameworks for the safe use of functionalized nanomaterials. It contains contributions from international experts from multiple disciplines.

The Yearbook addresses the overriding question: what are the effects of the 'opening up' of science to the media? Theoretical considerations and a host of empirical studies covering different configurations provide an in-depth analysis of the sciences' media connection and its repercussions on science itself. They help to form a sound judgement on this recent development.

This second edition is an intensively revised and updated version of the book MATLAB® and Design Recipes for Earth Sciences. It aims to introduce students to the typical course followed by a data analysis project in earth sciences. A project usually involves searching relevant literature, reviewing and ranking published books and journal articles, extracting relevant information from the literature in the form of text, data, or graphs, searching and processing the relevant original data using MATLAB,

and compiling and presenting the results as posters, abstracts, and oral presentations using graphics design software. The text of this book includes numerous examples on the use of internet resources, on the visualization of data with MATLAB, and on preparing scientific presentations. As with the book *MATLAB Recipes for Earth Sciences—4rd Edition* (2015), which demonstrates the use of statistical and numerical methods on earth science data, this book uses state-of-the-art software packages, including MATLAB and the Adobe Creative Suite, to process and present geoscientific information collected during the course of an earth science project. The book's supplementary electronic material (available online through the publisher's website) includes color versions of all figures, recipes with all the MATLAB commands featured in the book, the example data, exported MATLAB graphics, and screenshots of the most important steps involved in processing the graphics.

This collection of essays provides an overview of the social developments associated with the new reproductive technologies. It assesses the significance of these new technologies for the field of the sociology of technology as a whole.

"I will share my experiences of science — such as they are and as frankly as I can." With these words Professor Stephen Curry started writing about science on his blog in 2008. His aim was to demystify the business of being

a scientist working in the UK in the 21st century but the journey turned out to be much more interesting than he had ever imagined. This book contains a personal collection of his most interesting and significant blog posts. It is probably too long.

The transmission of information transcends time. Since the beginning of humanity, people have shared stories, dreams, wishes, and findings. Within a scientific context, the delivery of information is especially important.

Researchers have been sharing their ideas and building on the work of others for as long as we have studied our world. How can a researcher ensure their ideas will be shared most effectively with the next generation, though? In *How Scientists Communicate*, Alan Kelly accompanies readers through the many processes of scholarly communication within the field of science. The chapters include an analysis of modern scientific communication, an overview of the historical development of such communication, the nature and goals of a scientific research paper, as well as practical and applicable information for researchers. He explores scientific communication from various perspectives, including the writing process, stages of writing, evaluation through peer review, publication, and what happens afterwards. This exploration into scientific writing emphasizes the importance of readability and writing for the intended audience. Kelly engages with landmark historical papers, but he doesn't shy away from his own experiences and opinions. This treatise on the art of scientific communication is interesting for readers with various levels of experience, making this book a go-to resource

for anyone trying to share their ideas within the scientific community, or interested in how the outputs of science impact our world.

This edited collection examines a range of English Language Teaching (ELT) research in the Middle East and North Africa (MENA). While the MENA context has witnessed considerable change in recent years, it has so far been under-represented in ELT research at both the regional and the international level. This book aims to fill that gap by surveying the current state of the field, examining in detail a range of issues and concepts, and suggesting future directions for further research. It will be of interest to ELT researchers and practitioners in general - not just those based in MENA contexts themselves.

Putting forward an innovative approach to solving current technological problems faced by human society, this book encompasses a holistic way of perceiving the potential of natural systems. Nature has developed several materials and processes which both maintain an optimal performance and are also totally biodegradable, properties which can be used in civil engineering.

Delivering the latest research findings to building industry professionals and other practitioners, as well as containing information useful to the public, 'Biotechnologies and Biomimetics for Civil Engineering' serves as an important tool to tackle the challenges of a more sustainable construction industry and the future of buildings.

The gradual increase of population and the consequential rise in the energy demands in the recent

years have led to the overwhelming use of fossil fuels. Hydrogen has recently gained substantial interest because of its outstanding features to be used as clean energy carrier and energy vector. Moreover, hydrogen appears to be an effective alternative to tackle the issues of energy security and greenhouse gas emissions given that it is widely recognized as a clean fuel with high energy capacity. Hydrogen can be produced by various techniques such as thermochemical, hydrothermal, electrochemical, electrolytic, biological and photocatalytic methods as well as hybrid systems. *New Dimensions in Production and Utilization of Hydrogen* emphasizes on the research, development and innovations in the production and utilization of hydrogen in the industrial biorefining, hydrotreating and hydrogenation technologies, fuel cells, aerospace sector, pharmaceuticals, metallurgy, as well as bio-oil upgrading. Moreover, the supply chain analysis, lifecycle assessment, techno-economic analysis, as well as strengths and threats of global hydrogen market are covered in the book. This book provides many significant insights and scientific findings of key technologies for hydrogen production, storage and emerging applications. The book serves as a reference material for chemical and biochemical engineers, mechanical engineers, physicists, chemists, biologists, biomedical scientists and scholars working in the field of sustainable energy and materials. Discusses the efficient usage of hydrogen as standalone fuel or feedstock in downstream processing Outlines key technologies for hydrogen production and their emerging applications Includes innovative

approaches to the research and applications of hydrogen, including hydrotreating technologies, fuel cell vehicles and green fuel synthesis, the aerospace sector, pharmaceuticals, carbon dioxide hydrogenation, and bio-oils upgrading Serves as a reference for chemical, biochemical, and mechanical engineers, physicists, chemists, biologists, and biomedical scientists working in sustainable energy and materials

The overall aim of the book is to introduce students to the typical course followed by a data analysis project in earth sciences. A project usually involves searching relevant literature, reviewing and ranking published books and journal articles, extracting relevant information from the literature in the form of text, data, or graphs, searching and processing the relevant original data using MATLAB, and compiling and presenting the results as posters, abstracts, and oral presentations using graphics design software. The text of this book includes numerous examples on the use of internet resources, on the visualization of data with MATLAB, and on preparing scientific presentations. As with its sister book MATLAB Recipes for Earth Sciences—3rd Edition (2010), which demonstrates the use of statistical and numerical methods on earth science data, this book uses state-of-the-art software packages, including MATLAB and the Adobe Creative Suite, to process and present geoscientific information collected during the course of an earth science project. The book's supplementary electronic material (available online through the publisher's website) includes color versions of all figures, recipes with all the MATLAB commands featured in the

book, the example data, exported MATLAB graphics, and screenshots of the most important steps involved in processing the graphics.

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