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### CRC HANDBOOK OF CHEMISTRY AND PHYSICS, 93RD EDITION

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CRC Press Mirroring the growth and direction of science for a century, the Handbook, now in its 93rd edition, continues to be the most accessed and respected scientific reference in the world. An authoritative resource consisting tables of data, its usefulness spans every discipline. This edition includes 17 new tables in the Analytical Chemistry section, a major update of the CODATA Recommended Values of the Fundamental Physical Constants and updates to many other tables. The book puts physical formulas and mathematical tables used in labs every day within easy reach. The 93rd edition is the first edition to be available as an eBook.

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### PHYSICAL CHEMISTRY ESSENTIALS

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Springer This textbook covers the fundamentals of physical chemistry, explaining the concepts in an accessible way and guiding the readers in a step-by-step manner. The contents are broadly divided into two sections: the classical physico-chemical topics (thermodynamics, kinetics, electrochemistry, transport, and catalysis), and the fabric of matter and its interactions with radiation. Particular care has been taken in the presentation of the algebraic parts of physico-chemical concepts, so that the readers can easily follow the explanations and re-work relevant discussion and derivations with pen and paper. The book is accompanied by a rich mathematical appendix. Each chapter includes a selection of (numerical) exercises and problems, so that students can practice and apply the learned topics. An appendix with solutions allows for controlling the learning success. Carefully prepared illustrative color images make this book a great support for teaching physical chemistry to undergraduate students. This textbook mainly addresses undergraduate students in life sciences, biochemistry or engineering, offering them a comprehensive and comprehensible introduction for their studies of physical chemistry. It will also appeal to undergraduate chemistry students as an accessible introduction for their physical chemistry studies.

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### ANALYSIS AND ANALYZERS

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### VOLUME II

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CRC Press The Instrument and Automation Engineers' Handbook (IAEH) is the #1 process automation handbook in the world. Volume two of the Fifth Edition, Analysis and Analyzers, describes the measurement of such analytical properties as composition. Analysis and Analyzers is an invaluable resource that describes the availability, features, capabilities, and selection of analyzers used for determining the quality and compositions of liquid, gas, and solid products in many processing industries. It is the first time that a separate volume is devoted to analyzers in the IAEH. This is because, by converting the handbook into an international one, the coverage of analyzers has almost doubled since the last edition. Analysis and Analyzers: Discusses the advantages and disadvantages of various process analyzer designs Offers application- and method-specific guidance for choosing the best analyzer Provides tables of analyzer capabilities and other practical information at a glance Contains detailed descriptions of domestic and overseas products, their features, capabilities, and suppliers, including suppliers' web addresses Complete with 82 alphabetized chapters and a thorough index for quick access to specific information, Analysis and Analyzers is a must-have reference for instrument and automation engineers working in the chemical, oil/gas, pharmaceutical, pollution, energy, plastics, paper, wastewater, food, etc. industries. About the eBook The most important new feature of the IAEH, Fifth Edition is its availability as an eBook. The eBook provides the same content as the print edition, with the addition of thousands of web addresses so that readers can reach suppliers or reference books and articles on the hundreds of topics covered in the handbook. This feature includes a complete bidders' list that allows readers to issue their specifications for competitive bids from any or all potential product suppliers.

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### ENVIRONMENTAL CHEMISTRY

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### AN ANALYTICAL APPROACH

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John Wiley & Sons "With a focus on quantitative measurements, Environmental Chemistry provides the reader with the essential chemical principles that drive environmental processes. The author puts the state of the current environment in the context of the formation and evolution of the planet while reviewing chemical fundamentals. To prepare students for quantitative measurements, an entire chapter is devoted to measurement statistics and quantitative methods of analysis. A concise yet detailed explanation of the chemistry that underlies the atmosphere, lithosphere and hydrosphere gives students the requisite knowledge to understand issues such as ozone formation, the greenhouse effect, soil chemistry and water quality. Each chapter concludes with descriptions of the methods used in the analysis of environmentally significant chemicals. In-chapter and end-of-chapter problems train the students in analysis techniques and develop a chemically rigorous understanding of the environment. An appendix provides a detailed description of major chemical instruments students are likely to use in an undergraduate laboratory"--

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### CRC HANDBOOK OF CHEMISTRY AND PHYSICS

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CRC Handbook of Chemistry and Physics CRC Handbook of Chemistry and Physics is critical in ensuring that researchers, educators, and students have the highest quality data for chemical compounds and physical particles. The Handbook covers 390 chemistry, physics, and related subjects organized in easy-to-find, well-organized tables.

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### CLAYS IN THE MINERALS PROCESSING VALUE CHAIN

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Cambridge University Press Clays are increasingly becoming a major problem in the mining, extraction and value-adding processes for a wide range of commodity raw materials. Clays can impact negatively on virtually every unit process within the mining and minerals

processing sector, having long-term environmental implications that go well beyond the lifetime of the mining operation. This book is the first to compile, explain and evaluate the effects of clays in the mineral processing value chain, from mining to minerals processing, and finally, tailings disposal. Focusing on topics from the chemistry and rheology of clays to their detection and dissolution behaviour, this book provides comprehensive coverage of the effects on processes such as settling, preg-robing, flotation and comminution. It is an excellent reference for professional mineralogists and geologists, industrial engineers, and researchers interested in clays and clay minerals.

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#### **PARTICLE ADHESION AND REMOVAL**

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John Wiley & Sons The book provides a comprehensive and easily accessible reference source covering all important aspects of particle adhesion and removal. The core objective is to cover both fundamental and applied aspects of particle adhesion and removal with emphasis on recent developments. Among the topics to be covered include: 1. Fundamentals of surface forces in particle adhesion and removal. 2. Mechanisms of particle adhesion and removal. 3. Experimental methods (e.g. AFM, SFA, SFM, IFM, etc.) to understand particle-particle and particle-substrate interactions. 4. Mechanics of adhesion of micro- and nanoscale particles. 5. Various factors affecting particle adhesion to a variety of substrates. 6. Surface modification techniques to modulate particle adhesion. 7. Various cleaning methods (both wet & dry) for particle removal. 8. Relevance of particle adhesion in a host of technologies ranging from simple to ultra-sophisticated.

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#### **HANDBOOK OF CHEMISTRY AND PHYSICS**

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##### **A READY-REFERENCE POCKET BOOK OF CHEMICAL AND PHYSICAL DATA - SCHOLAR'S CHOICE EDITION**

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Scholar's Choice This work has been selected by scholars as being culturally important, and is part of the knowledge base of civilization as we know it. This work was reproduced from the original artifact, and remains as true to the original work as possible. Therefore, you will see the original copyright references, library stamps (as most of these works have been housed in our most important libraries around the world), and other notations in the work. This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. As a reproduction of a historical artifact, this work may contain missing or blurred pages, poor pictures, errant marks, etc. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant.

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##### **EIN BEITRAG ZUR ERHÖHUNG DER REICHWEITE EINES BATTERIEELEKTRISCHEN FAHRZEUGS DURCH PRÄDIKTIVES THERMOMANAGEMENT**

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Springer Markus Auer diskutiert Maßnahmen, die den bereits sehr guten Wirkungsgrad batterieelektrischer Fahrzeuge weiter steigern. Dabei untersucht der Autor nicht nur konventionelle Thermomanagementmaßnahmen sowie Vorkonditionierungen, sondern stattdessen das Thermomanagement zudem mit einer vorausschauenden Komponente aus. Darüber hinaus entwickelt er eine Notfallfunktion, die das Fahrziel auch dann erreichbar macht, wenn sich dieses außerhalb der momentanen Reichweite befindet. Zur Analyse der Energiebilanz wird eine Kennzahl hergeleitet, mit der die optimale Durchschnittsgeschwindigkeit für eine maximale Reichweite bestimmt werden kann.

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#### **GREEN LOGISTICS AND TRANSPORTATION**

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##### **A SUSTAINABLE SUPPLY CHAIN PERSPECTIVE**

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Springer This book identifies and furthers the state of the art in green logistics and transportation with a supply chain focus. It includes discussions on concerns and linkages across policy, corporate strategy and operations and inter-organizational relationships and practices. Separate sections are assigned to discuss issues related to greening of logistics and transportation functions, including green logistics network, green land transportation and green air and water transportation. Linking research with practice is another important feature of the book as various techniques and research methodologies are utilized to explain and analyze green logistics and transportation concepts and issues. The authors come from throughout the world from a variety of backgrounds (e.g. policy, technical, engineering, and management backgrounds) to provide solutions and insights from their regional and global perspectives to some of the world's most critical green logistics and transportation issues.

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#### **GLOBAL INNOVATION INDEX 2020**

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##### **WHO WILL FINANCE INNOVATION?**

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WIPO The Global Innovation Index 2020 provides detailed metrics about the innovation performance of 131 countries and economies around the world. Its 80 indicators explore a broad vision of innovation, including political environment, education, infrastructure and business sophistication. The 2020 edition sheds light on the state of innovation financing by investigating the evolution of financing mechanisms for entrepreneurs and other innovators, and by pointing to progress and remaining challenges - including in the context of the economic slowdown induced by the coronavirus disease (COVID-19) crisis.

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#### **CHEMICALLY BONDED PHOSPHATE CERAMICS**

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##### **TWENTY-FIRST CENTURY MATERIALS WITH DIVERSE APPLICATIONS**

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Elsevier This book brings together the latest developments in chemically bonded phosphate ceramics (CBPCs), including several novel ceramics, from US Federal Laboratories such as Argonne, Oak Ridge, and Brookhaven National Laboratories, as well as Russian and Ukrainian nuclear institutes. Coupled with further advances in their use as biomaterials, these materials have found uses in diverse fields in recent years. Applications range from advanced structural materials to corrosion and fire protection coatings, oil-well cements, stabilization and encapsulation of hazardous and radioactive waste, nuclear radiation shielding materials, and products designed for safe storage of nuclear materials. Such developments call for a single source to cover their science and applications. This book is a unique and comprehensive source to fulfil that need. In the second edition, the author covers the latest developments in nuclear waste containment and introduces new products and applications in areas such as biomedical implants, cements and coatings used in oil-well and other petrochemical applications, and flame-retardant anti-corrosion coatings. Explores the key applications of CBPCs including nuclear waste storage, oil-well cements, anticorrosion coatings and biomedical implants Demystifies the chemistry, processes and production methods of CBPCs Draws on 40 years of developments and applications in the field, including the latest developments from USA, Europe, Ukraine, Russia, China and India

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#### **CRC STANDARD MATHEMATICAL TABLES AND FORMULAE, 32ND EDITION**

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CRC Press With over 6,000 entries, CRC Standard Mathematical Tables and Formulae, 32nd Edition continues to provide essential formulas, tables, figures, and descriptions, including many diagrams, group tables, and integrals not available online. This new edition incorporates important topics that are unfamiliar to some readers, such as visual proofs and sequences, and illustrates how mathematical information is interpreted. Material is presented in a multisectional format, with each section containing a valuable collection of fundamental tabular and expository reference material. New to the 32nd Edition A new chapter on Mathematical Formulae from the Sciences that contains the most important formulae from a variety of fields, including acoustics, astrophysics, epidemiology, finance, statistical mechanics, and thermodynamics New material on contingency tables, estimators, process capability, runs test, and sample sizes New material on cellular automata, knot theory, music, quaternions, and rational trigonometry Updated and more streamlined tables Retaining the successful format of previous editions, this comprehensive handbook remains an invaluable reference for professionals and students in mathematical and scientific fields.

## **FACILITATOR'S GUIDE TO PARTICIPATORY DECISION-MAKING**

John Wiley & Sons "The best book on collaboration ever written!" —Diane Flannery, founding CEO, Juma Ventures And now this classic book is even better—much better. Completely revised and updated, the second edition is loaded with new tools and techniques. Two powerful new chapters on agenda design A full section devoted to reaching closure More than twice as many tools for handling difficult dynamics 70 brand-new pages and over 100 pages significantly improved

## **GENERATION AND APPLICATIONS OF EXTRA-TERRESTRIAL ENVIRONMENTS ON EARTH**

River Publishers This book has been prepared under the auspice of the European Low Gravity Research Association (ELGRA). The main task of ELGRA is to foster the scientific community in Europe and beyond in conducting gravity and space-related research. This publication is dedicated to the science community, and especially to the next generation of scientists and engineers interested in space research and in the means to use Earth to reproduce the space environment. ELGRA provides a comprehensive description of space conditions and the means that have been developed on Earth to perform space environmental and (micro-) gravity related research. . The book covers ground-based research instruments and environments for both life and physical sciences research. It discusses the opportunities and limitations of protocols and instruments to compensate gravity or simulate microgravity, such as clinostats, random positioning machines, levitating magnets, electric fields, vibrations, tail suspension or head down tilt, as well as centrifuges for hyper-g studies. Other space environmental conditions are addressed too, like cosmic radiation or Mars atmospheric and soil properties to be replicated and simulated on Earth. Future long duration of manned missions, personal well-being and crew interaction are major issues dealt with.

## **AIR QUALITY MANAGEMENT IN THE UNITED STATES**

National Academies Press Managing the nation's air quality is a complex undertaking, involving tens of thousands of people in regulating thousands of pollution sources. The authors identify what has worked and what has not, and they offer wide-ranging recommendations for setting future priorities, making difficult choices, and increasing innovation. This new book explores how to better integrate scientific advances and new technologies into the air quality management system. The volume reviews the three-decade history of governmental efforts toward cleaner air, discussing how air quality standards are set and results measured, the design and implementation of control strategies, regulatory processes and procedures, special issues with mobile pollution sources, and more. The book looks at efforts to spur social and behavioral changes that affect air quality, the effectiveness of market-based instruments for air quality regulation, and many other aspects of the issue. Rich in technical detail, this book will be of interest to all those engaged in air quality management: scientists, engineers, industrial managers, law makers, regulators, health officials, clean-air advocates, and concerned citizens.

## **VISIBLE LEARNING**

### **A SYNTHESIS OF OVER 800 META-ANALYSES RELATING TO ACHIEVEMENT**

Routledge This unique and ground-breaking book is the result of 15 years research and synthesises over 800 meta-analyses on the influences on achievement in school-aged students. It builds a story about the power of teachers, feedback, and a model of learning and understanding. The research involves many millions of students and represents the largest ever evidence based research into what actually works in schools to improve learning. Areas covered include the influence of the student, home, school, curricula, teacher, and teaching strategies. A model of teaching and learning is developed based on the notion of visible teaching and visible learning. A major message is that what works best for students is similar to what works best for teachers - an attention to setting challenging learning intentions, being clear about what success means, and an attention to learning strategies for developing conceptual understanding about what teachers and students know and understand. Although the current evidence based fad has turned into a debate about test scores, this book is about using evidence to build and defend a model of teaching and learning. A major contribution is a fascinating benchmark/dashboard for comparing many innovations in teaching and schools.

## **SCIENTIFIC AND TECHNICAL AEROSPACE REPORTS**

### **SOL-GEL OPTICS**

#### **PROCESSING AND APPLICATIONS**

Springer Science & Business Media Sol-Gel-Optics encompasses numerous schemes for fabricating optical materials from gels -- materials such as bulk optics, optical waveguides, doped oxides for laser and nonlinear optics, gradient refractive index (GRIN) optics, chemical sensors, environmental sensors, and 'smart' windows. Sol-Gel-Optics: Processing and Applications provides in-depth coverage of the synthesis and fabrication of these materials and discusses the optics related to microporous, amorphous, crystalline and composite materials. The reader will also find in this book detailed descriptions of new developments in silica optics, bulk optics, waveguides and thin films. Various applications to sensor and device technology are highlighted. For researchers and students looking for novel optical materials, processing methods or device ideas, Sol-Gel-Optics: Processing and Applications surveys a wide array of promising new avenues for further investigation and for innovative applications. (This book is the first in a new subseries entitled 'Electronic Materials: Science and Technology').

## **SCHAUM'S OUTLINE OF PHYSICS FOR ENGINEERING AND SCIENCE**

McGraw-Hill Professional Tough Test Questions? Missed Lectures? Not Enough Time? Fortunately, there's Schaum's. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaum's Outline gives you 788 fully solved problems Succinct review of physics topics such as motion, energy, fluids, waves, heat, and magnetic fields Support for all the major textbooks for physics for engineering and science courses Fully compatible with your classroom text, Schaum's highlights all the important facts you need to know. Use Schaum's to shorten your study time--and get your best test scores!

## **KNOVEL CRITICAL TABLES**

### **MEASUREMENT, INSTRUMENTATION, AND SENSORS HANDBOOK**

#### **SPATIAL, MECHANICAL, THERMAL, AND RADIATION MEASUREMENT**

CRC Press The Second Edition of the bestselling Measurement, Instrumentation, and Sensors Handbook brings together all aspects of the design and implementation of measurement, instrumentation, and sensors. Reflecting the current state of the art, it describes the use of instruments and techniques for performing practical measurements in engineering, physics, chemistry, and the life sciences and discusses processing systems, automatic data acquisition, reduction and analysis, operation characteristics, accuracy, errors, calibrations, and the incorporation of standards for control purposes. Organized according to measurement problem, the Spatial, Mechanical, Thermal, and Radiation Measurement volume of the Second Edition: Contains contributions from field experts, new chapters, and updates to all 96 existing chapters Covers instrumentation and measurement concepts, spatial and mechanical variables, displacement, acoustics, flow and spot velocity, radiation, wireless sensors and instrumentation, and control and human factors A concise and useful reference for engineers, scientists, academic faculty, students, designers, managers, and industry professionals involved in instrumentation and measurement research and development, Measurement, Instrumentation, and Sensors Handbook, Second Edition: Spatial, Mechanical, Thermal, and Radiation Measurement provides readers with a greater understanding of advanced applications.

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### **BIOREACTORS FOR WASTE GAS TREATMENT**

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Springer Science & Business Media Air pollution, a major concern at the end of the 20th century, still remains a significant problem to be solved today. Traditionally, industrial waste gases have primarily been treated through physical or chemical methods. The search for new, efficient, and cost-effective alternative technologies has led to the development and, more recently, the improvement of gas phase bioreactors. This book is the first single text to provide a complete, comprehensive picture of all major biological reactors suitable for solving air pollution problems. The text describes the main features and covers the major aspects, from microbiological to engineering, as well as economic aspects, of the different types of bioreactors. The book also presents an in-depth review of the subject, from fundamental bench-scale research to industrial field applications related to the operation of full-scale systems successfully treating polluted air in Europe and the United States. Material dedicated to more conventional non-biological technologies has also been included, to provide a complete overview of the different alternative treatment processes. Audience: The different chapters have been written by international experts, as a result of a fruitful collaboration between European and American scientists and engineers. The resulting text is a high quality, valuable reference tool for a variety of readers, including graduate and postgraduate students, researchers, professors, engineers, and those professionals who are interested in environmental engineering and, more specifically, in innovative air pollution control technologies.

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### **REGIONAL DEVELOPMENT BANKS IN THE WORLD ECONOMY**

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Oxford University Press "Regional development banks (RDB) have become increasingly important in the world economy, but have also been relatively under-researched to date. This timely volume addresses this lack of attention by providing a comprehensive, comparative, and empirically informed analysis of their origins, evolution, and contemporary role in the world economy through to the second decade of the twenty-first century. The editors provide an analytical framework that includes a revised categorization of RDB by geographic operation and function. In part one, the chapter authors offer detailed analyses of the origins, evolution, and contemporary role of the major RDB, including the Inter-American Development Bank, the African Development Bank, the Asian Development Bank, the European Investment Bank, the Central American Bank, the Andean Development Corporation, the European Bank for Reconstruction and Development, and the Asian Infrastructure Investment Bank. In part two, the authors engage in comparative analyses of key topics on RDB, examining their initial design and their changing business models, their shifting role in promoting policies supported by the United States as hegemon and the private sector. The volume ends with a critical reflection on the role played by RDB to date and a strong defence of the need for these banks in an increasingly complex world economy"--Publisher's description.

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### **U.S. STANDARD ATMOSPHERE, 1976**

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### **FLOW AND THE FOUNDATIONS OF POSITIVE PSYCHOLOGY**

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### **THE COLLECTED WORKS OF MIHALY CSIKSZENTMIHALYI**

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Springer The second volume in the collected works of Mihaly Csikszentmihalyi covers about thirty years of Csikszentmihalyi's work on three main and interconnected areas of study: attention, flow and positive psychology. Describing attention as psychic energy and in the footsteps of William James, Csikszentmihalyi explores the allocation of attention, the when and where and the amount of attention humans pay to tasks and the role of attention in creating 'experiences', or ordered patterns of information. Taking into account information processing theories and attempts at quantifying people's investment, the chapters deal with such topics as time budgets and the development and use of the Experience Sampling Method of collecting data on attention in everyday life. Following the chapters on attention and reflecting Csikszentmihalyi's branching out into sociology and anthropology, there are chapters on the topic of adult play and leisure and connected to that, on flow, a concept formulated and developed by Csikszentmihalyi. Flow has become a popular concept in business and management around the world and research on the concept continues to flourish. Finally, this volume contains articles that stem from Csikszentmihalyi's connection with Martin Seligman; they deal with concepts and theories, as well as with the development and short history, of the field and the "movement" of positive psychology.

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### **FRANKENSTEIN (MODERN ENGLISH TRANSLATION)**

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Carefully edited for modern readers to allow for easier reading Obsessed with the secret of creation, Swiss scientist Dr. Victor Frankenstein cobbles together a body he's determined to bring to life. And one fateful night, he does. When the creature opens his eyes, the doctor is repulsed: his vision of perfection is, in fact, a hideous monster. Dr. Frankenstein abandons his creation, but the monster won't be ignored, setting in motion a chain of violence and terror that shadows Victor to his death. Mary Shelley's Frankenstein, a gripping story about the ethics of creation and the consequences of trauma, is one of the most influential Gothic novels in British literature. It is as relevant today as it is haunting.

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### **INDOOR ENVIRONMENT**

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### **AIRBORNE PARTICLES AND SETTLED DUST**

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John Wiley & Sons Covering the fundamentals of air-borne particles and settled dust in the indoor environment, this handy reference investigates: \* relevant definitions and terminology, \* characteristics, \* sources, \* sampling techniques and instrumentation, \* exposure assessment, \* monitoring methods. The result is a useful and comprehensive overview for chemists, physicists and biologists, postgraduate students, medical practitioners, occupational health professionals, building owners and managers, building, construction and air-conditioning engineers, architects, environmental lawyers, government and regulatory professionals.

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### **THE GLOBAL INNOVATION INDEX 2014**

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### **THE HUMAN FACTOR IN INNOVATION**

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WIPO The Global Innovation Index ranks the innovation performance of 143 countries and economies around the world, based on 81 indicators. This edition explores the role of the individuals and teams behind the innovation process. It sheds light on different aspects of human capital required to achieve innovation, including skilled labor; the intersection of human, financial and technological capital; talent retention; and the mobilization of highly educated people.

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### **CHILDREN OF LUCIFER**

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### **THE ORIGINS OF MODERN RELIGIOUS SATANISM**

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Oxford University Press Satanism adopts Satan, the Judeo-Christian representative of evil, as an object of veneration. This work explores the historical origins of this extraordinary 'antireligion.'

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### **SI CHEMICAL DATA**

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John Wiley & Sons Incorporated

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### **THE ROOTS OF BIOETHICS**

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**HEALTH, PROGRESS, TECHNOLOGY, DEATH**

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Oxford University Press Daniel Callahan's life time work in bioethics has again and again returned to the root problems of health, progress, technology, and death. How we think about each of them individually and in relation to each other will shape the way we approach and deal with the most common dilemmas of modern medicine. They are at the roots of the field.

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**FROM ASPIRIN TO VIAGRA**

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**STORIES OF THE DRUGS THAT CHANGED THE WORLD**

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Springer Nature From Aspirin to Viagra, insulin to penicillin, and vaccines to vitamin supplements, drugs have become part of our everyday lives. This staggering global industry wasn't born overnight; advancements in pharmaceutical science have been happening for a long while, over the course of decades and even centuries. This book tells the history of ten prominent substances and how they came to be common household names. It shows how the creation of such influential drugs often began with the right person at the exactly right—or wrong!—time. The chapters tell the stories of geniuses and charlatans; scholars and amateurs; advances won through hard work or pure luck; and ultimately, the handful of resounding successes that revolutionized a global industry. Beyond the pioneers of the most famous drugs in our culture, the book analyzes how our perspective on medical treatment has shifted over the decades. Modern standards for testing and administering substances have created a new set of advantages, setbacks, and stigmas, all of which are discussed herein.

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**FRANKENSTEIN**

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**ANNOTATED FOR SCIENTISTS, ENGINEERS, AND CREATORS OF ALL KINDS**

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MIT Press The original 1818 text of Mary Shelley's classic novel, with annotations and essays highlighting its scientific, ethical, and cautionary aspects. Mary Shelley's Frankenstein has endured in the popular imagination for two hundred years. Begun as a ghost story by an intellectually and socially precocious eighteen-year-old author during a cold and rainy summer on the shores of Lake Geneva, the dramatic tale of Victor Frankenstein and his stitched-together creature can be read as the ultimate parable of scientific hubris. Victor, "the modern Prometheus," tried to do what he perhaps should have left to Nature: create life. Although the novel is most often discussed in literary-historical terms—as a seminal example of romanticism or as a groundbreaking early work of science fiction—Mary Shelley was keenly aware of contemporary scientific developments and incorporated them into her story. In our era of synthetic biology, artificial intelligence, robotics, and climate engineering, this edition of Frankenstein will resonate forcefully for readers with a background or interest in science and engineering, and anyone intrigued by the fundamental questions of creativity and responsibility. This edition of Frankenstein pairs the original 1818 version of the manuscript—meticulously line-edited and amended by Charles E. Robinson, one of the world's preeminent authorities on the text—with annotations and essays by leading scholars exploring the social and ethical aspects of scientific creativity raised by this remarkable story. The result is a unique and accessible edition of one of the most thought-provoking and influential novels ever written. Essays by Elizabeth Bear, Cory Doctorow, Heather E. Douglas, Josephine Johnston, Kate MacCord, Jane Maienschein, Anne K. Mellor, Alfred Nordmann

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**PHYSICAL CHEMISTRY FOR THE CHEMICAL SCIENCES**

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Univ Science Books Following in the wake of Chang's two other best-selling physical chemistry textbooks (Physical Chemistry for the Chemical and Biological Sciences and Physical Chemistry for the Biosciences), this new title introduces laser spectroscopist Jay Thoman (Williams College) as co-author. This comprehensive new text has been extensively revised both in level and scope. Targeted to a mainstream physical chemistry course, this text features extensively revised chapters on quantum mechanics and spectroscopy, many new chapter-ending problems, and updated references, while biological topics have been largely relegated to the previous two textbooks. Other topics added include the law of corresponding states, the Joule-Thomson effect, the meaning of entropy, multiple equilibria and coupled reactions, and chemiluminescence and bioluminescence. One way to gauge the level of this new text is that students who have used it will be well prepared for their GRE exams in the subject. Careful pedagogy and clear writing throughout combine to make this an excellent choice for your physical chemistry course.

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**MAN OF HIGH FIDELITY: EDWIN HOWARD ARMSTRONG**

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**A BIOGRAPHY**

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**THE SYSTEMS MODEL OF CREATIVITY**

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**THE COLLECTED WORKS OF MIHALY CSIKSZENTMIHALYI**

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Springer This first volume of the Collected Works of Mihaly Csikszentmihalyi represents his work on Art and Creativity. Starting with his seminal 1964 study on creativity up to his 2010 publication in Newsweek, the volume spans over four decades of research and writing and clearly shows Csikszentmihalyi's own development as an academic, psychologist, researcher and person. Unconventional and unorthodox in his approach, Csikszentmihalyi chose the topic of creativity as a field of study believing it would help him be a better psychologist and advance his understanding of how to live a better life. The chapters in this volume trace the history of the study of creativity back to the days of Guilford and research on IQ and Jacob Getzels' work on creativity and intelligence. Firmly grounded in that history, yet extending it in new directions, Mihaly Csikszentmihalyi started his life-long study on artistic creativity. His first extensive study at the School of the Art Institute of Chicago enabled him to observe, test and interview fine art students drawing in a studio. The study formed the very basis of all his work on the subject and has resulted in several articles, represented in this volume, on such creativity-related concepts as problem solving versus problem finding, the personality of the artist, the influence of the social context, creativity as a social construction, developmental issues and flow. The main contribution to the topic of creativity and also the main concept explored in this volume, is the Systems Model of Creativity. Seven chapters in this volume discuss the development of this conceptual model and theory.

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**PHANTOMS OF A BELEAGUERED REPUBLIC**

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**THE DEEP STATE AND THE UNITARY EXECUTIVE**

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Oxford University Press "The American people have been enlisted in an eerie face-off, one all the more nightmarish for the way the competing specters play off one another. On one side is a Deep State conspiracy that threatens to thwart the will of the people and undercut the constitutional authority of the leader they elected. On the other side is a raw personalization of power, one that a theory of the unitary executive has gussied up and allowed to run roughshod over reason and the rule of law. These, we submit, are the phantom twins of a beleaguered republic. Each threat implicates the other in every central controversy of the Trump era. Phantoms of a Beleaguered Republic argues that the Deep State and the unitary executive are two sides of the same syndrome, that the contest they frame speaks to basic issues of governance long suppressed, and that two distinct conceptions of authority are now drawing each other out to no good effect. The worry is that, left untamed, these phantom twins will continue to pull American government apart"--

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**PIONEERS IN POLYMER SCIENCE**

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Springer Science & Business Media Because of a lack of appreciation for his efforts in developing modern polymer science, the contributions of Hermann Staudinger were disregarded for decades. There have also been delays in recognizing the contributions of other pioneers in polymer science. Hence, it is gratifying to note that Professor Seymour chaired an American Chemical Society Symposium focusing on the contributions of these pioneers and that Kluwer Academic Publishers has published the proceedings of this important

symposium. H.Mark v DEDICATION This book on Pioneers in Polymer Science is dedicated to Nobel Laureate Polymer Scientists Hermann Staudinger, Emil Fischer, Herman Mark, Paul J. Flory, Linus Pauling, Carl S. Marvel, M. Polanyi, Giulio Natta, Karl Ziegler, and Bruce Merrifield as well as to those pioneers such as J.C. Patrick, Robert Thomas, William Sparks, Maurice Huggins, Otto Bayer, Leo Baekeland, Anselm Payer, Roger Boyer, Waldo Semon, Robert Banks, J.P. Hogan, and other pioneers who, to a large degree, were responsible for the development of the world's second largest industry. ACKNOWLEDGEMENT The editor appreciates the contribution of co-authors Herman Mark, C.H. Fisher, and G. Alan Stahl who co chaired the Symposium on Pioneers in Polymer Science at the National Meeting of the American Chemical Society at Seattle, WA in 1984 and who contributed a chapter in this book. The editor is particularly grateful to Mischa Thomas who typed this manuscript.