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CRC Handbook of Organic Photochemistry and Photobiology, Third Edition - Two Volume Set CRC Press
Nick Gray is well known for both his texts and reference works on water technology, and he now brings his research and teaching expertise to this introductory student textbook. Written as a comprehensive and accessible introduction, Water Technology introduces the key concepts of hydrobiology, water treatment and supply, and wastewater treatment. Throughout the book the environmental impacts of policy and practice are assessed. The book: covers water quality and regulation, including European and US legislation and standards explains the fundamentals of hydrobiology and aquatic ecosystems deals with water quality assessment, management and treatment includes in-depth coverage of wastewater treatment and disposal is highly illustrated and includes numerous tables to help the reader Water Technology is essential reading for the environmental science or engineering student.
Water Science and Technology Bernan Press
The Science of Water: Concepts and Applications, Fourth Edition, contains a wealth of scientific information and is based on real-world experience. Building on the third edition, this text applies the latest data and research in the field and addresses water contamination as a growing problem. The book material covers a wide range of water contaminants and the cause of these contaminants and considers their impact on surface water and groundwater sources. It

also explores sustainability and the effects of human use, misuse, and reuse of freshwater and wastewater on the overall water supply. Provides Valuable Insight for Water/Wastewater Practitioners Designed to fill a gap in the available material about water, the book examines water reserve utilization and the role of policymakers involved in the decision-making process. The book provides practical knowledge that practitioners and operators must have in order to pass licensure/certification tests and keep up with relevant changes. It also updates all previous chapters, presents numerous example math problems, and provides information not covered in earlier editions. Features: Is updated throughout and adds new problems, tables, and figures Includes new coverage on persistent chemicals in drinking water and the latest techniques in converting treated wastewater to safe drinking water Provides updated information on pertinent regulations dealing with important aspects of water supply and treatment The Science of Water: Concepts and Applications, Fourth Edition, serves a varied audience—it can be utilized by water/wastewater practitioners, as well as students, lay personnel, regulators, technical experts, attorneys, business leaders, and concerned citizens.

The Science of Water

CRC Press

It is difficult to imagine anything more important to the human population than safe drinking water. Lack of clean drinking water is

still the major cause of illness and death in young children in developing countries. In more fortunate communities, where water treatment is practiced, the primary aim of water authorities is to provide water that is free from pathogens and toxins. Most countries now have water quality regulations, or guidelines, which are driving water authorities to produce purer water, with the minimum of contamination from natural or man-made origin. At the same time, consumers are demanding that chemicals added during the treatment of drinking water be kept to a minimum. As a consequence, conventional clarification methods are being challenged to comply with the new regulations and restrictions and our understanding of the mechanisms involved is being tested as never before. Interface Science in Drinking Water Treatment contains a rigorous review of water treatment practices from a fundamental viewpoint. The book includes material from leading experts in the field of water treatment, reviewing their specific fields of expertise against a background of colloid and surface chemistry, and examines each step of the journey from

source to consumer tap. It therefore permits the reader to develop a deep understanding of the complex processes taking place and of the necessary treatments which are vital for the provision of safe and palatable drinking water. The book is aimed at researchers, educators and practitioners in science and engineering, particularly those involved in water treatment and colloidal chemistry. · Covers all existing water treatment processes, approached from a fundamental surface and colloid science viewpoint · Unique collection of R&D authors, all experts in water treatment processes · Comprehensive review of water treatment with a complete list of references

Fundamentals of Environmental Chemistry, Third Edition Water Science and Technology, Fourth Edition

Water has become one of the most important issues of our time intertwined with global warming and population expansion. The management of water supplies and the conservation of water resources remains one of the most challenging yet exciting issues of our time. Water and wastewater treatment technologies are constantly evolving creating an increasingly sustainable industry that is one of the world's largest and most interdisciplinary sectors, employing chemists, microbiologists, botanists, zoologists as well as engineers,

computer specialists and a range of different management professionals. This accessible student textbook introduces the reader to the key concepts of water science and technology by explaining the fundamentals of hydrobiology, aquatic ecosystems, water treatment and supply, wastewater treatment and integrated catchment management. This fourth edition is extensively changed throughout, with new coverage of the effects of climate change, environmental assessment, sustainability and the threat to biodiversity. The text serves as a primer for both undergraduate and graduate students in either science or engineering who have an interested in freshwater biology/hydrobiology or environmental engineering. It is also useful as a unified transitional course for those who want to span the traditional areas of engineering, biology, chemistry, microbiology or business. Professionals and consultants will also find the book a useful reference.

Water Transport in Brick, Stone and Concrete CRC Press

Extensively revised and updated, Handbook of Water Analysis, Third Edition provides current analytical techniques for detecting various compounds in water samples. Maintaining the detailed and accessible style of the previous editions, this third edition demonstrates water sampling and preservation methods by enumerating different ways to measure chemical and radiological characteristics. It gives step-by-step descriptions of separation, residue determination, and clean-up techniques. See What's New in the Second Edition: Includes five new chapters covering ammonia, nitrates, nitrites, and petroleum hydrocarbons, as well as organoleptical and algal analysis methodology

Compares older methods still frequently used with recently developed protocols, and examines future trends Features a new section regarding organoleptical analysis of water acknowledging that ultimately the consumers of drinking water have the final vote over its quality with respect to odor, flavor, and color The book covers the physical, chemical, and other relevant properties of various substances found in water. It then describes the sampling, cleanup, extraction, and derivatization procedures, and concludes with detection methods. Illustrated with procedure flow charts and schematics, the text includes numerous tables categorizing methods according to type of component, origin of the water sample, parameters and procedures used, and application range. With contributions from international experts, the book guides you through the entire scientific investigation starting with a sampling strategy designed to capture the real-world situation as closely as possible, and ending with an adequate chemometrical and statistical treatment of the acquired data. By organizing data into more than 300 tables, graphs, and charts, and supplementing the text with equations and illustrations, the editors distill a wealth of knowledge into a single accessible reference.

Environmental Ion Exchange CRC Press

The Science of Water: Concepts and Applications, Third Edition contains a wealth of scientific information and is based on real-world experience. Building on the second edition, this text applies the latest data and research in the field, and addresses water contamination as a

growing problem. The book material covers a wide range of water contamin

Encyclopedia of Information Science and Technology, Third Edition Wiley

Written by an expert, using the same approach that made the previous two editions so successful, Fundamentals of Environmental Chemistry, Third Edition expands the scope of book to include the strongly emerging areas broadly described as sustainability science and technology, including green chemistry and industrial ecology. The new edition includes: Increased emphasis on the applied aspects of environmental chemistry Hot topics such as global warming and biomass energy Integration of green chemistry and sustainability concepts throughout the text More and updated questions and answers, including some that require Internet research Lecturers Pack on CD-ROM with solutions manual, PowerPoint presentations, and chapter figures available upon qualifying course adoptions The book provides a basic course in chemical science, including the fundamentals of organic chemistry and biochemistry. The author uses real-life examples from environmetnal chemistry, green chemistry, and related areas while maintaining brevity and simplicity in his explanation of concepts. Building on this foundation, the book covers environmental chemistry, broadly defined to include sustainability aspects, green chemistry, industrial ecology, and related areas. These chapters are organized around the five environmental spheres, the hydrosphere, atmosphere, geosphere, biosphere, and the anthrosphere. The last two chapters discuss analytical chemistry and its relevance to environmental chemistry. Manahan's clear, concise, and readable style makes the information accessible, regardless of the readers' level of chemistry knowledge. He demystifies the material for those who need the basics of chemical science for

their trade, profession, or study curriculum, as well as for readers who want to have an understanding of the fundamentals of sustainable chemistry in its crucial role in maintaining a livable planet.

Interface Science in Drinking Water Treatment

IWA Publishing

The unit process approach, common in the field of chemical engineering, was introduced about 1962 to the field of environmental engineering. An understanding of unit processes is the foundation for continued learning and for designing treatment systems. The time is ripe for a new textbook that delineates the role of unit process principles in environmental engineering. Suitable for a two-semester course, Water Treatment Unit Processes: Physical and Chemical provides the grounding in the underlying principles of each unit process that students need in order to link theory to practice. Bridging the gap between scientific principles and engineering practice, the book covers approaches that are common to all unit processes as well as principles that characterize each unit process. Integrating theory into algorithms for practice, Professor Hendricks emphasizes the fundamentals, using simple explanations and avoiding models that are too complex mathematically, allowing students to assimilate principles without getting sidelined by excess calculations. Applications of unit processes principles are illustrated by example problems in each chapter. Student problems are provided at the end of each chapter; the solutions manual can be downloaded from the CRC Press Web site. Excel spreadsheets are integrated into the text as tables designated by a "CD" prefix. Certain spreadsheets illustrate the idea

of "scenarios" that emphasize the idea that design solutions depend upon assumptions and the interactions between design variables. The spreadsheets can be downloaded from the CRC web site. The book has been designed so that each unit process topic is self-contained, with sidebars and examples throughout the text. Each chapter has subheadings, so that students can scan the pages and identify important topics with little effort. Problems, references, and a glossary are found at the end of each chapter. Most chapters contain downloadable Excel spreadsheets integrated into the text and appendices with additional information. Appendices at the end of the book provide useful reference material on various topics that support the text. This design allows students at different levels to easily navigate through the book and professors to assign pertinent sections in the order they prefer. The book gives your students an understanding of the broader aspects of one of the core areas of the environmental engineering curriculum and knowledge important for the design of treatment systems.

Water-Formed Deposits IGI Global

Water Science and Technology, Fourth EditionCRC Press

Handbook of Surveillance Technologies, Third Edition CRC Press

This second edition demonstrates how chemistry influences the design of water treatment plants and how it should influence the design. Historically, water treatment plants have been designed from hydraulic considerations with little regard to chemical aspects. The many chemical reactions used for removal

of pollutants from water simply cannot be forced to occur within current designs. This book re-examines this traditional approach in light of today's water quality and treatment. Will current water treatment processes be sufficient to meet future demands or will new processes have to be devised? Chemistry of Water Treatment assesses the chemical and physical efficacies of current processes to meet the demands of the Safe Drinking water Act, providing expert information to persons responsible for the production of potable water into the next century.
CRC Press
The only combined organic photochemistry and photobiology handbookAs spectroscopic, synthetic and biological tools become more and more sophisticated, photochemistry and photobiology are merging-making interdisciplinary research essential. Following in the footsteps of its bestselling predecessors, the CRC Handbook of Organic Photochemistry and Pho
Biological Wastewater Treatment CRC Press
From officially sanctioned, high-tech operations to budget spy cameras and cell phone video, this updated and expanded edition of a bestselling handbook reflects the rapid and significant growth of the surveillance industry. The Handbook of Surveillance Technologies, Third Edition is the only comprehensive work to chronicle the background and current applications of the full-range of surveillance technologies—offering the latest in surveillance and privacy issues. Cutting-Edge—updates its bestselling predecessor with discussions on social media, GPS circuits in cell phones and PDAs,

new GIS systems, Google street-viewing technology, satellite surveillance, sonar and biometric surveillance systems, and emerging developments Comprehensive—from sonar and biometric surveillance systems to satellites, it describes spy devices, legislation, and privacy issues—from their historical origins to current applications—including recent controversies and changes in the structure of the intelligence community at home and abroad Modular—chapters can be read in any order—browse as a professional reference on an as-needed basis—or use as a text forSurveillance Studies courses Using a narrative style and more than 950 illustrations, this handbook will help journalists/newscasters, privacy organizations, and civic planners grasp technical aspects while also providing professional-level information for surveillance studies, sociology and political science educators, law enforcement personnel, and forensic trainees. It includes extensive resource information for further study at the end of each chapter. Covers the full spectrum of surveillance systems, including: Radar • Sonar • RF/ID • Satellite • Ultraviolet • Infrared • Biometric • Genetic • Animal • Biochemical • Computer • Wiretapping • Audio • Cryptologic • Chemical • Biological • X-Ray • Magnetic

Fundamentals of Water Treatment Unit Processes CRC Press

Carefully designed to balance coverage of theoretical and practical principles, Fundamentals of Water Treatment Unit Processes delineates the principles that support practice, using the unit processes approach as the organizing concept. The author covers principles common to any kind of water treatment, for example, drinking water, municipal wastewater, industrial water treatment, industrial waste water treatment, and hazardous wastes. Since technologies change but principles remain constant, the book identifies strands of theory rather than discusses the latest technologies,

giving students a clear understanding of basic principles they can take forward in their studies. Reviewing the historical development of the field and highlighting key concepts for each unit process, each chapter follows a general format that consists of process description, history, theory, practice, problems, references, and a glossary. This organizational style facilitates finding sections of immediate interest without having to page through an excessive amount of material. Pedagogical Features End-of-chapter glossaries provide a ready reference and add terms pertinent to topic but beyond the scope of the chapter Sidebars sprinkled throughout the chapters present the lore and history of a topic, enlarging students' perspective Example problems emphasize tradeoffs and scenarios rather than single answers and involve spreadsheets Reference material includes several appendices and a quick-reference spreadsheet Solutions manual includes spreadsheets for problems Supporting material is available for download Understanding how the field arrived at its present state of the art places the technology in a more logical context and gives students a strong foundation in basic principles. This book does more than build technical proficiency, it adds insight and understanding to the broader aspects of water treatment unit processes.

Handbook of Pharmaceutical Granulation Technology

CRC Press

This book will contain the most important ion exchange-related design and application issues. Using tables, graphs, and conversion tables, it will explain the fundamentals, providing the knowledge to use ion exchange to reuse wastewaters, recover valuable chemicals, and recycle industrial waters. For anyone who is designing unconventional

ion exchange systems, or who needs a fundamental knowledge of ion exchange, this is the perfect working reference. This new edition will be updated throughout, add a new chapter (Selective Ion Exchange Resins), and include all new information on the removal of boron, arsenic, nitrates, ammonia, radioactivity, silica, and heavy metals from water.

Microbial Biofilms in Bioremediation and Wastewater Treatment Walter de Gruyter GmbH & Co KG

Following in the footsteps of previous highly successful and useful editions, Biological Wastewater Treatment, Third Edition presents the theoretical principles and design procedures for biochemical operations used in wastewater treatment processes. It reflects important changes and advancements in the field, such as a revised treatment of the micr

Handbook of Water and Wastewater Treatment Plant Operations, Third Edition CRC Press

Removal of Pollutants from Saline Water: Treatment Technologies provides a comprehensive understanding of technologies that are currently adopted in the treatment of pollutants present in saline water systems. It provides information on the treatment technologies for saline water systems, including seawater, brackish water, oil-produced water, and other industrial saline wastewaters. FEATURES Presents information exclusively for saline water pollutant

removal Introduces current treatment technologies and addresses why and how the techniques differ between fresh and salt water Offers an inclusive overview of physicochemical, biological, membrane, and advanced oxidation treatment technologies Features various perspectives and case studies from relevant global experts Provides a comprehensive one-stop source for the treatment of pollutants in all saline water systems Aimed at students, academicians, researchers, and practicing engineers in the fields of chemical, civil, marine, and environmental engineering who wish to be acquainted with the most recent developments in the treatment of pollutants present in saline water systems. Prof. Dr. Shaik Feroz works at Prince Mohammad Bin Fahd University, Kingdom of Saudi Arabia. He has 30 years of experience in teaching, research, and industry. He has more than 190 publications to his credit in journals and conferences of international repute. He was awarded "Best Researcher" by Caledonian College of Engineering for the year 2014. Prof. Dr. Detlef W. Bahnemann is Head of the Research Unit, Photocatalysis and Nanotechnology at Leibniz University Hannover (Germany), Director of the Research Institute "Nanocomposite Materials for Photonic Applications" at Saint Petersburg State University (Russian Federation), and Distinguished Professor at Shaanxi University of Science and Technology in

Xi'an (People's Republic of China). His research topics include photocatalysis, photoelectrochemistry, solar chemistry, and photochemistry focused on synthesis and physical-chemical properties of semiconductor and metal nanoparticles. His 500-plus publications have been cited more than 65,000 times (h-index: 100).

Lee and Gaensslen's Advances in Fingerprint Technology, Third Edition Elsevier

Previous editions of Yoghurt: Science and Technology established the text as an essential reference underpinning the production of yoghurt of consistently high quality. The book has been completely revised and updated to produce this third edition, which combines coverage of recent developments in scientific understanding with information about established methods of best practice to achieve a comprehensive treatment of the subject. General acceptance of a more liberal definition by the dairy industry of the term yoghurt has also warranted coverage in the new edition of a larger variety of gelled or viscous fermented milk products, containing a wider range of cultures. Developments in the scientific aspects of yoghurt covered in this new edition include polysaccharide production by starter culture bacteria and its effects on gel structure, acid gel formation and advances in the analysis of yoghurt in terms of its chemistry, rheology and microbiology. Significant advances in technology are also outlined, for example automation and mechanisation. There has also been progress in understanding the nutritional profile of yoghurt and details of clinical trials involving yoghurts are described. This book is a unique and essential reference to students, researchers and manufacturers in the dairy industry. Includes developments in the understanding of the biochemical changes involved in yoghurt

production Outlines significant technological advances in mechanisation and automation Discusses the nutritional value of yoghurt

Surimi and Surimi Seafood, Third Edition

CRC Press

Handbook of Water and Wastewater Treatment Plant Operations the first thorough resource manual developed exclusively for water and wastewater plant operators has been updated and expanded. An industry standard now in its third edition, this book addresses management issues and security needs, contains coverage on pharmaceuticals and personal care products (PPCPs), and includes regulatory changes. The author explains the material in layman's terms, providing real-world operating scenarios with problem-solving practice sets for each scenario. This provides readers with the ability to incorporate math with both theory and practical application. The book contains additional emphasis on operator safety, new chapters on energy conservation and sustainability, and basic science for operators. What's New in the Third Edition: Prepares operators for licensure exams Provides additional math problems and solutions to better prepare users for certification exams Updates all chapters to reflect the developments in the field Enables users to properly operate water and wastewater plants and suggests troubleshooting procedures for returning a plant to optimum operation levels A complete

compilation of water science, treatment information, process control procedures, problem-solving techniques, safety and health information, and administrative and technological trends, this text serves as a resource for professionals working in water and wastewater operations and operators preparing for wastewater licensure exams. It can also be used as a supplemental textbook for undergraduate and graduate students studying environmental science, water science, and environmental engineering.

Handbook of Water Analysis, Third Edition CRC Press

Upgrading Water Treatment Plants is a comprehensive and practical guide providing the technical detail required to upgrade existing water treatment plants to increase processing efficiency and improve overall quality without the need for substantial investment into new physical plant installation. Based on practical experience and field tested methodology, this book is an invaluable reference for civil engineers, treatment plant managers and water scientists in consultancies, water utilities, government agencies and international organisations concerned with public health and water quality.

Chemistry of Water Treatment CRC Press

Carefully crafted to provide a comprehensive overview of the chemistry of water in the environment, Water Chemistry: Green Science and Technology of Nature's Most Renewable Resource examines water issues

within the broad framework of sustainability, an issue of increasing importance as the demands of Earth's human population threaten to overwhelm the planet's carrying capacity. Renowned environmental author Stanley Manahan provides more than just basic coverage of the chemistry of water. He relates the science and technology of this amazing substance to areas essential to sustainability science, including environmental and green chemistry, industrial ecology, and green (sustainable) science and technology. The inclusion of a separate chapter that comprehensively covers energy, including renewable and emerging sources, sets this book a part. Manahan explains how the hydrosphere relates to the geosphere, atmosphere, biosphere, and anthrosphere. His approach views Planet Earth as consisting of these five mutually interacting spheres. He covers biogeochemical cycles and the essential role of water in these basic cycles of materials. He also defines environmental chemistry and green chemistry, emphasizing water's role in the practice of each. Manahan highlights the role of the anthrosphere, that part of the environment constructed and operated by humans. He underscores its overwhelming influence on the environment and its pervasive effects on the hydrosphere. He also covers the essential role that water plays in the sustainable operation of the anthrosphere and how it can be maintained in a manner

that will enable it to operate in harmony with the environment for generations to come. Written at an intermediate level, this is an appropriate text for the study of current affairs in environmental chemistry. It provides a review and grounding in basic and organic chemistry for those students who need it and also fills a niche for an aquatic chemistry book that relates the hydrosphere to the four other environmental spheres.