

Solutions Environmental Organic Chemistry

Schwarzenbach

Environmental Organic Chemistry
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Technique of Organic-chemistry
Solvent Microextraction
Hand-book of Chemistry: Organic chemistry
Chemistry of the Environment
Inland Flood Hazards
Handbook of Chemical Mass Transport in the Environment
Chemical Fate and Transport in the Environment
Fundamentals of Sustainable Chemical Science
The Proton in Chemistry
Elements of Environmental Chemistry
Aquatic Chemistry
Handbook of Environment and Waste Management
OECD Guidelines for the Testing of Chemicals / OECD Series on Testing and Assessment
Guidance Document on the Use of Multimedia Models for Estimating Overall Environmental Persistence and Long-Range Transport
Fundamentals of Environmental Chemistry, Third Edition
Soil and Groundwater Remediation
Principles of Environmental Thermodynamics and Kinetics
Biodegradation of Nitroaromatic Compounds
Treatise on Geochemistry
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Arnold Weissberger
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examines in a pedagogical way all pertinent molecular and macroscopic processes that govern the distribution and fate of organic chemicals in the environment and provides simple modeling tools to quantitatively describe these processes and their interplay in a given environmental system treats

fundamental aspects of chemistry physics and mathematical modeling as applied to environmentally relevant problems and gives a state of the art account of the field teaches the reader how to relate the structure of a given chemical to its physical chemical properties and intrinsic reactivities provides a holistic and teachable treatment of phase partitioning and transformation processes as well as a more focused and tailor made presentation of physical mathematical and modeling aspects that apply to environmental situations of concern includes a large number of questions and problems allowing teachers to explore the depth of understanding of their students or allowing individuals who use the book for self study to check their progress provides a companion website which includes solutions for all problems as well as a large compilation of physical constants and compound properties

demonstrates how the chemical structure of organic compounds influences the molecular interactions which control transfer and reaction processes in the natural environment thoroughly explains how to quantify these processes using the principles of chemistry physics and biology in a macroscopic environmental system focuses on the behavior of major synthetic organic chemicals introduced in large quantities into the environment contains more than 100 illustrations an extensive bibliography and useful reference material such as constants units and equations serves as a text for introductory courses in environmental organic chemistry as well as a source of information for the professional concerned with risk and hazard assessment of organic chemical pollutants in the environment

this book offers both a practical as well a theoretical approach to solvent microextraction sme and will help analytical chemists to evaluate sme for a given sample preparation introductory chapters overview a comparison of sme with other sample preparation methods a summary of the technical aspects and a detailed theoretical treatment of sme the book then describes the practical aspects of the technique with detailed how to chapters devoted to the preparation and analysis of atmospheric solid and liquid environmental clinical and industrial samples this text will serve as both a handy laboratory desk reference and an indispensable instructional tool

several volumes contain reports of the meetings of the cavedish society

this new edition of chemistry of the environment emphasises several major concepts proving to be essential to the practice of environmental chemistry at the beginning of the new millennium

this edited volume was originally published in 2000 and presents a comprehensive interdisciplinary review of issues related to inland flood hazards it addresses physical controls on flooding flood processes and effects and responses to flooding from the perspective of human aquatic and riparian communities individual chapter authors are recognized experts in their fields who draw on examples and case studies of inland flood hazards from around the world this volume is unusual among treatments of flood hazards in that it addresses how the non occurrence of floods in association with flow regulation and other human manipulation of river systems may create hazards for aquatic and riparian communities this book will be a valuable resource for everyone associated with inland

flood hazards professionals in government and industry and researchers and graduate students in civil engineering geography geology hydrology hydraulics and ecology

a comprehensive account of the state of the science of environmental mass transport edited by louis j thibodeaux and donald mackay renowned experts in this field the handbook of chemical mass transport in the environment covers those processes which are critically important for assessing chemical fate exposure and risk in a comprehensive and a

chemical fate and transport in the environment fourth edition explains the fundamental principles of mass transport chemical partitioning and chemical biological transformations of pollutants and naturally occurring chemicals in surface waters in the subsurface which includes soil and groundwater and in the atmosphere each of these three major environmental media is introduced by a descriptive overview followed by presentations of the governing physical chemical and biological processes the text emphasizes intuitively based mathematical models for chemical equilibria transformations and transport in the environment this book serves as a primary text for graduate and senior undergraduate courses in environmental science and engineering provides relevant scientific knowledge for students of public health and environmental policy and is a useful reference for environmental practitioners this fourth edition builds on the third edition which won a 2015 textbook excellence award texty from the text and academic authors association this updated textbook expands the discussion of global climate change presents concepts of stationarity and sustainability provides additional coverage of wastewater treatment and air pollution abatement technologies and includes information on additional anthropogenic pollutants such as plastics pfas and nanoparticles tables figures and references are updated and worked examples and practice exercises are included for each chapter illustrates the interconnections similarities and contrasts among three major environmental media surface waters the subsurface which includes soil and groundwater and the atmosphere discusses and builds upon fundamental concepts teaching students to realistically address environmental problems and preparing students for more advanced studies each chapter includes many worked examples and extensive practice exercises a solutions manual is available for instructors

written by stanley manahan fundamentals of sustainable chemical science has been carefully designed to provide a basic introduction to chemistry including organic chemistry and biochemistry for readers with little or no prior background in the subject manahan bestselling author of many environmental texts presents the material in a practical

the first edition of this book was based on the lectures which i gave at cornell university during 1958 as george fisher baker lecturer and i would like to repeat my warmest thanks to professor f a long and the other members of the department of chemistry for their kindness and helpful advice the present edition was largely written during the tenure of a visiting professorship awarded by the royal society and the israeli academy of sciences i am deeply indebted to both of these bodies and also to the hospitality of the weizmann institute of science in particular to professor david samuel and professor f s klein of the isotopes research department the subject as a whole has expanded

greatly since 1959 especially in two fields namely the direct study of fast proton transfer reactions notably by the relaxation methods pioneered by Eigen and the experimental and theoretical study of hydrogen isotope effects in order to keep the size of the book within reasonable bounds it has been necessary to adopt a selective policy and this is particularly the case in chapter 9 where I have chosen to treat a few types of reaction in some detail rather than to attempt a more complete coverage

a practical approach to environmental chemistry elements of environmental chemistry 3rd edition provides readers with the fundamentals of environmental chemistry and a toolbox for putting them into practice this is a concise accessible and hands on volume designed for students and professionals working in the chemical and environmental sciences the 3rd edition has been completely revised and rearranged the first chapter on tool skills has been expanded to include thermodynamic considerations and measurement issues the former chapter on the partitioning of organic compounds has been expanded to cover the fates of organic compounds with an emphasis on developing the reader's chemical intuition for predicting a chemical's fate based on structure the material on lead mercury pesticides PCBs dioxins and flame retardants has been expanded and combined into the last chapter and supplemented with more references to the literature the problem sets have been extended and now include over 130 problems some of which can be solved using Excel

the authoritative introduction to natural water chemistry third edition now in its updated and expanded third edition aquatic chemistry remains the classic resource on the essential concepts of natural water chemistry designed for both self study and classroom use this book builds a solid foundation in the general principles of natural water chemistry and then proceeds to a thorough treatment of more advanced topics key principles are illustrated with a wide range of quantitative models examples and problem solving methods major subjects covered include chemical thermodynamics solid solution interface and kinetics trace metals acids and bases kinetics of redox processes dissolved carbon dioxide photochemical processes atmosphere water interactions kinetics at the solid water metal ions in aqueous solution interface precipitation and dissolution particle particle interaction oxidation and reduction regulation of the chemical equilibria and microbial mediation composition of natural waters

this is a compilation of topics that are at the forefront of many technical advances and practices in air and water control these include air pollution control water pollution control water treatment wastewater treatment industrial waste treatment and small scale wastewater treatment

this guidance document concerns using multimedia models i.e. generic evaluative models that can calculate overall environmental persistence P_{ov} and potential for long range transport L_{trp} covering multiple compartments such as air water sediment and soil

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 environmental 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

an introduction to the principles and practices of soil and groundwater remediation soil and groundwater remediation offers a comprehensive and up to date review of the principles practices and concepts of sustainability of soil and groundwater remediation the book starts with an overview of the importance of groundwater resource quality contaminant sources types and the scope of soil and groundwater remediation it then provides the essential components of soil and groundwater remediation with easy to understand design equations calculations and the practical applications the book contains information on remediation basics such as subsurface chemical behaviors soil and groundwater hydrology and characterization regulations cost analysis and risk assessment the author explores various conventional and innovative remediation technologies including pump and treat soil vapor extraction bioremediation incineration thermally enhanced techniques soil washing flushing and permeable reactive barriers the book also examines the modeling of groundwater flow and contaminant transport in saturated and unsaturated zones this important book presents the current challenges of remediation practices includes up to date information about the low cost risk based sustainable remediation practices as well as institutional control and management offers a balanced mix of the principles practices and sustainable concepts in soil and groundwater remediation contains learning objectives discussions of key theories and example problems provides illustrative case studies and recent research when remediation techniques are introduced written for undergraduate seniors and graduate students in natural resource earth science environmental science engineering and environmental management soil and groundwater remediation is an authoritative guide to the principles and components of soil and groundwater remediation that is filled with worked and practice problems

environmental engineering is by its very nature interdisciplinary and it is a challenge to develop courses that will provide students with a thorough broad based curriculum that includes every aspect of the environmental engineering profession environmental engineers perform a variety of functions most critical of which are process design for waste treatment or pollution prevention fate and transport modeling green engineering and risk assessment chemical thermodynamics and chemical kinetics the two main pillars of physical chemistry are two of the many subjects that are crucial to environmental engineering based on the success of the successes of previous editions principles of environmental thermodynamics and kinetics fourth edition provides an overarching view of the applications of chemical thermodynamics and kinetics in various aspects of the field of environmental science and engineering written by experts in the field this new edition offers an improved logical progression of the text with principles and applications includes new case studies with current relevant environmental events and their relationship to thermodynamics and kinetics and adds examples and problems for the updated environmental events it also includes a comprehensive analysis of green engineering with relation applications updated appendices and an increased number of thermodynamic and kinetic data for chemical species while it is primarily intended for undergraduate students at the junior senior level the breadth and scope of this book make it a valuable resource for introductory graduate courses and a useful reference for environmental engineers

during the past five years increased awareness of environmental contamination by nitroaromatic compounds has led to a dramatic increase in research on their biodegradation the resulting discoveries have markedly extended our understanding of degradation mechanisms and pathways in bacteria and fungi furthermore this new basic knowledge promises the development of field applications of biodegradation systems for nitroaromatic compounds in may of 1994 an international symposium on the biodegradation of nitro aromatic compounds was held in las vegas nevada this symposium brought together the scientists at the frontiers of research into the biodegradation of nitro aromatic compounds the invited speakers were asked to review their area of expertise and write a critical comprehensive synthesis of their work and related work by others this book is the result of their efforts the emphasis of the reviews is on basic research in biodegradation and biotransformation therefore the reactions of nitroaromatic compounds in plants animals bacteria fungi soil and even nonbiological systems are considered the goal of the work is to provide the reader with an appreciation of the tremendous range of possibilities for metabolism of aromatic nitro compounds and the experimental approaches used to understand them this volume should be of interest to biochemists microbiologists engineers toxicologists and anyone interested in the behavior of synthetic chemicals in the environment or in living systems furthermore a variety of commercial applications can be envisioned for some of the reactions described here

this extensively updated new edition of the widely acclaimed treatise on geochemistry has increased its coverage beyond the wide range of geochemical subject areas in the first edition with five new volumes which include the history of the atmosphere geochemistry of mineral deposits archaeology and anthropology organic geochemistry and analytical geochemistry in addition the original volume

1 on meteorites comets and planets was expanded into two separate volumes dealing with meteorites and planets respectively these additions increased the number of volumes in the treatise from 9 to 15 with the index appendices volume remaining as the last volume volume 16 each of the original volumes was scrutinized by the appropriate volume editors with respect to necessary revisions as well as additions and deletions as a result 27 were republished without major changes 66 were revised and 126 new chapters were added in a many faceted field such as geochemistry explaining and understanding how one sub field relates to another is key instructors will find the complete overviews with extensive cross referencing useful additions to their course packs and students will benefit from the contextual organization of the subject matter six new volumes added and 66 updated from 1st edition the editors of this work have taken every measure to include the many suggestions received from readers and ensure comprehensiveness of coverage and added value in this 2nd edition the esteemed board of volume editors and editors in chief worked cohesively to ensure a uniform and consistent approach to the content which is an amazing accomplishment for a 15 volume work 16 volumes including index volume

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