

Chemistry In The Marketplace

This is not a history of chemistry which uses stamps instead of the usual illustrations, but a collection of short essays and comments on such chemistry as can be found on postage stamps and other philatelic items. In other words, the choice of topics is dictated by the philatelic material available, with the necessary consequence that important parts of chemical history will be missing for the simple reason that they have not found their way onto postage stamps. Thus, the reader may find detailed comments on lesser known chemists, such as Wilhelm August Lampadius who has been honoured with two stamps by the German Post Office, but hardly anything on such luminaries as Robert Bunsen, who have not been deemed worthy of a commemorative issue.

Chemicals are everywhere. Many are natural and safe, others synthetic and dangerous. Or is it the other way around? Walking through the supermarket, you might ask yourself: Should I be eating organic food? Is that anti-wrinkle cream a gimmick? Is it worth buying BPA-free plastics? This new edition of Chemistry in the Marketplace provides fresh explanations, fascinating facts and funny anecdotes about the serious science in the products we buy and the resources we use. It might even save you some money. With chapters on the chemistry found in different parts of our home, in the backyard and in the world around us, Ben Selinger and Russell Barrow explain how things work, where marketing can be deceptive and what risks you should really be concerned about. Chemistry in the Marketplace is a valuable resource for university lecturers, high school teachers and students of chemistry and chemistry related subjects and disciplines, such as biochemistry, microbiology and science in society.

The series "Handbook of Green Chemistry" edited by P. Anastas who is one leading pioneer of this field is the ultimate reference. Volume 10 of the Handbook of Green Chemistry presents important tools, databases, and laboratory approaches to support chemists in academia and industry to achieve their green chemistry goals.

This second volume in the 'The Heinemann Chemistry in Context' series is designed to meet the requirements of units three and four of the Victorian Certificate of Education and other senior chemistry courses. Develops an understanding of chemical ideas and principles from the investigation of everyday materials and processes. Includes an index, and appendices of the composition of common foods, and food additives, among other things.

Understanding the chemistry underlying sustainable energy is central to any long-term solution to meeting our future energy needs. Chemistry of Sustainable Energy presents chemistry through the lens of several sustainable energy options, demonstrating the breadth and depth of research being carried out to address issues of sustainability and the gl

A comprehensive guide to privileged structures and their application in the discovery of new drugs The use of privileged structures is a viable strategy in the discovery of new medicines at the lead optimization stages of the drug discovery process. Privileged Structures in Drug Discovery offers a comprehensive text that reviews privileged structures from the point of view of medicinal chemistry and contains the synthetic routes to these structures. In this text, the author—a noted expert in the field—includes an historical perspective on the topic, presents a practical compendium to privileged structures, and offers an informed perspective on the future direction for the field. The book describes the up-to-date and state-of-the-art methods of organic synthesis that describe the use of privileged structures that are of most interest. Chapters included information on benzodiazepines, 1,4-dihydropyridines, biaryls, 4-(hetero)arylpiperidines, spiro-piperidines, 2-aminopyrimidines, 2-aminothiazoles, 2-(hetero)arylindoles, tetrahydroisoquinolines, 2,2-dimethylbenzopyrans, hydroxamates, and bicyclic pyridines containing ring-junction nitrogen as privileged scaffolds in medicinal chemistry. Numerous, illustrative case studies document the current use of the privileged structures in the discovery of drugs. This important volume: Describes the drug compounds that have successfully made it to the marketplace and the chemistry associated with them Offers the experience from an author who has worked in many therapeutic areas of medicinal chemistry Details many of the recent developments in organic chemistry that prepare target molecules Includes a wealth of medicinal chemistry case studies that clearly illustrate the use of privileged structures Designed for use by industrial medicinal chemists and process chemists, academic organic and medicinal chemists, as well as chemistry students and faculty, Privileged Structures in Drug Discovery offers a current guide to organic synthesis methods to access the privileged structures of interest, and contains medicinal chemistry case studies that document their application.

Discusses current research and advances in the field of pharmaceutical chemistry, including drug safety, designer drugs, and the development of new drugs.

Textiles are ubiquitous materials that many of us take for granted in our everyday lives. We rely on our clothes to protect us from the environment and use them to enhance our appearance. Textiles also find applications in transport, healthcare, construction, and many other industries. The revised and updated 2nd Edition of The Chemistry of Textile Fibres highlights the trend towards the synthesis, from renewable resources, of monomers for making synthetic fibres. It contains new information on the influence of legislation and the concerns of environmental organisations on the use of chemicals in the textile industry. New sections on genetically modified cotton, anti-microbial materials and spider silk have been added as well as a new chapter covering functional fibres and fabrics. This book provides a comprehensive overview of the various types of textile fibres that are available today, ranging from natural fibres to the high-performance fibres that are very technologically advanced. Readers will gain an appreciation of why particular types of fibre are used for certain applications through understanding the chemistry behind their properties. Students following 'A' level courses or equivalent and first-year undergraduate students reading textile technology subjects at university will find this book a valuable source of information.

This volume brings together contributions by leading researchers covering a wide scope so characteristic of fluorine chemistry. It is a monograph of historical character comprising personalized accounts of progress and events in areas of particular interest. There is also much to interest and instruct chemists from other disciplines as a good proportion of the chapters

contain a considerable amount of 'hard' referenced information relating to modern organic, organoelemental and inorganic chemistry. Historians of chemistry and technology will no doubt be tempted to dip into this book, and surely whoever addresses the task of commemorating Moissan's achievement at the 150-years stage will bless us all in some measure for its existence. This book depicts how Freud's cocaine and Benjamin's hashish illustrate two critiques of modernity and two messianic emancipations through the pleasures of intoxicating discourse. Freud discovered the "libido" and "unconscious" in the industrial mimetic scheme of cocaine, whereas Benjamin found an inspiration for his critique of phantasmagoria and its variant psychoanalysis in hashish's mimesis. In addition, as part of the history of colonialism, both drugs generated two distinct colonial discourses and, consequently, two different understandings of the emancipatory powers of pleasure, the unconscious, and dreams. After all, great ideas don't liberate; they intoxicate.

Faced with the steady rise in energy costs, dwindling fossil fuel supplies, and the need to maintain a healthy environment - exploration of alternative energy sources is essential for meeting energy needs. Biological systems employ a variety of efficient ways to collect, store, use, and produce energy. By understanding the basic processes of biological models, scientists may be able to create systems that mimic biomolecules and produce energy in an efficient and cost effective manner. On May 14-15, 2007 a group of chemists, chemical engineers, and others from academia, government, and industry participated in a workshop sponsored by the Chemical Sciences Roundtable to explore how bioinspired chemistry can help solve some of the important energy issues the world faces today. The workshop featured presentations and discussions on the current energy challenges and how to address them, with emphasis on both the fundamental aspects and the robust implementation of bioinspired chemistry for energy.

A ubiquitous, largely overlooked groundwater contaminant, 1,4-dioxane escaped notice by almost everyone until the late 1990s. While some dismissed 1,4-dioxane because it was not regulated, others were concerned and required testing and remediation at sites they oversaw. Drawing years of 1,4-dioxane research into a convenient resource, *Environmental Investigation and Remediation: 1,4-Dioxane and other Solvent Stabilizers* profiles the nature of 1,4-dioxane and several dozen other solvent stabilizer compounds. The author takes an approach he calls "contaminant archeology", i.e., reviewing the history of the contaminating chemical's use in the industrial workplace at the site of release and how those uses impart chemical characteristics to the waste that affects its fate and transport properties. The book examines the uses, environmental fate, laboratory analysis, toxicology, risk assessment, and treatment of 1,4-dioxane in extensive detail. It provides case studies that document the contaminant migration, regulation, treatment, and legal aspects of 1,4-dioxane releases. It also describes the controversy over interpretation of 1,4-dioxane's toxicology and associated risk, as well as the corresponding disparity in states' regulation of 1,4-dioxane. A final chapter examines the policy implications of emerging contaminants like 1,4-dioxane, with discussion of opportunities to improve the regulatory and remedial response to this persistent contaminant in the face of toxicological uncertainty. Mobility, persistence, and treatment challenges combine to make 1,4-dioxane a particularly vexing contaminant. It is more mobile than any other contaminant you are likely to find at solvent release sites. Filled with case studies, equations, tables, figures, and citations, the book supplies a wide range of information on 1,4-dioxane. It then provides passive and active remediation strategies and treatment technologies for 1,4-dioxane in groundwater and provides you with the technical resources to help you decide which are appropriate for your site. For more information about Thomase Mohr and his book, go to <http://www.The14DioxaneBook.com>

Chemistry in the laundry (soaps, detergents, etc.) - Kitchen (butter, fats, oils, waxes) - Bedroom (cosmetics) - Garden (pesticides, etc.); Chemistry of plastics, glass, metals, fibres and fabrics, enamel, cement. ; Chemistry in the medicine cabinet (drugs, aspirin, etc.) - Dining room (food, alcohol, caffeine etc.) - Chemistry of energy (solar, nuclear, ozone) - Heavy metals and radiation.

Chemical education is essential to everybody because it deals with ideas that play major roles in personal, social, and economic decisions. This book is based on three principles: that all aspects of chemical education should be associated with research; that the development of opportunities for chemical education should be both a continuous process and be linked to research; and that the professional development of all those associated with chemical education should make extensive and diverse use of that research. It is intended for: pre-service and practising chemistry teachers and lecturers; chemistry teacher educators; chemical education researchers; the designers and managers of formal chemical curricula; informal chemical educators; authors of textbooks and curriculum support materials; practising chemists and chemical technologists. It addresses: the relation between chemistry and chemical education; curricula for chemical education; teaching and learning about chemical compounds and chemical change; the development of teachers; the development of chemical education as a field of enquiry. This is mainly done in respect of the full range of formal education contexts (schools, universities, vocational colleges) but also in respect of informal education contexts (books, science centres and museums).

Everyone can benefit from having some understanding of environmental science and the chemistry underlying issues such as global warming, ozone depletion, energy sources, air pollution, water pollution, and waste disposal. *Environmental Chemistry in Society, Second Edition* presents environmental science to the non-science student, specifically focusing on environmental chemistry, yet requiring no background in chemistry. This book is a self-contained text, offering all the information necessary for readers to understand the topics discussed. It provides a foundation in science, chemistry, and toxicology, including the laws of thermodynamics, chemical bonding, and environmental toxins. This information then allows readers to delve into environmental topics, such as energy in society, air quality, global atmospheric concerns, water quality, and solid waste management. The arrangement of the book allows instructors flexibility in how they present the material, with the crucial topics being covered first. This second edition had been updated throughout and contains the following revisions: Addition of a glossary of important terms Extensive revision of the discussion questions at the end of each chapter to require more critical thinking skills Updates to the environmental data The division of the foundational chapter on chemistry into two chapters, so each one is more palatable Coverage of fracking, the Fukushima nuclear disaster, and the 2010 Gulf oil spill The book provides a qualitative approach, presenting the chemistry of the environment in such a way that students who have little or no science background can gain understanding and appreciation of this important subject.

Two recent initiatives from the EU, namely the Bologna Process and the Lisbon Agenda are likely to have a major influence on European Higher Education. It seems unlikely that traditional

teaching approaches, which supported the elitist system of the past, will promote the mobility, widened participation and culture of 'life-long learning' that will provide the foundations for a future knowledge-based economy. There is therefore a clear need to seek new approaches to support the changes which will inevitably occur. The European Chemistry Thematic Network (ECTN) is a network of some 160 university chemistry departments from throughout the EU as well as a number of National Chemical Societies (including the RSC) which provides a discussion forum for all aspects of higher education in chemistry. This handbook is a result of one of their working groups, who identified and collated good practice with respect to innovative methods in Higher Level Chemistry Education. It provides a comprehensive overview of innovations in university chemistry teaching from a broad European perspective. The generation of this book through a European Network, with major national chemical societies and a large number of chemistry departments as members make the book unique. The wide variety of scholars who have contributed to the book, make it interesting and invaluable reading for both new and experienced chemistry lecturers throughout the EU and beyond. The book is aimed at chemistry education at universities and other higher level institutions and at all academic staff and anyone interested in the teaching of chemistry at the tertiary level. Although newly appointed teaching staff are a clear target for the book, the innovative aspects of the topics covered are likely to prove interesting to all committed chemistry lecturers.

Food Product Development presents in-depth, how to guidance to successful food product development. Drawing on the practical experience of 19 industry experts, the book presents a broad overview of practical aspects of industrial food R&D today. In addition, it details how to control the many facets of food product development and successfully integrate the work of professionals from many diverse areas.

Taking a nonmathematical approach to the material, Environmental Chemistry in Society presents the chemistry of the environment in a way accessible to students who have little or no science background. It relates the fundamentals of chemistry to contemporary environmental issues. Shows the Relevance of Chemistry in the Environment Requiring no prior experience within the field, the text first supplies all the background information necessary to grasp the issues explored in later chapters. It reviews the laws of thermodynamics and conservation of matter; basic chemistry concepts, such as chemical bonding, acid–base theory, and oxidation–reduction; carbon, oxygen, hydrogen, nitrogen, phosphorus, and sulfur cycles; and modern environmental toxicology topics, such as organochlorine pesticides, polychlorinated biphenyls, dioxins, and endocrine toxins. The author then focuses on current environmental issues, including energy conservation, smog, indoor air contaminants, global warming, ozone depletion, water shortages and pollution, and solid and hazardous wastes. Presenting ways to combat these problems, he explores hydrogen fuel cells, catalytic converters, the phase out of chlorofluorocarbons, and desalinization.

There is a paradigm shift in Informatics in general and in technologies enhancing human learning in particular. The debate between the evolutionaries - those that wish to optimize and refine current approaches - and the revolutionaries - those that support a fundamental change of approach - is quite actual. Within the Internet communities, the debate is hidden behind the words semantic WEB versus semantic Grid; within educational technologists between content/resource centered and conversation centered e-learning, or either between teaching and pedagogy on the one side, and learning and communities of practice on the other. In general, in Informatics, the shift from a product-page oriented to a service-conversation oriented view may possibly impact most if not all the foreseen applications, in e-learning, but also in e-science, e-democracy, e-commerce, e-health, etc. Part A of the book is dedicated to Position papers: visions about what to do and why to do it in the next years. The remaining parts (B to D) offer partial answers to how to do it. Part B concerns what we called: Content-centered services, i.e.: a vision of learning systems that privileges knowledgeable and integrated solutions that address not only content but more generally the creation and management of human Virtual Communities connected on the Grid in order to offer and consume different services facilitating and enhancing human learning. Finally part D is concerned with new directions in learning services.

Reviews the contemporary framework of legislation for the regulation of chemicals in the UK ...

Going green is a hot topic in both chemistry and chemical engineering. Green chemistry is the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances. Green engineering is the development and commercialization of economically feasible industrial processes that reduce the risk to human health and the environment. This book summarizes a workshop convened by the National Research Council to explore the widespread implementation of green chemistry and chemical engineering concepts into undergraduate and graduate education and how to integrate these concepts into the established and developing curricula. Speakers highlighted the most effective educational practices to date and discussed the most promising educational materials and software tools in green chemistry and engineering. The goal of the workshop was to inform the Chemical Sciences Roundtable, which provides a science-oriented, apolitical forum for leaders in the chemical sciences to discuss chemically related issues affecting government, industry, and universities.

The Ancient Maya Marketplace, edited by Eleanor M. King, reviews the debate on prehispanic Maya markets. The volume's contributors challenge the model of a non-commercialized Maya economy and offer compelling new evidence for the existence and identification of ancient marketplaces among the Maya.

There is a need to explain that generic versions of a drug may not be manufactured by the same process as brand-name drugs and that the different processes may have dramatically different environmental impacts. Two global forces are at odds today—the push for "greener" processes and the push for lower drug prices. This book brings this conflict into sharp focus by discussing in detail the published process chemistry for top-selling small molecule drugs. Providing insights about process route selection, choice of reagents, and reaction conditions, Pharmaceutical Process Chemistry for Synthesis guides process chemists in identifying best processes for manufacturing these blockbuster drugs as they lose patent protection. Further, it highlights the strategies and methodology that might be useful for expediting the process research and development of the blockbusters of the future. Written from a refreshingly objective perspective, this book is essential for process chemists who need to devise practical syntheses for increasingly complex drugs in a constantly decreasing time frame.

John Emsley's Nature's Building Blocks was published in paperback in 2003. In this readable, informative, and fascinating guide to the elements are entries on each of the 100-odd chemical elements, arranged alphabetically from actinium to zirconium. Each entry comprises an explanation of where the element's name comes from, followed by

Body element (the role it plays in living things), Element of history (how and when it was discovered), Economic element (what it is used for), Environmental element (where it occurs, how much), Chemical element (facts, figures, and narrative), and Element of surprise (an amazing, little-known fact). Since publication of the first edition there have been a number of developments. Three new chemical elements have been named and validated: darmstadtium, roetgenium, and copernicium and the section on 'transfermium elements' has now been incorporated into the main part of the book. Economic uses of elements have grown, and some quite rare elements such as Scandium are now economically important, along with updates to elements such as gold due to new roles in industry. Fully revised and updated for 2010, this browsable compendium holds a wealth of useful information.

This one-stop resource is ideal for understanding the extent to which toxic chemicals are used in American industry and agriculture—impacting public health and the environment through everything from industrial solvents to children's toys. Every year, about four billion pounds of toxic chemicals are generated and released by U.S. industries. Do these chemicals pose a potential health threat to American families, including vulnerable groups like children and the elderly? Is their manufacture and use adequately regulated to protect both human and environmental health? Is the Chemical Safety for the 21st Century Act, signed in June 2016 by former President Obama with bipartisan support, truly the first major overhaul of toxic chemical regulation in forty years to put human health first, as its supporters asserted? Or is it a fatally flawed bill that does the bidding of industry by undermining strong state environmental and public health laws, as some detractors claim? This two-volume set will address all of those questions. Moreover, it will present and examine arguments marshaled by business interests, community leaders, scientists, activists, and lawmakers alike. It will thus provide users with the information they need to accurately assess the impacts—pro and con—that industrial chemicals are having in shaping the world in which we work, eat, drink, breathe, and play. Approximately 300 encyclopedia entries on toxic chemicals in the United States, including product/commercial uses, laws and regulations governing their use, environmental and human health risks, types of contamination, and notable events and individuals Chronology of major events in the development and regulation of toxic chemicals in the United States Authoritative and objective analysis of the risks and benefits of chemicals in modern society Perspectives of chemical industry and related businesses, environmental and public health advocacy organizations, and lawmakers from across the political spectrum

Popular associations with chemistry range from poisons, hazards, chemical warfare and environmental pollution to alchemical pseudoscience, sorcery and mad scientists, which gravely affect the public image of science in general. While chemists have merely complained about their public image, social and cultural studies of science have largely avoided anything related to chemistry. This book provides, for the first time, an in-depth understanding of the cultural and historical contexts in which the public image of chemistry has emerged. It argues that this image has been shaped through recurring and unlucky interactions between chemists in popularizing their discipline and nonchemists in expressing their expectations and fears of science. Written by leading scholars from the humanities, social sciences and chemistry in North America, Europe and Australia, this volume explores a blind spot in the science-society relationship and calls for a constructive dialog between scientists and their public.

This book discusses the technical, artistic and commercial challenges of the perfume industry in an informative and engaging style.

Colorful graphics and 19 chapters featuring such learning aids as "chemistry at work" and conceptual problems characterize this large text on a large subject. Cited by the American Association for the Advancement of Science for his pioneering work in the chemistry of ylides, Johnson (who spent most of his career at the U. of North Dakota), explores the smorgasbord of subject matter that is organic chemistry and new developments in the field. Appends a summary of nomenclature, spectra group assignments, and values of selected important compounds. The index is combined with a glossary. Annotation copyrighted by Book News, Inc., Portland, OR

Providing guidance for chemists and other scientists entering pharmaceutical discovery and development, this up-to-the-minute reference presents contributions from an international group of nearly 50 renowned researchers—offering a solid grounding in synthetic and physical organic chemistry, and clarifying the roles of various specialties in the development of new drugs.

Featuring over 1000 references, tables, and illustrations, Process Chemistry in the Pharmaceutical Industry is sure to find its way to the bookshelves of organic, physical, analytical, process, and medicinal chemists and biochemists; pharmacists; and upper-level undergraduate and graduate students in these disciplines.

This book is aimed at chemistry teachers, teacher educators, chemistry education researchers, and all those who are interested in increasing the relevance of chemistry teaching and learning as well as students' perception of it. The book consists of 20 chapters. Each chapter focuses on a certain issue related to the relevance of chemistry education. These chapters are based on a recently suggested model of the relevance of science education, encompassing individual, societal, and vocational relevance, its present and future implications, as well as its intrinsic and extrinsic aspects. "Two highly distinguished chemical educators, Ingo Eilks and AviHofstein, have brought together 40 internationally renowned colleagues from 16 countries to offer an authoritative view of chemistry teaching today. Between them, the authors, in 20 chapters, give an exceptional description of the current state of chemical education and signpost the future in both research and in the classroom. There is special emphasis on the many attempts to enthuse students with an understanding of the central science, chemistry, which will be helped by having an appreciation of the role of the science in today's world. Themes which transcend all education such as collaborative work, communication skills, attitudes, inquiry learning and teaching, and problem solving are covered in detail and used in the context of teaching modern chemistry. The book is divided into four parts which describe the individual, the societal, the vocational and economic, and the non-formal dimensions and the editors bring all the disparate leads into a coherent narrative, that will be highly satisfying to experienced and new researchers and to teachers with the daunting task of teaching such an intellectually demanding subject. Just a brief glance at the index and the references will convince anyone interested in chemical education that this book is well worth studying; it is scholarly and readable and has tackled the most important issues in chemical education today and in the foreseeable future." –

Professor David Waddington, Emeritus Professor in Chemistry Education, University of York, United Kingdom

This book highlights the importance of chemistry in human well-being by introducing the readers to the basic usefulness of chemistry in everyday life. Chemistry has helped in creating valuable products that have transformed the lifestyle of people. Since we spend lots of money in buying our daily requirements, there is a need for us to understand the benefits and hazards of using consumer products which contain chemicals. In this context, this book will help readers to make reasoned choices and intelligent decisions in buying consumer products which contain chemicals. This text is divided into seventeen chapters devoted to the basic necessities of life like food, shelter, clothing, healthcare, and energy and consumer products. Topics on chemistry in environment, crime, warfare, arts, conservation, communications and transportation are also highlighted in individual chapters. All these topics are discussed with regard to the needs of modern society. In this third edition, the various chapters have been updated with current information keeping the language simple and friendly. Critical thinking exercises and questions have been included. The style of questions included in the book is to meet the requirement of various competitive examinations such as Indian Civil Services and entrance examinations in medicine and engineering.

An essential introduction to the organic chemicals industry—in the context of globalization, advances in technology, and environmental concerns Providing 95 percent of the 500 billion pounds of organic chemicals produced in the world, the petroleum and natural gas industries are responsible for products that ensure our present quality of life. Products as diverse as gasoline, plastics, detergents, fibers, pesticides, tires, lipstick, shampoo, and sunscreens are based on seven raw materials derived from petroleum and natural gas. In an updated and expanded Third Edition, *Industrial Organic Chemicals* examines why each of these chemical building blocks—ethylene, propylene, C4 olefins (butenes and butadiene), benzene, toluene, the xylenes, and methane—is preferred over another in the context of an environmental issue or manufacturing process, as well as their individual chemistry, derivatives, method of manufacture, uses, and economic significance. The new edition details the seismic shifts in the world's chemistry industry away from the United States, Western Europe and Japan, transforming the Middle East and Asia-Pacific region, especially China, into major players. The book also details: The impact of globalization on the patterns of worldwide transportation of chemicals, including methods of shipping chemicals The technological advances in the area of polymerization and catalysis, including catalyst design and single-site catalysts Chemicals for electronics, with much new material on conducting polymers, photovoltaic cells, and related materials The discovery of vast reserves of shale gas and shale oil, altering long-term predictions of resource depletion in the United States and other countries Commercial and market aspects of the chemical industry, with coverage of emerging new companies such as INEOS, Formosa Plastics, LyondellBasell, and SABIC With expanded coverage on the vital role of green chemistry, renewables, chemicals and fuels on issues of sustainability and climate change, *Industrial Organic Chemicals* offers an unparalleled examination of what is at the heart of this multi-billion dollar industry, how globalization has transformed it, and its ever growing role in preserving the Earth and its resources. This product is not available separately, it is only sold as part of a set. There are 750 products in the set and these are all sold as one entity. This product is not available separately, it is only sold as part of a set. There are 750 products in the set and these are all sold as one entity.

As we enter the new millennium, chemical and energy technology practice is in the throes of a paradigm shift. During the past fifty years there has been a growing awareness of the adverse effects of chemical products, byproducts and wastes upon human health and the environment, and the development of federal and state regulations has been an important first step in the redress of these problems. This book provides a history of these early years from a scientific and sociopolitical perspective to provide the necessary background for charting a course for the new millennium. The sources of pollution of the air we breathe, the water we drink, the land that provides our sustenance and the blood that courses through our veins are no longer regional or even national in scope and it is clear that new ways of thinking are required to insure that the ongoing evolution of chemical and energy technology is in keeping with the needs of all the people and ecosystems of planet earth. The book concludes with an environmental credo to provide the technical, political and ethical bases for the paradigm shift to a sustainable balance among chemicals, human health and the environment.

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