

Kinetics Of Heterogeneous Catalytic Reactions Princeton Legacy Library

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Aerosol Science - Ian Colbeck 2014-01-30

Aerosols influence many areas of our daily life. They are at the core of environmental problems such as global warming, photochemical smog and poor air quality. They can also have diverse effects on human health, where exposure occurs in both outdoor and indoor environments.

However, aerosols can have beneficial effects too; the delivery of drugs to the lungs, the delivery of fuels for combustion and the production of nanomaterials all rely on aerosols. Advances in particle measurement technologies have made it possible to take advantage of rapid changes in both particle size and concentration. Likewise, aerosols can now be produced in a controlled fashion. Reviewing many technological applications together with the current scientific status of aerosol modelling and measurements, this book includes:

- Satellite aerosol remote sensing
- The effects of aerosols on climate change
- Air pollution and health
- Pharmaceutical aerosols and pulmonary drug delivery
- Bioaerosols and hospital infections
- Particle emissions from vehicles
- The safety of emerging nanomaterials
- Radioactive aerosols: tracers of atmospheric processes

With the importance of this topic brought to the public's attention after the eruption of the Icelandic volcano Eyjafjallajökull, this book provides a timely, concise and

accessible overview of the many facets of aerosol science.

Paperbound Books in Print - 1984

[Nano Comes to Life](#) - Sonia Contera 2021-11-16

"Increasingly, scientists are gaining control over matter at the nanometer scale. Spearheaded by physical scientists operating at the interfaces of physics and biology (such as the author herself), advances in nanoscience and technology are transforming how we think about life and treat human health. This is due to a convergence of size. To do medicine, one must understand and be able to reach the nanoscale environment of healthy cells in tissues and organs, as well as other nano-sized building blocks that constitute a living organism, such as proteins and DNA. The ground-breaking advances being made at the frontiers of nanoscience and -technology, specifically in the areas of biology and medicine, are the subject of this short, popular-level book. Chapter 1 describes how nanotechnology and quantitative methods in biology are progressively being deployed to embrace life in all its multiscale, hierarchical intricacy and multiplicity. Chapters 2 through 4 review how bioinspired and biomimetic nanostructures and nanomachines are being created and integrated into strategies aimed at solving specific medical

problems. In particular, Chapter 2 summarizes how scientists are seeking to build artificial nanostructures using both biological molecules and the organizational principles of biology. Chapter 3 gives an account of how nanotechnology is being used to develop drug-delivery strategies that specifically target cancer cells and tumors to improve the efficacy of current cancer chemotherapies. Chapter 4 reviews the science of one of the most potentially transformative scientific fields: tissue engineering. In a concluding chapter (Chapter 5), Contera reviews how nanotechnology, biology, and medicine will continue fusing with other sciences and technologies - incorporating more mathematical and computational modelling, as well as AI and robotics. Nanoscale devices will be used to learn biology; and biology will be used to inspire increasingly sophisticated "transmaterial" devices that mimic some of the characteristics of biology and incorporate new features that are not available in the biological world. The effects on human health and longevity will be profound. In a more personal epilogue, Contera describes the crossroads at which we find ourselves. Accessing our own biology evokes a mixture of possibility and dread. However, Contera maintains that we can create a positive transmaterial world for the benefit of humankind, and she describes ways in which scientists are proactively engaging with the public, politicians, industry, and entrepreneurs, as well as the media and the arts, to communicate the power and risks of new advances and to influence the ways in which new technologies will affect our future"--

Kinetics of Heterogeneous Catalytic Reactions - Michel Boudart
1984

This book is a critical account of the principles of the kinetics of heterogeneous catalytic reactions in the light of recent developments in surface science and catalysis science. Originally published in 1984. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These paperback editions preserve the original texts of these important books while presenting them in durable paperback editions. The goal of the Princeton Legacy

Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

Some Problems in Chemical Kinetics and Reactivity, Volume 1 - Nikolai Nikolaevich Semenov 2017-03-21

This translation, in two volumes, of an introductory paper to a Symposium on Chemical Kinetics and Reactivity, held in Moscow in 1954, has been enlarged and revised by the author, winner of the Nobel Prize in chemistry in 1956 and one of the two or three top flight Russian physical scientists. Volume 1 covers a wide range of important work and includes a survey of radical and chain reactions and a discussion of chemical changes, direct mono- and bi-molecular processes, ionic reactions, heterogeneous catalysis, initiation and destruction of radical chains on solid surfaces. Originally published in 1958. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

Chemical Rocket Propulsion - Luigi T. De Luca 2016-08-19

Developed and expanded from the work presented at the New Energetic Materials and Propulsion Techniques for Space Exploration workshop in June 2014, this book contains new scientific results, up-to-date reviews, and inspiring perspectives in a number of areas related to the energetic aspects of chemical rocket propulsion. This collection covers the entire life of energetic materials from their conceptual formulation to practical manufacturing; it includes coverage of theoretical and experimental ballistics, performance properties, as well as laboratory-scale and full system-scale, handling, hazards, environment, ageing, and disposal. Chemical Rocket Propulsion is a unique work, where a selection of accomplished experts from the pioneering era of space propulsion and current technologists from the most advanced international laboratories

discuss the future of chemical rocket propulsion for access to, and exploration of, space. It will be of interest to both postgraduate and final-year undergraduate students in aerospace engineering, and practicing aeronautical engineers and designers, especially those with an interest in propulsion, as well as researchers in energetic materials.

The Publishers' Trade List Annual - 1985

Amino Acids and the Asymmetry of Life - Uwe Meierhenrich

2008-08-15

"How did life originate and why were left-handed molecules selected for its architecture?" This question of high public and interdisciplinary scientific interest is the central theme of this book. It is widely known that in processes triggering the origin of life on Earth, the equal occurrence, the parity between left-handed amino acids and their right-handed mirror images, was violated. The balance was inevitably tipped to the left - as a result of which life's proteins today exclusively implement the left form of amino acids. Written in an engaging style, this book describes how the basic building blocks of life, the amino acids, formed. After a comprehensible introduction to stereochemistry, the author addresses the inherent property of amino acids in living organisms, namely the preference for left-handedness. What was the cause for the violation of parity of amino acids in the emergence of life on Earth? All the fascinating models proposed by physicists, chemists and biologist are vividly presented including the scientific conflicts. The author describes the attempt to verify any of those models with the chirality module of the ROSETTA mission, a probe built and launched with the mission to land on a comet and analyse whether there are chiral organic compounds that could have been brought to the Earth by cometary impacts. A truly interdisciplinary astrobiology book, "Amino Acids and the Asymmetry of Life" will fascinate students, researchers and all readers with backgrounds in natural sciences. With a foreword by Henri B. Kagan.

Kinetics of Heterogeneous Catalytic Reactions - Michel Boudart

2014-07-14

This book is a critical account of the principles of the kinetics of

heterogeneous catalytic reactions in the light of recent developments in surface science and catalysis science. Originally published in 1984. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

Who's who in Frontiers of Science and Technology - 1985

Kinetics of Chemical Processes - Michel Boudart 2014-05-16

Kinetics of Chemical Processes details the concepts associated with the kinetic study of the chemical processes. The book is comprised of 10 chapters that present information relevant to applied research. The text first covers the elementary chemical kinetics of elementary steps, and then proceeds to discussing catalysis. The next chapter tackles simplified kinetics of sequences at the steady state. Chapter 5 deals with coupled sequences in reaction networks, while Chapter 6 talks about autocatalysis and inhibition. The seventh chapter describes the irreducible transport phenomena in chemical kinetics. The next two chapters discuss the correlations in homogenous kinetics and heterogeneous catalysis, respectively. The last chapter covers the analysis of reaction networks. The book will be of great use to students, researchers, and practitioners of scientific disciplines that deal with chemical reaction, particularly chemistry and chemical engineering.

Twelve Years a Slave - Solomon Northup 2021-01-01

"Having been born a freeman, and for more than thirty years enjoyed the blessings of liberty in a free State—and having at the end of that time been kidnapped and sold into Slavery, where I remained, until happily rescued in the month of January, 1853, after a bondage of twelve years—it has been suggested that an account of my life and fortunes would not be uninteresting to the public." -an excerpt

Frontiers of Materials Research - National Academies of Sciences, Engineering, and Medicine 2019-09-12

Modern materials science builds on knowledge from physics, chemistry, biology, mathematics, computer and data science, and engineering sciences to enable us to understand, control, and expand the material world. Although it is anchored in inquiry-based fundamental science, materials research is strongly focused on discovering and producing reliable and economically viable materials, from super alloys to polymer composites, that are used in a vast array of products essential to today's societies and economies. *Frontiers of Materials Research: A Decadal Survey* is aimed at documenting the status and promising future directions of materials research in the United States in the context of similar efforts worldwide. This third decadal survey in materials research reviews the progress and achievements in materials research and changes in the materials research landscape over the last decade; research opportunities for investment for the period 2020-2030; impacts that materials research has had and is expected to have on emerging technologies, national needs, and science; and challenges the enterprise may face over the next decade.

Astrochemistry and Astrobiology - Ian W. M. Smith 2012-10-28

Astrochemistry and Astrobiology is the debut volume in the new series *Physical Chemistry in Action*. Aimed at both the novice and experienced researcher, this volume outlines the physico-chemical principles which underpin our attempts to understand astrochemistry and predict astrobiology. An introductory chapter includes fundamental aspects of physical chemistry required for understanding the field. Eight further chapters address specific topics, encompassing basic theory and models, up-to-date research and an outlook on future work. The last chapter examines each of the topics again but addressed from a different angle. Written and edited by international experts, this text is accessible for those entering the field of astrochemistry and astrobiology, while it still remains interesting for more experienced researchers.

The Science of Flavonoids - Erich Grotewold 2008

This is the only book of its kind to provide an overview of the science of

flavonoids in plants.

Catalysis by Metals - Albert Jean Renouprez 2013-03-09

Catalytic reactions on metals are still nowadays involved in more than half of the chemical industrial processes. The winter school held at "I 'Ecole de in March 1996, 13 years after the first one, accounts *Physique des Houches*" for an evolution of the field in several directions. First, the emulation between theoretical chemistry and solid state physics has emerged on heuristic concepts, leading not only to explanations of the observed phenomena but, for the first time, to predictions of the reactivity of catalytic systems and of the reaction pathways. The second domain which during these years has become of primary importance is the abatement of the pollution. It concerns not only the conversion of polluting effluents but more and more major modifications of the processes to avoid the production of undesired products. Two striking examples are the necessary catalytic conversion of the 100 000 cubic meter of hydrogen that would be produced in a major incident of a nuclear power plant and the replacement of the CFC. The valorization of agricultural supplies can already be considered as one of the major achievement of catalysis. Indeed, the carbon of biosustainable raw materials represents more than 2 orders of magnitude the amount extracted from fossil fuels each year. Moreover, the molecules are already highly functionalised in contrast with hydrocarbons which require costly steps to be converted to the same products. They are now of current use in the elaboration of cosmetics, vitamins, polymers, etc. *Some Problems in Chemical Kinetics and Reactivity* - N. N. Semenov 1958

So Simple a Beginning - Raghuveer Parthasarathy 2022-02-08

A biophysicist reveals the hidden unity behind nature's breathtaking complexity The form and function of a sprinting cheetah are quite unlike those of a rooted tree. A human being is very different from a bacterium or a zebra. The living world is a realm of dazzling variety, yet a shared set of physical principles shapes the forms and behaviors of every creature in it. *So Simple a Beginning* shows how the emerging new

science of biophysics is transforming our understanding of life on Earth and enabling potentially lifesaving but controversial technologies such as gene editing, artificial organ growth, and ecosystem engineering. Raghuvver Parthasarathy explains how four basic principles—self-assembly, regulatory circuits, predictable randomness, and scaling—shape the machinery of life on scales ranging from microscopic molecules to gigantic elephants. He describes how biophysics is helping to unlock the secrets of a host of natural phenomena, such as how your limbs know to form at the proper places, and why humans need lungs but ants do not. Parthasarathy explores how the cutting-edge biotechnologies of tomorrow could enable us to alter living things in ways both subtle and profound. Featuring dozens of original watercolors and drawings by the author, this sweeping tour of biophysics offers astonishing new perspectives on how the wonders of life can arise from so simple a beginning.

Oxygen in Catalysis - Adam Bielanski 1990-11-29

A description of catalytic systems commonly used as model systems in the laboratory and as industrial catalysts in large-scale operations, and a discussion of the mechanisms operating in these reactions. Attempts to describe the elementary steps by quantum chemical methods are also shown, as are rec

The Characterization of High-temperature Vapors - John L. Margrave 1967

Cleaner Combustion - Frédérique Battin-Leclerc 2013-09-06

This overview compiles the on-going research in Europe to enlarge and deepen the understanding of the reaction mechanisms and pathways associated with the combustion of an increased range of fuels. Focus is given to the formation of a large number of hazardous minor pollutants and the inability of current combustion models to predict the formation of minor products such as alkenes, dienes, aromatics, aldehydes and soot nano-particles which have a deleterious impact on both the environment and on human health. *Cleaner Combustion* describes, at a fundamental level, the reactive chemistry of minor pollutants within extensively

validated detailed mechanisms for traditional fuels, but also innovative surrogates, describing the complex chemistry of new environmentally important bio-fuels. Divided into five sections, a broad yet detailed coverage of related research is provided. Beginning with the development of detailed kinetic mechanisms, chapters go on to explore techniques to obtain reliable experimental data, soot and polycyclic aromatic hydrocarbons, mechanism reduction and uncertainty analysis, and elementary reactions. This comprehensive coverage of current research provides a solid foundation for researchers, managers, policy makers and industry operators working in or developing this innovative and globally relevant field.

Computational Gas-Solids Flows and Reacting Systems: Theory, Methods and Practice - Pannala, Sreekanth 2010-09-30

"This book provides various approaches to computational gas-solids flow and will aid the researchers, graduate students and practicing engineers in this rapidly expanding area"--Provided by publisher.

The Molecular Switch - Rob Phillips 2020-09

A signature feature of living organisms is their ability to carry out purposeful actions by taking stock of the world around them. To that end, cells have an arsenal of signaling molecules linked together in signaling pathways, which switch between inactive and active conformations. The *Molecular Switch* articulates a biophysical perspective on signaling, showing how allostery—a powerful explanation of how molecules function across all biological domains—can be reformulated using equilibrium statistical mechanics, applied to diverse biological systems exhibiting switching behaviors, and successfully unify seemingly unrelated phenomena. Rob Phillips weaves together allostery and statistical mechanics via a series of biological vignettes, each of which showcases an important biological question and accompanying physical analysis. Beginning with the study of ligand-gated ion channels and their role in problems ranging from muscle action to vision, Phillips then undertakes increasingly sophisticated case studies, from bacterial chemotaxis and quorum sensing to hemoglobin and its role in mammalian physiology. He looks at G-protein coupled receptors as well

as the role of allosteric molecules in gene regulation. Phillips concludes by surveying problems in biological fidelity and offering a speculative chapter on the relationship between allostery and biological Maxwell demons. Appropriate for graduate students and researchers in biophysics, physics, engineering, biology, and neuroscience, *The Molecular Switch* presents a unified, quantitative model for describing biological signaling phenomena.

Current Index to Journals in Education - 1982

Forthcoming Books - Rose Arny 1984

Fluorine Chemistry at the Millennium - R.E. Banks 2000-12-04

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.

The Mechanisms of Pyrolysis, Oxidation, and Burning of Organic Materials - Leo Aloysius Wall 1972

Some Problems in Chemical Kinetics and Reactivity, Volume 2 -

Nikolai Nikolaevich Semenov 2017-03-14

This edition, considerably revised since Russian publication in 1954, now includes the theories of thermal and chain explosion reviewed in the light of very recent work. The classical example of the reaction between hydrogen and oxygen is treated in detail, and among the large selection of chain reactions analyzed are the gas phase cracking of hydrocarbons and the oxidation of methane and other hydrocarbons in the liquid phase.

The book summarizes many recent and unpublished Soviet investigations in the field. Originally published in 1959. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

Insecticides Design Using Advanced Technologies - Isaac Ishaaya 2007-02-15

Among the highlights of this book are the use of nanotechnology to increase potency of available insecticides, the use of genetic engineering techniques for controlling insect pests, the development of novel insecticides that bind to unique biochemical receptors, the exploration of natural products as a source for environmentally acceptable insecticides, and the use of insect genomics and cell lines for determining biological and biochemical modes of action of new insecticides.

Undergraduate Announcement - University of Michigan--Dearborn 1985

Diffusion and Heat Exchange in Chemical Kinetics - David Albertovich Frank-Kamenetskii 2015-12-08

Frank-Kamenetskii, a leader in Russian science, was the first to define conditions for two stable operating regimes in chemical reactions, one controlled by chemical reactions, the other by diffusion processes. In this book he treats mathematically the subjects of reaction ignition, quenching, and periodic processes in chemical kinetics as found in flames, combustion of solids, and other chemical reactions. The book was translated from the Russian by the late N. Thou and edited by R. Wilhelm. Originally published in 1955. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and

hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

ACS Style Guide - Anne M. Coghill 2006

In the time since the second edition of The ACS Style Guide was published, the rapid growth of electronic communication has dramatically changed the scientific, technical, and medical (STM) publication world. This dynamic mode of dissemination is enabling scientists, engineers, and medical practitioners all over the world to obtain and transmit information quickly and easily. An essential constant in this changing environment is the requirement that information remain accurate, clear, unambiguous, and ethically sound. This extensive revision of The ACS Style Guide thoroughly examines electronic tools now available to assist STM writers in preparing manuscripts and communicating with publishers. Valuable updates include discussions of markup languages, citation of electronic sources, online submission of manuscripts, and preparation of figures, tables, and structures. In keeping current with the changing environment, this edition also contains references to many resources on the internet. With this wealth of new information, The ACS Style Guide's Third Edition continues its long tradition of providing invaluable insight on ethics in scientific communication, the editorial process, copyright, conventions in chemistry, grammar, punctuation, spelling, and writing style for any STM author, reviewer, or editor. The Third Edition is the definitive source for all information needed to write, review, submit, and edit scholarly and scientific manuscripts.

New Atlantis Revisited - Paul R. Josephson 1997

In 1958 construction began on Akademgorodok, a scientific utopian community modeled after Francis Bacon's vision of a "New Atlantis." The city, carved out of a Siberian forest 2,500 miles east of Moscow, was formed by Soviet scientists with Khrushchev's full support. They believed that their rational science, liberated from ideological and economic constraints, would help their country surpass the West in all fields. In a lively history of this city, a symbol of de-Stalinization, Paul Josephson

offers the most complete analysis available of the reasons behind the successes and failures of Soviet science--from advances in nuclear physics to politically induced setbacks in research on recombinant DNA. Josephson presents case studies of high energy physics, genetics, computer science, environmentalism, and social sciences. He reveals that persistent ideological interference by the Communist Party, financial uncertainties, and pressures to do big science endemic in the USSR contributed to the failure of Akademgorodok to live up to its promise. Still, a kind of openness reigned that presaged the glasnost of Gorbachev's administration decades later. The openness was rooted in the geographical and psychological distance from Moscow and in the informal culture of exchange intended to foster the creative impulse. Akademgorodok is still an important research center, having exposed physics, biology, sociology, economics, and computer science to new investigations, distinct in pace and scope from those performed elsewhere in the Soviet scientific establishment.

Modern Coordination Chemistry - Neil Winterton 2007-10-31

Coordination chemistry, as we know it today, has been shaped by major figures from the past, one of whom was Joseph Chatt. Beginning with a description of Chatt's career presented by co-workers, contemporaries and students, this fascinating book then goes on to show how many of today's leading practitioners in the field, working in such diverse areas as phosphines, hydrogen complexes, transition metal complexes and nitrogen fixation, have been influenced by Chatt. The reader is then brought right up-to-date with the inclusion of some of the latest research on these topics, all of which serves to underline Chatt's continuing legacy. Intended as a permanent record of Chatt's life, work and influence, this book will be of interest to lecturers, graduate students, researchers and science historians.

Books in Print Supplement - 1986

Includes authors, titles, subjects.

Phase Transitions - Ricard Solé 2011-08-14

Phase transitions--changes between different states of organization in a complex system--have long helped to explain physics concepts, such as

why water freezes into a solid or boils to become a gas. How might phase transitions shed light on important problems in biological and ecological complex systems? Exploring the origins and implications of sudden changes in nature and society, *Phase Transitions* examines different dynamical behaviors in a broad range of complex systems. Using a compelling set of examples, from gene networks and ant colonies to human language and the degradation of diverse ecosystems, the book illustrates the power of simple models to reveal how phase transitions occur. Introductory chapters provide the critical concepts and the simplest mathematical techniques required to study phase transitions. In a series of example-driven chapters, Ricard Solé shows how such concepts and techniques can be applied to the analysis and prediction of complex system behavior, including the origins of life, viral replication, epidemics, language evolution, and the emergence and breakdown of societies. Written at an undergraduate mathematical level, this book provides the essential theoretical tools and foundations required to develop basic models to explain collective phase transitions for a wide variety of ecosystems.

Catenanes, Rotaxanes, and Knots - Gottfried Schill 2017-01-31

Organic Chemistry, Volume 22: Catenanes, Rotaxanes, and Knots provides information pertinent to the synthesis of catenanes and rotaxanes. This book discusses the manner of interaction between the molecular subunits in catenanes in the solid, liquid, and gaseous states. Organized into 19 chapters, this volume begins with an overview of the idea of synthesizing molecules composed of separate entities that are mechanically connected to one another. This text then examines the stereochemistry and the other physical and chemical properties related to the mechanical connections in these compounds. Other chapters consider the determination of the absolute configuration of catenanes by extension of the Cahn-Ingold-Prelog rules. This book discusses as well the bond that mechanically connects the catenated rings. The final chapter deals with the model studies of the synthesis of knots, double wound rotaxanes, and higher linear catenanes. This book is a valuable resource for chemists, students, and research workers.

Kinetics of Chemical Reactions - Guy B. Marin 2018-12-07

This second, extended and updated edition presents the current state of kinetics of chemical reactions, combining basic knowledge with results recently obtained at the frontier of science. Special attention is paid to the problem of the chemical reaction complexity with theoretical and methodological concepts illustrated throughout by numerous examples taken from heterogeneous catalysis combustion and enzyme processes. Of great interest to graduate students in both chemistry and chemical engineering.

Recent Advances in Thermochemical Conversion of Biomass - Ashok Pandey 2015-01-28

This book provides general information and data on one of the most promising renewable energy sources: biomass for its thermochemical conversion. During the last few years, there has been increasing focus on developing the processes and technologies for the conversion of biomass to liquid and gaseous fuels and chemicals, in particular to develop low-cost technologies. This book provides date-based scientific information on the most advanced and innovative processing of biomass as well as the process development elements on thermochemical processing of biomass for the production of biofuels and bio-products on (biomass-based biorefinery). The conversion of biomass to biofuels and other value-added products on the principle biorefinery offers potential from technological perspectives as alternate energy. The book covers intensive R&D and technological developments done during the last few years in the area of renewable energy utilizing biomass as feedstock and will be highly beneficial for the researchers, scientists and engineers working in the area of biomass-biofuels- biorefinery. Provides the most advanced and innovative thermochemical conversion technology for biomass Provides information on large scales such as thermochemical biorefinery Useful for researchers intending to study scale up Serves as both a textbook for graduate students and a reference book for researchers Provides information on integration of process and technology on thermochemical conversion of biomass

Atmospheric Science at NASA - Erik M. Conway 2008-11-03

Honorable Mention, 2008 ASLI Choice Awards. Atmospheric Science Librarians International This book offers an informed and revealing account of NASA's involvement in the scientific understanding of the Earth's atmosphere. Since the nineteenth century, scientists have attempted to understand the complex processes of the Earth's atmosphere and the weather created within it. This effort has evolved with the development of new technologies—from the first instrument-equipped weather balloons to multibillion-dollar meteorological satellite and planetary science programs. Erik M. Conway chronicles the history of atmospheric science at NASA, tracing the story from its beginnings in 1958, the International Geophysical Year, through to the present,

focusing on NASA's programs and research in meteorology, stratospheric ozone depletion, and planetary climates and global warming. But the story is not only a scientific one. NASA's researchers operated within an often politically contentious environment. Although environmental issues garnered strong public and political support in the 1970s, the following decades saw increased opposition to environmentalism as a threat to free market capitalism. Atmospheric Science at NASA critically examines this politically controversial science, dissecting the often convoluted roles, motives, and relationships of the various institutional actors involved—among them NASA, congressional appropriation committees, government weather and climate bureaus, and the military.