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Superfine Particle Technology - Noboru Ichinose
2011-12-08

If a substance is repeatedly subdivided, the result is what are known as "microscopic particles". These particles are distinguished from the solid mass which they originally formed by the size of the surface area per unit weight. This simple difference holds true down to a certain lower size limit, and when this limit is exceeded, a new state of matter is reached, in which the behavior of the particles is quite different to that of the original solid. Particles in this state are termed "superfine particles", and are distinct from ordinary particles. The size of the superfine particles, that is to say the size limit below which particle behavior is completely different from the behavior of the original solid, varies a good deal depending on the physical properties of the substance in question. Properties such as magnetism and electrical resistance are closely related to the internal structural properties of the particles themselves, such as the magnetization processes of their respective magnetic domains, and the mean free path of charged bodies. This internal structure therefore limits the size of the superfine particles. In ceramic processing, on the other hand, the surface area of the particles themselves becomes an even more important factor than their internal structure. In this case, the size of the superfine particles is determined by the interaction between water and solvents on the surface of the particles.

Standard Methods for the Examination of Water and Wastewater - 1913

Nanomaterials - Igor Linkov 2008-12-26

Many potential questions regarding the risks associated with the development and use of wide-ranging technologies enabled through engineered nanomaterials. For example, with over 600 consumer products available globally, what information exists that describes their risk to human health and the environment? What engineering or use controls can be deployed to minimize the potential environmental health and safety impacts of nanomaterials throughout the manufacturing and product lifecycles? How can the potential environmental and health benefits of nanotechnology be realized and maximized? The idea for this book was conceived at the NATO Advanced Research Workshop (ARW) on "Nanomaterials: Environmental Risks and Benefits and Emerging Consumer Products." This meeting – held in Algarve, Portugal, in April 2008 – started with building a foundation to harmonize risks and benefits associated with nanomaterials to develop risk management approaches and policies. More than 70 experts, from 19 countries, in the fields of risk assessment, decision-analysis, and security discussed the current state-of-knowledge with regard to nanomaterial risk and benefits. The discussion focused on the adequacy of available risk assessment tools to guide nanomaterial applications in industry and risk governance. The workshop had five primary purposes: Describe the potential benefits of nanotechnology enabled commercial products. Identify and describe what is known about environmental and human health risks of nanomaterials and approaches to assess their safety. Assess the suitability of multicriteria decision analysis for reconciling the benefits and

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risks of nanotechnology.

Colloidal Silver - Werner Kühni 2016-02-08

The complete guide to the many uses and benefits of colloidal silver • Explains how to use colloidal silver to boost immunity, reduce inflammation, and treat 80 common diseases and conditions, including eczema, acne, thrush, flu, asthma, hay fever, mastitis, canker sores, gingivitis, and conjunctivitis • Details the correct dosages and applications of colloidal silver, including the proper “parts per million” (ppm) for acute treatments and daily use • Debunks concerns about colloidal silver and argyria, the “blue man” phenomena associated with silver intake • Looks at the latest scientific studies from UCLA Medical Center, Temple University, and other well-known institutions Colloidal silver was widely used as a natural antibiotic and antiviral until the mid-20th century when its use was overshadowed by the development of pharmaceutical antibiotics. Now with the rise of antibiotic-resistant infections, colloidal silver has reentered the sights of medical researchers, alternative health practitioners, and those looking to take control of their own health. In this practical guide, the authors explore the many uses and benefits of colloidal silver for boosting immunity, reducing pain and inflammation, and treating more than 80 common diseases and conditions, including eczema, acne, thrush, flu, asthma, hay fever, mastitis, canker sores, gingivitis, and conjunctivitis. Citing scientific studies from UCLA Medical Center, Temple University, and other well-known institutions, they reveal how colloidal silver works against bacteria, viruses, and fungi, including strep, staph, and candida, often in a matter of minutes. They examine how it accelerates the healing of cuts and bruises and how it can also be used to treat our animal companions. They explore its use, with no side effects, in the treatment of diseases of the eyes, skin, mouth, respiratory tract, and digestive tract as well as in the treatment of cancer. Debunking concerns about colloidal silver and argyria, the “blue man” phenomena associated with silver intake, the authors detail the correct dosages and applications of colloidal silver, including the proper “parts per million” (ppm) concentration for each ailment and for daily use. They explain what to look for when purchasing

colloidal silver as well as how to make it at home. They also explore the long history of silver in folk medicine, including its use by Hildegard von Bingen, and its use in homeopathy, crystal healing, anthroposophic medicine, and spagyrics.

Nanoparticle Technology Handbook Makio Naito 2007-10-19

Nanoparticle technology, which handles the preparation, processing, application and characterisation of nanoparticles, is a new and revolutionary technology. It becomes the core of nanotechnology as an extension of the conventional Fine Particle / Powder Technology. Nanoparticle technology plays an important role in the implementation of nanotechnology in many engineering and industrial fields including electronic devices, advanced ceramics, new batteries, engineered catalysts, functional paint and ink, Drug Delivery System, biotechnology, etc.; and makes use of the unique properties of the nanoparticles which are completely different from those of the bulk materials. This new handbook is the first to explain complete aspects of nanoparticles with many application examples showing their advantages and advanced development. There are handbooks which briefly mention the nanosized particles or their related applications, but no handbook describing the complete aspects of nanoparticles has been published so far. The handbook elucidates of the basic properties of nanoparticles and various nanostructural materials with their characterisation methods in the first part. It also introduces more than 40 examples of practical and potential uses of nanoparticles in the later part dealing with applications. It is intended to give readers a clear picture of nanoparticles as well as new ideas or hints on their applications to create new materials or to improve the performance of the advanced functional materials developed with the nanoparticles. * Introduces all aspects of nanoparticle technology, from the fundamentals to applications. * Includes basic information on the preparation through to the characterization of nanoparticles from various viewpoints * Includes information on nanostructures, which play an important role in practical applications. **Nanostructures and Nanomaterials** - Guozhong Cao 2011

This text focuses on the synthesis, properties and applications of nanostructures and nanomaterials, particularly inorganic nanomaterials. It provides coverage of the fundamentals and processing techniques with regard to synthesis, properties, characterization and applications of nanostructures and nanomaterials.

Colloids and the Ultramicroscope - Richard Adolf Zsigmondy 1909

Colloid Science in Pharmaceutical Nanotechnology - Selcan Karakuş 2020-02-12

This book presents studies on colloidal particle/nanoparticle systems and their applications. Some of the topics covered are include nanoparticle-based drug design, theranostic nanoparticles for cancer therapy, market perspectives of colloidal particles, and stability of nanoparticles. The authors focus on recent findings, applications, and new technological developments of the fundamental properties of colloidal particle systems.

Advances in Colloid Science Mohammed Rahman 2016-11-23

This book *Advances in Colloid Science* covers a number of up-to-date research advancement and progresses on colloids. It is a promising novel research field that has acknowledged a lot of interest recently. Here, the exciting scientific reports on cutting edge of science and technology associated to facile and economical synthesis, self-assembly, wettability, liquid crystallinity, physical properties, adoptions, morphology, control, drug design, structural properties, and prospective biological and optical implementation of newly designed colloids are concluded. This book presents an overview of recent and current colloidal study of fundamental and significant applications and implementation research worldwide. The colloidal science offers significant new and exciting challenges in biomedical, chemical, physical, and technological field. It is an important booklet for research organizations, governmental research centers, academic libraries, and R

Comprehensive Treatise of Electrochemistry - Peter Horsman 2013-11-11

The Delivery of Nanoparticles - Abbass A.

Hashim 2012-05-16

Nanoparticle is a general challenge for today's technology and the near future observations of science. Nanoparticles cover mostly all types of sciences and manufacturing technologies. The properties of this particle are flying over today scientific barriers and have passed the limitations of conventional sciences. This is the reason why nanoparticles have been evaluated for the use in many fields. InTech publisher and the contributing authors of this book in nanoparticles are all overconfident to invite all scientists to read this new book. The book's potential was held until it was approached by the art of exploring the most advanced research in the field of nano-scale particles, preparation techniques and the way of reaching their destination. 25 reputable chapters were framed in this book and there were alienated into four altered sections; Toxic Nanoparticles, Drug Nanoparticles, Biological Activities and Nano-Technology.

Aulton's Pharmaceutics Michael E. Aulton 2013
"Pharmaceutics is the art of pharmaceutical preparations. It encompasses design of drugs, their manufacture and the elimination of microorganisms from the products. This book encompasses all of these areas."--Provided by publisher.

Advanced Research in Nanosciences for Water Technology - Ram Prasad 2019-02-04

The establishment of clean, safe water is one of the major challenges facing societies around the globe. The continued urbanization of human populations, the increasing manipulation of natural resources, and the resulting pollution are driving remarkable burden on water resources. Increasing demands for food, energy, and natural resources are expected to continue to accelerate in the near future in response to the demands of these changing human populations. In addition, the complexity of human activities is leading to a diversity of new chemical contaminants in the environment that represent a major concern for water managers. This will create increased pressure on both water quantity and quality, making it increasingly difficult to provide a sustainable supply of water for human welfare and activities. Although protection of water resources is the best long-term solution, we will also need

innovative novel approaches and technologies to water treatment to ensure an adequate superior quality resource to meet these needs. Solving tomorrow's water issues will require unique approaches that incorporate emerging new technologies. Great advances have been made in the area of nanotechnology. Due to their unique physical and chemical properties, nanomaterials are extensively used in antibacterial medical products, membrane filters, electronics, catalysts, and biosensors. Nanoparticles can have distinctly different properties from their bulk counterparts, creating the opportunity for new materials with a diversity of applications. Recent developments related to water treatment include the potential use of carbon nanotubes, nanocomposites, nanospheres, nanofibers, and nanowires for the removal of a diversity of chemical pollutants. By exploiting the assets and structure of these new materials, such as increased surface area, high reactivity, and photocatalytic action, it will be possible to create technologies that can be very efficient at removing and degrading environmental pollutants. Understanding and using these unique properties should lead to innovative, cost-effective applications for addressing the complexities of emerging needs for water treatment and protection. Although still in the early stages, research into the application of nanotechnology shows great promise for solving some of these major global water issues. This comprehensive text describes the latest research and application methods in this rapidly advancing field.

Freezing Colloids: Observations, Principles, Control, and Use - Sylvain Deville 2017-01-19

This book presents a comprehensive overview of the freezing of colloidal suspensions and explores cutting-edge research in the field. It is the first book to deal with this phenomenon from a multidisciplinary perspective, and examines the various occurrences, their technological uses, the fundamental phenomena, and the different modeling approaches. Its chapters integrate input from fields as diverse as materials science, physics, biology, mathematics, geophysics, and food science, and therefore provide an excellent point of departure for anyone interested in the topic. The main content is supplemented by a wealth of figures and

illustrations to elucidate the concepts presented, and includes a final chapter providing advice for those starting out in the field. As such, the book provides an invaluable resource for materials scientists, physicists, biologists, and mathematicians, and will also benefit food engineers, civil engineers, and materials processing professionals.

Progress in Molecular and Environmental Biotechnology Angelo Carpi 2011-08-01

This book provides an example of the successful and rapid expansion of bioengineering within the world of the science. It includes a core of studies on bioengineering technology applications so important that their progress is expected to improve both human health and ecosystem.

These studies provide an important update on technology and achievements in molecular and cellular engineering as well as in the relatively new field of environmental bioengineering. The book will hopefully attract the interest of not only the bioengineers, researchers or professionals, but also of everyone who appreciates life and environmental sciences.

Nanocolloids Margarita Sanchez-Dominguez 2016-03-09

Nanocolloids: A Meeting Point for Scientists and Technologists presents an easy-to-read approach to current trends in nanoscale colloid chemistry, which offers relatively simple and economically feasible ways to produce nanomaterials.

Nanocolloids have been the subjects of major development in modern technology, with many current and future applications. The book helps scientists and technologists to understand the different aspects of modern nanocolloid science. It outlines the underlying fundamental principles of nanocolloid science and covers applications ranging from emulsions to dispersions and suspensions. You will find details on

experimental techniques and methods for the synthesis and characterization of nanocolloids, including the latest developments in nanoemulsions and nanoparticles. Edited by leading academics with over 10 years' experience in the field of colloid and surfactant science. Each chapter is authored by recognized experts in the field. Outlines the underlying fundamental science behind nanocolloids.

Provides comprehensive coverage of current topics and potential applications in nanocolloid

science. Presents a multidisciplinary approach to help chemical engineers, chemists, physicists, materials scientists and pharmacologists, form an in-depth understanding of nanocolloid science.

The Golden Book of Chemistry Experiments

- Robert Brent 2015-10-10

BANNED: The Golden Book of Chemistry Experiments was a children's chemistry book written in the 1960s by Robert Brent and illustrated by Harry Lazarus, showing how to set up your own home laboratory and conduct over 200 experiments. The book is controversial, as many of the experiments contained in the book are now considered too dangerous for the general public. There are apparently only 126 copies of this book in libraries worldwide. Despite this, its known as one of the best DIY chemistry books every published. The book was a source of inspiration to David Hahn, nicknamed "the Radioactive Boy Scout" by the media, who tried to collect a sample of every chemical element and also built a model nuclear reactor (nuclear reactions however are not covered in this book), which led to the involvement of the authorities. On the other hand, it has also been the inspiration for many children who went on to get advanced degrees and productive chemical careers in industry or academia.

Colloids Mohamed Nageeb Rashed 2021-09-08

Colloids are submicron particles that are ubiquitous in both natural and industrial products. Colloids and colloidal systems play a significant role in human health as well as commercial and industrial situations. Colloids have important applications in medicine, sewage disposal, water purification, mining, photography, electroplating, agriculture, and more. This book gathers recent research from experts in the field of colloids and discusses several aspects of colloid morphology, synthesis, and applications. The book is divided into three sections that cover different techniques for the synthesis of colloids, the structure, dynamic and stability of colloids, and applications of colloidal particles, respectively.

Optical Properties of Metal Clusters - Uwe Kreibitz 2013-04-17

Optical Properties of Metal Clusters deals with the electronic structure of metal clusters

determined optically. Clusters - as state intermediate between molecules and the extended solid - are important in many areas, e.g. in air pollution, interstellar matter, clay minerals, photography, heterogeneous catalysis, quantum dots, and virus crystals. This book extends the approaches of optical molecular and solid-state methods to clusters, revealing how their optical properties evolve as a function of size. Cluster matter, i.e. extended systems of many clusters - the most frequently occurring form - is also treated. The combination of reviews of experimental techniques, lists of results and detailed descriptions of selected experiments will appeal to experts, newcomers and graduate students in this expanding field.

Silver Nanoparticle Applications Emilio I.

Alarcon 2015-02-20

Exploring the synthesis, characterization, surface manipulation, electron transfer and biological activity of silver nanoparticles, this book examines the fundamentals of the properties and synthesis of these particles. With a renewed interest in silver nanoparticles, this book addresses the need to understand their potential in industrial, medical and other applications. It is divided into six chapters, each written by an expert and providing a comprehensive review of the topic while detailing recent advances made in each specific area. These topics include surface plasmon band, synthesis and characterization, Surface-enhanced Raman spectroscopy (SERS) and plasmon resonance mediated processes, photocatalysis, biomedical applications and biological activity. It also presents the current state of the art, challenges and future trends of catalysis, sensing and biomedical applications. 'Silver Nanoparticle Applications' provides an invaluable reference work and introduction for chemists, biologists, physicists and biomedical researchers who are interested in exploring the uses and applications of silver nanoparticles. It is also intended for students, researchers and professionals interested in nanotechnology.

Toxicological Risk Assessment of Chemicals -

Elsa Nielsen 2008-02-21

Unlike many existing books on toxicology that cover either toxicity of a particular substance or toxicity of chemicals on particular organ systems, Toxicological Risk Assessment of

Chemicals: A Practical Guide lays out the principle activities of conducting a toxicological risk assessment, including international approaches and methods for the risk

Applications of Ionic Liquids in Science and Technology - Scott Handy 2011-09-22

This volume, of a two volume set on ionic liquids, focuses on the applications of ionic liquids in a growing range of areas. Throughout the 1990s, it seemed that most of the attention in the area of ionic liquids applications was directed toward their use as solvents for organic and transition-metal-catalyzed reactions. Certainly, this interest continues on to the present date, but the most innovative uses of ionic liquids span a much more diverse field than just synthesis. Some of the main topics of coverage include the application of RTILs in various electronic applications (batteries, capacitors, and light-emitting materials), polymers (synthesis and functionalization), nanomaterials (synthesis and stabilization), and separations. More unusual applications can be noted in the fields of biomass utilization, spectroscopy, optics, lubricants, fuels, and refrigerants. It is hoped that the diversity of this volume will serve as an inspiration for even further advances in the use of RTILs.

Colloid Stability - Faraday Society 1978

Research Anthology on Synthesis, Characterization, and Applications of Nanomaterials - Management Association, Information Resources 2021-03-19

The use of nanotechnologies continues to grow, as nanomaterials have proven their versatility and use in many different fields and industries within the scientific profession. Using nanotechnology, materials can be made lighter, more durable, more reactive, and more efficient leading nanoscale materials to enhance many everyday products and processes. With many different sizes, shapes, and internal structures, the applications are endless. These uses range from pharmaceuticals to materials such as cement or cloth, electronics, environmental sustainability, and more. Therefore, there has been a recent surge of research focused on the synthesis and characterizations of these nanomaterials to better understand how they can be used, their applications, and the many

different types. The Research Anthology on Synthesis, Characterization, and Applications of Nanomaterials seeks to address not only how nanomaterials are created, used, or

characterized, but also to apply this knowledge to the multidimensional industries, fields, and applications of nanomaterials and nanoscience. This includes topics such as both natural and manmade nanomaterials; the size, shape, reactivity, and other essential characteristics of nanomaterials; challenges and potential effects of using nanomaterials; and the advantages of nanomaterials with multidisciplinary uses. This book is ideally designed for researchers, engineers, practitioners, industrialists, educators, strategists, policymakers, scientists, and students working in fields that include materials engineering, engineering science, nanotechnology, biotechnology, microbiology, drug design and delivery, medicine, and more.

Guidelines for Drinking-water Quality - World Health Organization 1997

This volume describes the methods used in the surveillance of drinking water quality in the light of the special problems of small-community supplies, particularly in developing countries, and outlines the strategies necessary to ensure that surveillance is effective.

Handbook on the Toxicology of Metals: Specific metals - Lars Friberg 1986

Chapters on specific metals include physical and chemical properties, methods and problems of analysis, production and uses, environmental levels and exposures, metabolism, levels in tissues and biological fluids, effects and dose-response relationships, carcinogenicity, mutagenicity, teratogenicity and preventative measures, diagnosis, treatment and prognosis.

Silver Nanoparticles - Khan Maaz 2018-07

[Intermolecular and Surface Forces](#) - Jacob N. Israelachvili 2015-05-29

This reference describes the role of various intermolecular and interparticle forces in determining the properties of simple systems such as gases, liquids and solids, with a special focus on more complex colloidal, polymeric and biological systems. The book provides a thorough foundation in theories and concepts of intermolecular forces, allowing researchers and students to recognize which forces are important

in any particular system, as well as how to control these forces. This third edition is expanded into three sections and contains five new chapters over the previous edition. · starts from the basics and builds up to more complex systems · covers all aspects of intermolecular and interparticle forces both at the fundamental and applied levels · multidisciplinary approach: bringing together and unifying phenomena from different fields · This new edition has an expanded Part III and new chapters on non-equilibrium (dynamic) interactions, and tribology (friction forces)

Colloidal Quantum Dot Optoelectronics and Photovoltaics - Gerasimos Konstantatos
2013-11-07

Captures the most up-to-date research in the field, written in an accessible style by the world's leading experts.

Experimental Relations of Gold (and Other Metals) to Light Michael Faraday 1857

Nano-Antimicrobials - Nicola Cioffi 2012-02-26

There is a high demand for antimicrobials for the treatment of new and emerging microbial diseases. In particular, microbes developing multidrug resistance have created a pressing need to search for a new generation of antimicrobial agents, which are effective, safe and can be used for the cure of multidrug-resistant microbial infections. Nano-antimicrobials offer effective solutions for these challenges; the details of these new technologies are presented here. The book includes chapters by an international team of experts. Chemical, physical, electrochemical, photochemical and mechanical methods of synthesis are covered. Moreover, biological synthesis using microbes, an option that is both eco-friendly and economically viable, is presented. The antimicrobial potential of different nanoparticles is also covered, bioactivity mechanisms are elaborated on, and several applications are reviewed in separate sections. Lastly, the toxicology of nano-antimicrobials is briefly assessed.

Separation, Preconcentration and Spectrophotometry in Inorganic Analysis Marczenko 2000-10-18

Spectrophotometry enables one to determine, with good precision and sensitivity, almost all

the elements present in small and trace quantities of any material. The method is particularly useful in the determination of non-metals and allows the determination elements in a large range of concentrations (from single % to low ppm levels) in various materials. In Separation, Preconcentration and Spectrophotometry in Inorganic Analysis, much attention has been paid to separation and preconcentration methods, since they play an essential role in increasing the selectivity and sensitivity of spectrophotometric methods. Separation and preconcentration methods have also been utilised in other determination techniques. Spectrophotometric methods which are widely used for the determination of the elements in a large variety of inorganic materials are presented in the book whilst separation and preconcentration procedures combined with spectrophotometry are also described. This book contains recent advances in spectrophotometry, detailed discussion of the instrumentation, and the techniques and reagents used for spectrophotometric determination of elements in a wide range of materials as well as a detailed discussion of separation and preconcentration procedures that precede the spectrophotometric detection.

Microbiology - Joan Slonczewski 2017-07-03
The most current and visually engaging introduction to general microbiology.

Nanobiomaterials in Clinical Dentistry - Karthikeyan Subramani 2019-04-14
Nanobiomaterials in Clinical Dentistry, Second Edition shows how a variety of nanomaterials are being used to solve problems in clinical dentistry. New nanomaterials are leading to a range of emerging dental treatments that utilize more biomimetic materials that more closely duplicate natural tooth structure (or bone, in the case of implants). The book's chapters discuss the advantages and challenges of using nanomaterials and include case studies to illustrate how a variety of materials are best used in research and practice. Contains information from an interdisciplinary, international group of scientists and practitioners in the fields of nanomaterials, dental implants, medical devices and clinical practice Presents a comprehensive reference on the subject that covers material fabrication and

the use of materials for all major diagnostic and therapeutic dental applications--repair, restoration, regeneration, implants and prevention Complements the editors' previous book on nanotechnology applications for dentistry

Silver Nanoparticles Benjamin Edwards
2017-01-01

Nanotechnology is a ground breaking scientific innovation with significant activities that includes the production and application of nanostructures. It is an emerging technology that will contribute to economic prosperity by providing solutions to challenges that face modern day economies for the sustainability of mankind's development. Its applications cut across many scientific boundaries, from electronics to medicine, to advance manufacturing, to cosmetics. Silver nanoparticles are the most widely produced and marketed nanoparticles. This is due to their outstanding plasmonic activity, anti-cancer activity, disinfectant, bacterial inhibitory and bactericidal effects compared with the other metal nanoparticles. This book provides new research on the advances and the many applications of silver nanoparticles.

Zeta Potential in Colloid Science - Robert J. Hunter 2013-09-03

Zeta Potential in Colloid Science: Principles and Applications covers the concept of the zeta potential in colloid chemical theory. The book discusses the charge and potential distribution at interfaces; the calculation of the zeta potential; and the experimental techniques used in the measurement of electrokinetic parameters. The text also describes the electroviscous and viscoelectric effects; applications of the zeta potential to areas of colloid science; and the influence of simple inorganic ions or more complex adsorbates on zeta potential. Physical chemists and people involved in the study of colloid science will find the book useful.

Silver Micro-Nanoparticles - Samir Kumar
2021-09-15

This book describes the different methodologies for producing and synthesizing silver nanoparticles (AgNPs) of various shapes and sizes. It also provides an in-depth understanding of the new methods for characterizing and

modifying the properties of AgNPs as well as their properties and applications in various fields. This book is a useful resource for a wide range of readers, including scientists, engineers, doctoral and postdoctoral fellows, and scientific professionals working in specialized fields such as medicine, nanotechnology, spectroscopy, analytical chemistry diagnostics, and plasmonics.

Silver Nanoparticles in the Environment - Jingfu Liu 2015-04-02

This comprehensive book covers the environmental issues concerning silver nanoparticles (AgNPs). Following an introduction to the history, properties and applications, the environmental concerns of AgNPs is discussed. In the second chapter, the separation, characterization and quantification of AgNPs in environment samples are described in detail. In the remaining parts of the book, the authors focus on the environmental processes and effects of AgNPs, with chapters on the pathway into environment, fate and transport, toxicological effects and mechanisms, as well as the environmental bioeffects and safety-assessment of AgNPs in the environment. This book is designed to describe current understanding of the environmental aspects of AgNPs. It provides a valuable resource to students and researchers in environmental science and technology, nanotechnology, toxicology, materials science and ecology; as well as to professionals involved in the production and consumption of AgNPs in various areas including catalysis, food products, textiles/fabrics, and medical products and devices. Jingfu Liu and Guibin Jiang are professors at State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences.

Reducing Agents in Colloidal Nanoparticles Synthesis - Stefanos Mourdikoudis 2021-05-14
Nanoparticles can be synthesised via a number of methods, including chemical vapor deposition, ball milling, laser ablation, thermal decomposition and chemical reduction. Chemical reduction is usually preferred, due to its ease and cost-effectiveness. There are several types of compound used as reducing agents in nanoparticle synthesis, and one recent

development is the use of biological entities as environmentally friendly reductants. This book will highlight the role of reducing agents in the chemical synthesis of nanoparticle systems, presenting the main categories of reducing agents, which vary on reactivity, selectivity, availability and toxicity. It will provide a comprehensive presentation of both modern and more conventional types of reagents. Emphasis will be given on the presentation not only of the functionality, but also of all the different advantages and limitations of each kind of reducing agent. With contributions from global

experts, this title will be appropriate for graduate students and researchers in nanochemistry, colloidal synthesis, inorganic chemistry, organometallic chemistry, chemical engineering, physical chemistry, materials science, biology and physics.

Colloidal Silver Today - Warren Jefferson 2003

Here are the latest findings on the effectiveness of this all-natural germ fighter. Includes the history of its use in the early 20th century along with instructions on how to make colloidal silver at home.