

Conductive Polymers And Plastics In Industrial Applications

Hazardous Chemicals Associated with Plastics in the Marine Environment **Conductive Polymers and Plastics** **Particulate Plastics in Terrestrial and Aquatic Environments** **Plastics in Medical Devices** *Plastics and the Environment* **Plastics and Environmental Sustainability** *Plastics* Plastic Waste and Recycling **Plastics** *Plastics and the Environment* **Plastics Packaging** **Plastics in the Circular Economy** **Brydson's Plastics Materials** **Plastics in the Aquatic Environment - Part II** Plastics in Automotive Engineering Plastics in the Aquatic Environment - Part I **Plastics and Sustainability** *Use of Recycled Plastics in Eco-efficient Concrete* A Practical Guide to Plastics Sustainability **Polymers and Plastics Technology Handbook** *Industrial Applications of Renewable Plastics* **The Complete Book on Medical Plastics** **Handbook of Plastics, Elastomers, and Composites** *Plastics in Packaging* **Precious Jewellery from Plastics** Plastic Waste for Sustainable Asphalt Roads *Plastics in the Environment* **Recycling Textile and Plastic Waste** **Our Plastic Problem and How to Solve It** **Plastics in Building Coatings** **Of Polymers And Plastics** *Introduction to Plastics Engineering* Plastics in Food Packaging **Environmental Stress Cracking of Plastics** **Applications of Polymers and Plastics in Medical Devices** **Plastic Soup** *The Effect of Sterilization on Plastics and Elastomers* **Plastic and Microplastic in the Environment** **Handbook of Plastics Testing and Failure Analysis** **Plastic Pollution and Marine Conservation**

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Plastics Packaging Feb 23 2022 The increasing importance of plastic materials in packaging makes it mandatory for everyone in this industry to command a basic understanding of the properties of the common packaging plastics. **Recycling Textile and Plastic Waste** Sep 08 2020 Edited papers from the

1995 conference Ecotextile - Wealth for Waste in Textiles, organised by Bolton Institute and the British Textile Technology Group. [A Practical Guide to Plastics Sustainability](#) Jun 17 2021 A Practical Guide to Plastics Sustainability: Concept, Solutions, and Implementation is a groundbreaking reference work offering a broad, detailed and highly

practical vision of the complex concept of sustainability in plastics. The book's aim is to present a range of potential pathways towards more sustainable plastics parts and products, enabling the reader to further integrate the idea of sustainability into their design process. It begins by introducing the context and concept of sustainability,

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discussing perceptions, drivers of change, key factors, and environmental issues, before presenting a detailed outline of the current situation with types of plastics, processing, and opportunities for improved sustainability. Subsequent chapters focus on the different possibilities for improved sustainability, offering a step-by-step technical approach to areas including design, properties, renewable plastics, and recycling and re-use. Each of these pillars are supported by data, examples, analysis and best practice guidance. Finally,

the latest developments and future possibilities are considered. Approaches the idea of sustainability from numerous angles, offering practical solutions to improve sustainability in the development of plastic components and products. Explains how sustainability can be applied across plastics design, materials selection, processing, and end of life, all set alongside socioeconomic factors. Considers key areas of innovation, such as eco-design, novel opportunities for recycling or re-use, bio-based polymers and new technologies. *Plastics and the*

Environment Sep 01 2022. Plastics offer a variety of environmental benefits. However, their production, applications, and disposal present many environmental concerns. Plastics and the *Environment* provides state-of-the-art technical and research information on the complex relationship between the plastic and polymer industry and the environment, focusing on the sustainability, environmental impact, and cost—benefit tradeoffs associated with different technologies. Bringing together the field's leading researchers,

Anthony Andrady's innovative collection not only covers how plastics affect the environment, but also how environmental factors affect plastics. The relative benefits of recycling, resource recovery, and energy recovery are also discussed in detail. The first of the book's four sections represents a basic introduction to the key subject matter of plastics and the environment; the second explores several pertinent applications of plastics with environmental implications—packaging, paints and coatings, textiles, and agricultural film use. The third section discusses

the behavior of plastics in some of the environments in which they are typically used, such as the outdoors, in biotic environments, or in fires. The final section consists of chapters on recycling and thermal treatment of plastics waste. Chapters include: Commodity Polymers Plastics in Transportation Biodegradation of Common Polymers Thermal Treatment of Polymer Waste Incineration of Plastics The contributors also focus on the effectiveness of recent technologies in mitigating environmental impacts, particularly those for managing plastics in the solid

waste stream. Plastic and design engineers, polymer chemists, material scientists, and ecologists will find Plastics and the Environment to be a vital resource to this critical industry.

Plastics Jun 29

2022 Plastics:

Microstructure and Applications is a key text for senior students studying the science and engineering of plastics materials (or polymers) and will serve as a valuable introduction to the fundamentals of polymer properties for those new to the field. Starting from microstructure and physical properties, the book covers the mechanical, chemical, transport and electrical

properties of plastics materials and also deals in detail with wider issues that today's engineers and materials scientists need, such as manufacturing processes and the design of plastics products. A thorough revision of the book for this 4th edition reflects advances in the field by including more detailed discussion of characterization techniques, crystallization and molecular structure, thermoplastic composites, 3D printing and electrical properties of plastics. The chapter on materials and shape selection covers sustainability, life cycle analysis and

waste disposal considerations for plastics materials. Provides introductory information for students of plastics technology, materials science and engineering, mechanical engineering and other fields. A useful introduction to the fundamentals of plastics for academic and industrial researchers from other fields. Includes substantial new coverage of microstructure and morphology of polymers; electrical properties of plastics; modern additive manufacturing and consideration of sustainability and life cycle analysis of plastic materials. Plastic Waste for

Sustainable Asphalt Roads Nov 10 2020 Waste polymers have been studied for various applications such as energy generation and biochemical production; however, their application in asphalt roads still poses some questions. Over the last decade, several studies have reported the utilization of waste plastics in roads using different methodologies and raw materials, but there is still significant inconsistency around this topic. What is the right methodology to recycle waste plastics for road applications? What is the correct type of waste plastics to be used in road

applications? What environmental concerns could arise from the use of waste plastics in road applications? **Plastic Waste for Sustainable Asphalt Roads** covers the various processes and techniques for the utilization of waste plastics in asphalt mixes. The book discusses the various material properties and methodologies, effects of various methodologies, and combination of various polymers. It also provides information on the compatibility between bitumen and plastics, final asphalt performance, and environmental challenges. Discusses the processes and techniques for

utilization of waste plastics in asphalt mixes. Features a life-cycle assessment of waste plastics in road surfaces and possible **Environmental Product Declarations (EPD)**. Includes examples of on-field usage through various case studies.

Environmental Stress Cracking of Plastics Mar 03 2020 Simultaneous action of stress and strain on plastics in contact with specific fluids causes the onset of cracking and embrittlement of plastic known as environmental stress cracking. Since this is responsible for 15% of all failures of plastics components,

environmental stress cracking has long been the subject of intensive research. This volume reviews factors that influence environmental stress cracking, and the state of knowledge regarding many families of plastics. Various types of damage, from disfiguring to catastrophic, are discussed in this volume, with the period of time over which the damage occurs. Plastics designers and specifiers will benefit from the wealth of information and data provided. **Conductive Polymers and Plastics** Dec 04 2022 This book is a collection of papers

by individuals in industry and academia on research and application development of conductive polymers and plastics. Conductive plastics are positioned to play an increasingly important role in affairs of mankind, specifically in the area of electrical and electronic conductivity. While general knowledge about conductive polymers and plastics has been available for many years, a true understanding of their application has only taken place in the last 3 to 4 years. This is attributed to advances in materials and processing techniques.

Engineers have only begun to explore the design freedom and economic benefits of specifying conductive polymers and plastics in industrial and business applications. This book is a key reference and guide to the use of conductive polymers and plastics. It is a summary of existing technologies, but also a look at future possibilities.

Polymers and Plastics Technology

Handbook May 17 2021 Plastics play a very important role in our daily lives. Throughout the world the demand for plastic, particularly plastic packaging,

continues to rapidly grow. Polymer technology deals with the manufacture and production of polymer and synthetic substances. Plastic is incredibly versatile and can be made from different ingredients, moulded into any shape, and put to a huge range of uses across industry and the rest of society, from carrier bags to electrical cables. Polymer energy system is an award winning, innovative, proprietary process to convert waste plastics into renewable energy. Some of the important example of polymers and plastics are polytetra fluoroethylene (PTFE), polyether

sulphone (PES), phenol-formaldehyde (PF), polyolefins, vinyl polymers, thermoplastic polyesters, polysulfones, poly(phenylene sulfide), etc. Polymers are the most rapidly growing sector of the materials industry. The Indian plastic industry has taken great strides. In the last few decades, the industry has grown to the status of a leading sector in the country with a sizable base. The material is gaining notable importance in different spheres of activity and the per capita consumption is increasing at a fast pace. Continuous advancements and developments in

polymer technology, processing machineries, expertise, and cost effective manufacturing is fast replacing the typical materials in different segments with plastics. On the basis of value added, Indian share of plastic products industry is about 0.5% of national GDP. The major contents of the book are properties and applications of speciality plastics, thermoset plastics, applications of recycle plastics, introduction of polymer science, polymer additives, blends and composites, commodity thermoplastics and fibres etc. This book also consists of raw material

suppliers for plastic and plastic products, manufacturers of plastic, processing machinery, plastics processing machinery and equipment (foreign), machinery and equipment for plastic converting, extruders and extrusion lines, injection moulding machines, presses and accessories, blow moulding and thermoforming machines etc. The book has been designed with the idea of blending and integrating basic polymer science and the technology of plastics into a composite structure. This book is an outcome of an endeavour in the direction of polymer

and plastic processing. It would be of immense use to entrepreneurs, consultants, students and libraries etc.

Plastic Pollution and Marine

Conservation Aug 27 2019 Plastic Pollution and Marine Conservation: Approaches to Protect Biodiversity and Marine Life provides comprehensive knowledge on the consequences of plastic waste in marine environments at different levels, ranging from ecological and biological, to social, economic and political. The book synthesizes historical information, gaps in

current knowledge, and recent discoveries by illustrating the main stages that made plastics a global issue for ocean ecosystems and their wildlife. Written by international experts on marine pollution, marine biology, and management of environmental resources, this book explores the main topics of marine plastic pollution such as input quantification, polluting sources, ultimate fate, ecological consequences, and more. This an important resource for a wide audience, including marine conservationists, environmental managers, decision-

makers, NGOs, private companies, and activists working to combat plastics in our seas and oceans.

Illustrates the evolution of plastics, from revolutionary materials to global environmental emergency Discusses marine plastic pollution with scientific rigor and easy language that is supported by graphics and tables Led by a team of editors with expertise in biology, pollution, conservation and policies of marine wildlife, biodiversity and ecosystems

Plastics in the Circular Economy

Jan 25 2022 Our environment is negatively affected by the way plastics

are currently designed. Plastic waste is a growing problem. One such solution would be to redesign plastics for reusability and recyclability. This book makes the topic of plastic design approachable for students and career starters alike, describing the nature and chemistry of polymers as well as how to process them in an environmentally friendly method pre- and post-use. **Handbook of Plastics Testing and Failure Analysis** Sep 28 2019 Written in easy-to-read and - use format, this book provides a strong training resource and reference for

product designers using plastics in their products - helping them identify, quantify, and confirm whether problems are related to product design or process. • Updates coverage of data analysis techniques and examples and expands coverage of failure analysis, key because of increased litigation related to product liability • Overviews plastic testing methods and the framework to investigate causes of plastic part failure • Provides a strong training resource and reference for product designers using plastics in their products • Features a video tour of a plastics testing labroatory

on a companion website and has a separate manual of problems and solutions that are appropriate for college professors using the book as a class textbook [Plastic Waste and Recycling](#) May 29 2022 Plastic Waste and Recycling: Environmental Impact, Societal Issues, Prevention, and Solutions begins with an introduction to the different types of plastic materials, their uses, and the concepts of reduce, reuse and recycle before examining plastic types, chemistry and degradation patterns that are organized by non-degradable plastic, degradable and biodegradable plastics,

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biopolymers and bioplastics. Other sections cover current challenges relating to plastic waste, explain the sources of waste and their routes into the environment, and provide systematic coverage of plastic waste treatment methods, including mechanical processing, monomerization, blast furnace feedstocks, gasification, thermal recycling, and conversion to fuel. This is an essential guide for anyone involved in plastic waste or recycling, including researchers and advanced students across plastics engineering, polymer science, polymer chemistry, environmental

science, and sustainable materials. Presents actionable solutions for reducing plastic waste, with a focus on the concepts of collection, re-use, recycling and replacement. Considers major societal and environmental issues, providing the reader with a broader understanding and supporting effective implementation. Includes detailed case studies from across the globe, offering unique insights into different solutions and approaches.

Hazardous Chemicals Associated with Plastics in the Marine Environment Jan 05 2023 This volume consists of

15 chapters and focuses on hazardous chemicals, how they are associated with plastics, and their environmental risks. It includes background information on plastics and additives chemistry, and their observed or potential effects on living organisms as well as the oceanographic aspects of marine debris dispersion. The respective chapters provide insights into the sorption/desorption of chemicals in and out of plastics, the mechanisms and kinetics, but also the scale of the concentrations of chemicals found in marine debris, particularly in microplastics. The occurrence of the

various chemicals is analyzed, as well as the distribution profiles of the chemicals in microplastics throughout the world's oceans. The implications of the fact that plastics carry within them several chemicals are discussed in detail. In closing, new research topics that warrant further attention are identified. The book will appeal to all scientists who are already working or interested in starting to work on the topic of marine debris, as well as policymakers, NGOs and the broader informed public.

Plastic and Microplastic in the Environment

Oct 29 2019

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Thought-provoking discussions of the challenges posed by—and potential solutions to—plastic and microplastic pollution In *Plastic and Microplastic in the Environment: Management and Health Risks*, a team of distinguished environmental researchers delivers an up-to-date exploration of plastic and microplastic environmental contamination, conventional and advanced plastics management techniques, and the policies adopted across the globe to combat the phenomenon of plastics contamination. Containing a balanced focus on

both conventional plastics and microplastics, this book discusses the potential health issues related to plastic and microplastic infiltration in a variety of global environments and environmental media, including freshwater environments, oceanic environments, soil and sediment, and air. Insightful treatments of commercial and social issues, including the roles of corporate social responsibility initiatives and general education in the fight against plastic and microplastic pollution, are provided as well. *Plastic and Microplastic in the*

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Environment also includes: A thorough introduction to plastic debris in global environments, including its accumulation and disintegration Comprehensive explorations of policies for strengthening recyclable markets around the world Practical discussions of the prevalence of microplastics in the marine environment, air, soil, and other environmental media In-depth examinations of wastewater treatment plants as a potential source point of microplastics, as well as conventional and advanced

microplastic particle removal technologies Perfect for academics, postgraduates and advanced undergraduates in fields related to environmental science and plastics, Plastic and Microplastic in the Environment: Management and Health Risks will also earn a place in the libraries of professionals working in the plastics industries and environmental policymakers. **Plastic Soup** Jan 01 2020 Plastics have transformed every aspect of our lives. Yet the very properties that make them attractive--they are cheap to make, light, and durable--spell disaster when

trash makes its way into the environment. Plastic Soup: An Atlas of Ocean Pollution is a beautifully-illustrated survey of the plastics clogging our seas, their impacts on wildlife and people around the world, and inspirational initiatives designed to tackle the problem. With striking photography and graphics, Plastic Soup brings plastic pollution to brilliant life for readers. According to some estimates, if we continue on our current path, the oceans will contain more plastic than fish by the year 2050. Created to inform and inspire readers, Plastic Soup is a critical

tool in the fight to reverse this trend. Plastics in the Aquatic Environment - Part I Sep 20 2021 This book offers a comprehensive review of how plastic pollution is affecting fresh and marine waters, and what the current challenges in plastic waste assessment and management in the aquatic environment are. Plastic waste comprises particles with heterogeneous physicochemical properties such as large size-range, different shapes and polymer types with various additives determining their environmental fate and risk. This complexity raises several open

research questions which are explored in this book. Examples are the plastic uptake by aquatic organisms, degradation processes as well as sources and sinks in the environment. Readers will discover real case studies of plastic pollution detection and management in different parts of the world, including Asia, America and Europe, which provide an integrated overview of the global scope of this issue. This book and the companion volume Plastics in the Aquatic Environment - Part II: Stakeholders' Role Against Pollution are valuable resources to students, researchers,

policymakers and environmental managers interested in plastic pollution and working towards its reduction.

Plastics and Environmental Sustainability Jul 31 2022 Survey's the issues typically raised in discussions of sustainability and plastics Discusses current issues not covered in detail previously such as ocean litter, migration of additives into food products and the recovery of plastics Covers post-consumer fate of plastics on land and in the oceans, highlighting the environmental impacts of disposal methods Details toxicity of plastics, particularly as it

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applies to human health Presents a clear analysis of the key plastic-related issues including numerous citations of the research base that supports and contradicts the popularly held notions

The Effect of Sterilization on Plastics and Elastomers Nov 30 2019 The Effect of Sterilization Methods on Plastics and Elastomers, Fourth Edition brings together a wide range of essential data on the sterilization of plastics and elastomers, thus enabling engineers to make optimal material choices and design decisions. The data tables in this book enable engineers and scientists to

select the right materials and sterilization method for a given product or application. The book is a unique and essential reference for anybody working with plastic materials that are likely to be exposed to sterilization methods, be it in medical device or packaging development, food packaging or other applications. Presents essential data and practical guidance for engineers and scientists working with plastics in applications that require sterile packaging and equipment Updated edition removes obsolete data, updates manufacturers, verifies data

accuracy, and adds new plastics materials for comparison Provides essential information and guidance for FDA submissions required for new medical devices

[Plastics in Automotive Engineering](#) Oct 22 2021

Plastics in Medical Devices Oct 02 2022 No book has been published that gives a detailed description of all the types of plastic materials used in medical devices, the unique requirements that the materials need to comply with and the ways standard plastics can be modified to meet such needs. This book will start with an introduction to

medical devices, their classification and some of the regulations (both US and global) that affect their design, production and sale. A couple of chapters will focus on all the requirements that plastics need to meet for medical device applications. The subsequent chapters describe the various types of plastic materials, their properties profiles, the advantages and disadvantages for medical device applications, the techniques by which their properties can be enhanced, and real-world examples of their use. Comparative tables will allow readers to find the right classes of materials

suitable for their applications or new product development needs. *Plastics in the Environment* Oct 10 2020 *Plastics in the Environment* is a collection of reviewed and relevant research chapters, offering a comprehensive overview of recent developments in the field of plastic pollution and how it is affecting the environment. The book comprises single chapters authored by various researchers and edited by an expert active in the research area. All chapters are complete in themselves but united under a common research study topic. This publication aims at providing a

thorough overview of the latest research efforts by international authors on the trending topic of plastics in the environment and opens new possible research paths for further novel developments. **Handbook of Plastics, Elastomers, and Composites** Feb 11 2021 *Handbook of Plastics, Elastomers, and Composite*, 4th Edition, places state-of-the-art information on plastics, elastomers, and composites at your fingertips. The revised and updated edition presents all of the fundamental information required to understand the

large number of materials and material forms, and provides the necessary data and guidelines for optimal use of these materials and forms in the broad range of industrial products, ensuring the highest performance from materials.

Thoroughly revised, this new edition features the latest advance in properties of plastics, elastomers, and composites while providing practical examples throughout.

Thermosets, plastics in coatings and finishes, thermoplastics and plastics in packaging are covered.

Plastics in Food Packaging Apr 03

2020 Abundant, detailed information on how plastics are used in modern food distribution and the qualitative and quantitative linkages between food requirements and plastics' fabrication and performance.

Covers technical properties, fabrication methods, economics, design calculations, regulations, use of *Plastics and the Environment* Mar 27 2022 Plastic has become a ubiquitous part of modern life. A cheap, lightweight material, it is used in everything from food packaging to consumer electronics and microbeads in cosmetic products.

However, we are becoming increasingly aware of the problems our reliance on plastic is causing in the environment. For example, recent campaigns have highlighted the build-up of microbeads in the marine environment and the damage this is doing to wildlife, and the problem of marine litter, often in very remote locations. There are also concerns over exposure to plasticisers and their possible consequences for health. The plastics industry is under increasing pressure, not only from the government and environmental groups, but also from consumers, to

improve the environmental impact of their products. This book presents an introduction to the uses of plastics and an overview of how they interact with the environment. It is a valuable resource for students studying environmental science as well as researchers working in the plastics industry, and policy makers and regulators concerned with waste disposal and environmental planning and conservation.

Use of Recycled Plastics in Eco-efficient Concrete
Jul 19 2021 Use of Recycled Plastics in Eco-efficient Concrete looks at the processing of plastic waste,

including techniques for separation, the production of plastic aggregates, the production of concrete with recycled plastic as an aggregate or binder, the fresh properties of concrete with plastic aggregates, the shrinkage of concrete with plastic aggregates, the mechanical properties of concrete with plastic aggregates, the toughness of concrete with plastic aggregates, modulus of elasticity of concrete with plastic aggregates, durability of concrete with plastic aggregates, concrete plastic waste powder with enhanced neutron radiation shielding,

and more, thus making it a valuable reference for academics and industrial researchers. Describes the main types of recycled plastics that can be applied in concrete manufacturing Presents, for the first time, state-of-the-art knowledge on the properties of conventional concrete with recycled plastics Discusses the technological challenges for concrete manufactures for mass production of recycled concrete from plastic waste **The Complete Book on Medical Plastics** Mar 15 2021 Plastics currently form one of the most important components of the

medical industry. Medical device designers and engineers increasingly prefer plastics to conventional packaging materials such as metals owing to superior flexibility offered by plastics in fabrication process. Advancements in sterilization techniques shift towards disposable devices, development of enhanced plastic materials, and technological innovations are factors driving the overall market growth and expansion. The development of novel materials such as biocompatible polymers for use in medical implants

will furthermore provide the required impetus for the global medical plastics market. Every day, plastics are involved in critical surgeries, life saving efforts, and routine medical procedures. Plastic materials can be sterilized hundreds of times without degradation. Lightweight plastics are used to form replacement joints, non surgical supports, and therapy equipment. Clear plastics provide visibility for transfusions, surgeries, and diagnostic equipment of all kinds and plastics can be machined, molded, or formed into almost any shape imaginable. The use of plastics

in health care field encompasses several distinct markets. Plastic is used on a large scale as medical devices like disposable syringes, optical and dental products, heart valves, contact lenses and many more medical products. This way plastic has very importance in making medical devices. The medical plastics industry is set to expand rapidly over the next decade taking up increasing proportions of GDP, as countries provide healthcare to an ageing population, access to medicine expands in developing regions and new technology is developed. This

book basically deals with significance of packaging for pharmaceuticals & medical industry, tablets & capsules liquids, creams and ointments, OPVC, OPP and oriented and non oriented pet containers, blister trays for ampoules, cartridge tubes etc., shrink packaging and stretch wrapping, conducting health based risk assessments of medical materials, performance properties of metallocene polyethylene, EVA, and flexible PVC films, polyurethane thin film welding for medical device applications, polyurethane film as an alternative to PVC and latex, opportunities for PVC replacement in

medical solution containers, thermoplastic silicone urethane copolymers : a new class of biomedical elastomers, selecting materials for medical products : from PVC to metallocene polyolefins, injection molding engineering plastics, assessing the performance and suitability of parylene coating etc. The present book contains the important information of plastics in medical field and their uses in various ways. This is very useful book for entrepreneurs, researchers, technocrats and technical institutions. **Particulate Plastics in**

Terrestrial and Aquatic Environments Nov 03 2022 The manufacture of plastic as well as its indiscriminate disposal and destruction by incineration pollutes atmospheric, terrestrial, and aquatic ecosystems. Synthetic plastics do not break down; they accumulate in the environment as macro-, micro-, and nanoplastics. These particulate plastics are a major source of pollutants in soil and marine ecosystems. Particulate Plastics in Terrestrial and Aquatic Environments provides a fundamental understanding of the sources of these plastics and the

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threats they pose to the environment. The book demonstrates the ecotoxicity of particulate plastics using case studies and offers management practices to mitigate particulate plastic contamination in the environment. Features · Describes physical and chemical properties of particulate plastics in terrestrial and aquatic ecosystems · Presents information on characteristics of particulate plastics as impacted by weathering processes · Provides numerous approaches for managing particulate plastic contamination · Identifies sources of

particulate plastics in the environment; distribution and characteristics of particulate plastics; and management strategies of particulate plastics. Written by a global team of scientists, this book is for researchers in the fields of environmental safety and waste management or individuals interested in the impact of particulate plastics on environmental health.

Plastics Apr 27 2022 Plastics are high-performance materials of wide use in the built environment. Their versatile technical properties are particularly fascinating. A broad range of form-giving and finishing

processes makes plastic especially interesting for complex geometries in combination with digital planning processes. Following the pioneering plastic structures of the 1970s, a number of spectacular buildings have in recent years highlighted the outstanding technical and aesthetic potential of the material. Until now, however, there has been no systematic treatment of the use of plastic in architecture. This book seeks to fill that gap by providing an introduction to the structural and design possibilities of plastic. It introduces the material and its

specific characteristics, describes various types of plastic in terms of their relevance for building, explains processing technologies and presents typical products and components. A concise presentation of twenty-five international built projects - organized by the type of application and the plastic involved - documents the broad range of plastic in architecture. Finally, a look ahead at the future describes the current state of the art in materials research.

Plastics and Sustainability Aug 20 2021 Clearly lays out the issues

related to plastics' effects on the environment, while also serving as a practical, non-academic guide for making sustainability decisions about plastics recycling and the newest bio-based plastics. Company managers, product developers, policy makers, environmental researchers, and plastics industry engineers are under increasing pressure to find ways of minimizing the environmental footprint of plastic products. This accessible book is designed to help readers understand the life-cycle impacts of various plastics, clarifying the technical research and practical arguments

to show when bio-based and recycled plastics might be useful options for reducing the overall energy consumption, greenhouse gas emissions, and waste associated with traditional plastics. *Plastics and Sustainability* compares traditional fossil fuel-based plastics with bio-based plastics in terms of properties, environmental impacts, and costs -- indicating what the most effective approaches could be for using recycled, biodegradable, or various bio-based materials. The book makes objective comparisons between bioplastics and all

commonly used plastics, focusing on how they affect production economics, product requirements, and retailer and consumer needs. It incorporates research concerning life-cycle assessment, production techniques, and commercial applications, and presents "green" guidelines about product design, recycling, processing efficiency, and material selection. The book also reports on recent industry developments and commercial trends in an effort to synthesize conclusions that are necessary for finding the right balance between bio-based and

fossil-fuel based plastic products. Check out the author's blog at <http://www.plastech.biz/blog>
Coatings Of Polymers And Plastics Jun 05

2020 Surveying recent developments in coating polymers and plastics in the automotive industry, this book examines proper materials selection, basic processing mechanics, process selection based on cost and coating mechanics, molding, and performance and durability assessments. Techniques for salvaging plastics from used vehicles are highlighted, and North American and European techniques for coating plastics in the automotive industry are compared. The editors are members of the Federation of Societies for Coatings

Technology.
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(booknews.com).

Plastics in

Building Jul 07

2020 The evaluation and use of plastics in the construction industry are explained. The contributors offer extensive, timely, and thoroughly researched data on the chemistry, properties, functions, engineering behavior, and specific applications of plastics to building requirements. The major subjects discussed in depth are--(1) the role of plastics in construction, (2) the plastic materials, (3) building codes and

regulations, (4) construction aids, (5) structural fiber-glass reinforced plastics, (6) reinforced plastic shell structures, (8) paints, sealants, flooring, and roofing, (9) plastic for walls and doors, (10) plastic foams in thermal insulation, (11) pipe and plumbing, (12) utilities, (13) lighting, (14) permanent fixtures, and (15) the use of plastics in other countries. (Tc)

Industrial Applications of Renewable Plastics

Apr 15 2021

Industrial Applications of Renewable Plastics: Environmental, Technological, and Economic Advances provides practical information to help engineers and

materials scientists deploy renewable plastics in the plastics market. It explores the uses, possibilities, and problems of renewable plastics and composites to assist in material selection and rejection. The designer's main problems are examined, along with basic reminders that deal with structures and processing methods that can help those who are generally familiar with metals understand the unique properties of plastic materials. The book offers a candid overview of main issues, including conservation of fossil resources, geopolitical considerations, greenhouse effects,

competition with food crops, deforestation, pollution, and disposal of renewable plastics. In addition, an overview of some tools related to sustainability (Life cycle assessments, CO2 emissions, carbon footprint, and more) is provided. The book is an essential resource for engineers and materials scientists involved in material selection, design, manufacturing, molding, fabrication, and other links in the supply chain of plastics. The material contained is of great relevance to many major industries, including automotive and transport,

packaging, aeronautics, shipbuilding, industrial and military equipment, electrical and electronics, energy, and more. Provides key, enabling information for engineers and materials scientists looking to increase the use of renewable plastic materials in their work Presents practical guidance to assist in materials selection, processing methods, and applications development, particularly for designers more familiar with other materials, such as metals Includes a candid discussion of the pros and cons of using renewable plastics, considering the

technical, economic, legal, and environmental aspects

Precious Jewellery from Plastics

Dec 12 2020 Whilst many jewellers and designers are working with plastics these days, there is very little information available about the methods and techniques required to manipulate them for jewellery-making purposes. This book includes instructions and advice on marking out and cutting, joining, laser and water-jet cutting, welding, curling, heating and colouring. Various methods for finishing plastic professionally are also explored, and the book features

an inspirational gallery of works by contemporary artists, showcasing a fantastic range of results. With clear, step-by-step instructions, and full-colour images throughout, *Precious Jewellery from Plastics* requires no previous knowledge and covers everything you need to know about working with plastics, including polypropylene, acrylic, nylon, polystyrene and PVC. *Precious Jewellery from Plastics* is a comprehensive guide to working with plastic for those who are keen to experiment with the medium for the first time, or even those with more experience who

would like to expand their repertoire of skills. *Introduction to Plastics Engineering* May 05 2020 *Introduction to Plastics Engineering* provides a single reference covering the basics of polymer and plastics materials, and their properties, design, processing and applications in a practical way. The book discusses materials engineering through properties formulation, combining part design and processing to produce final products. This book will be a beneficial guide to materials engineers developing new

formulations, processing engineers producing those formulations, and design and product engineers seeking to understand the materials and methods for developing new applications. The book incorporates material properties, engineering, processing, design, applications and sustainable and bio based solutions. Ideal for those just entering the industry, or transitioning between sectors, this is a quick, relevant and informative reference guide to plastics engineering and processing for engineers and plastics practitioners. Provides a single

unified reference covering plastics materials, properties, design, processing and applications Offers end-to-end coverage of the industry, from formulation to part design, processing, and the final product Serves as an ideal introductory book for new plastics engineers and students of plastics engineering Provides a convenient reference for more experienced practitioners

Our Plastic Problem and How to Solve It Aug 08 2020 Plastic pollution is a global problem that defies a singular solution. Our Plastic Problem and How to Solve It considers plastic's

harm to the environment, from its production to its disposal, and offers a spectrum of solutions that require action by local and federal governments, businesses and non-profits, and individuals. Using specific examples and case studies, the book describes the history and chemistry of plastic, illustrates its harms, and points toward specific legislation and policies to offer concrete solutions. Plastic pollution is ubiquitous and has impacts on soil, food, air, and water. To solve our plastic problem, collaboration across disciplines will be critical; innovations in science, law, and design will be

essential. The book demonstrates the need to approach environmental problems from an interdisciplinary lens, and will benefit anyone interested in learning more about the harms and solutions associated with plastic pollution.

Applications of Polymers and Plastics in Medical Devices Jan 31 2020 Applications of Polymers and Plastics in Medical Devices: Design, Manufacture, and Performance is a comprehensive guide to plastic materials for medical devices, covering fundamentals, materials, applications and regulatory

requirements. Sections cover the role of plastics in medical devices, socioeconomic factors, the classification of medical devices. The performance of, medical grades and suppliers of polymer materials, which are categorized by performance level are also explored, along with manufacturing processes for device components, including extrusion, casting, injection molding and assembly processes. The book then covers applications in detail, examining each device and the role that polymers and plastics play in its construction and function. This is an essential resource

for engineers, R&D, and other professionals working on plastics for medical devices and those in the plastics industry, medical device manufacturing, pharmaceuticals, packaging and biotechnology. In an academic setting, this book is of interest to researchers and advanced students in medical plastics, plastics engineering, polymer science, mechanical engineering, chemical engineering, biomedical engineering and materials science. Offers systematic coverage of the major classes of polymers used in medical devices, including

properties, characteristics, performance, medical grades and suppliers Reviews regulatory requirements of the FDA and other global agencies, as well as considering quality control and socioeconomic factors Includes the latest advances in plastics for medical devices, such as novel applications, use of bio-based polymers, and processing of reusable medical devices
Plastics in Packaging Jan 13 2021 This report provides an overview of the plastic packaging supply chain from materials to disposal. Information is included on market sizes and trends

relevant to this chain. It includes a review of key factors affecting the industry, such as the need for recycling, and new developments in plastics used in packaging. This report includes a description of plastic material types and properties relevant to packaging.

Tables of comparative data are included.

Plastics in the Aquatic Environment - Part II

Nov 22 2021 This book reviews comprehensively the opportunities and responsibilities of science, society and politics to combat plastic pollution in marine and freshwaters. It provides insights on

what information is needed, and from whom, and it outlines policies proposed by various institutions including OSPAR, HELCOM and the European Union. Plastic waste has become a global threat to the aquatic environment that does not stop at country borders. Meanwhile, there are many efforts in science, industry, commerce and governments to tackle the problem worldwide. School education, NGO public actions, voluntary trade reduction measures, governmental management options and governmental regulatory actions are part of the

portfolio of efforts to deal with the problem. Together with the companion volume *Plastics in the Aquatic Environment - Part I: Current Status and Challenges*, it provides scientists, policymakers and environmental managers with essential reference information on how this problem is being solved, what challenges and barriers are expected and how they can be overcome.

Brydson's Plastics Materials

Dec 24 2021 Brydson's *Plastics Materials*, Eighth Edition, provides a comprehensive overview of the commercially available plastics materials that bridge the gap

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between theory and practice. The book enables scientists to understand the commercial implications of their work and provides engineers with essential theory. Since the previous edition, many developments have taken place in plastics materials, such as the growth in the commercial use of sustainable bioplastics, so this book brings the user fully up-to-date with the latest materials, references, units, and figures that have all been thoroughly updated. The book remains the authoritative resource for engineers, suppliers, researchers,

materials scientists, and academics in the field of polymers, including current best practice, processing, and material selection information and health and safety guidance, along with discussions of sustainability and the commercial importance of various plastics and additives, including nanofillers and graphene as property modifiers. With a 50 year history as the principal reference in the field of plastics material, and fully updated by an expert team of polymer scientists and engineers, this book is essential reading for researchers and practitioners in this

field. Presents a one-stop-shop for easily accessible information on plastics materials, now updated to include the latest biopolymers, high temperature engineering plastics, thermoplastic elastomers, and more Includes thoroughly revised and reorganised material as contributed by an expert team who make the book relevant to all plastics engineers, materials scientists, and students of polymers Includes the latest guidance on health, safety, and sustainability, including materials safety data sheets, local regulations, and a discussion of recycling issues