
Dendrimers And Other Dendritic Polymers

Dendrimers in Medicine and Biotechnology

Hyperbranched Polymers

Handbook of Polymer Synthesis, Characterization, and Processing

The Design, Synthesis, and Evaluation of Novel Dendritic Polymers as Resist Materials for Next Generation Lithography

Smart Inorganic Polymers

Dendrimers, Dendrons, and Dendritic Polymers

Dendrimers III

Modern Styrenic Polymers

Soft Nanoparticles for Biomedical Applications

Dendrimers in Nanomedicine

Dendrimer-Based Nanotherapeutics

Hyperbranched Polydendrons

Dendrimer Chemistry

Handbook of Biodegradable Polymers

Dendrimers in Biomedical Applications

Polymers in Nanomedicine

Dendrimer Chemistry

Dendritic Molecules

Multivalency

Dendrimer Catalysis

Dendrimers, Dendrons, and Dendritic Polymers

Principles of Polymers

Dendrimers for Drug Delivery

The Properties of Dendritic Polymers I: Generation 5 Poly(amidoamine) Dendrimers

Phosphorous Dendrimers in Biology and Nanomedicine

Dendrimers III

Dendrimers

Special Issue on Dendrimers and Dendritic Polymers

Silicon-Containing Dendritic Polymers

Cancer Therapeutics And Imaging: Molecular And Cellular Engineering And Nanobiomedicine

Dendrimers and Other Dendritic Polymers

Materials Science of Polymers

Dendrimers: A Themed Issue in Honor of Professor Donald A. Tomalia on the Occasion of His 80th Birthday

Nanobiomaterials

Advances in Dendritic Macromolecules

Dendrimers and Other Dendritic Polymers. Wiley Series in Polymer Science

The Properties of Dendritic Polymers 2: Generation Dependence of the Physical Properties of Poly(amidoamine) Dendrimers

Dendrimers, Dendrons, and Dendritic Polymers

DECKER WILSON

Dendrimers in Medicine and Biotechnology Springer

Following the first two volumes "Dendrimers" (TCC vol. 197) and "Dendrimers II" (TCC vol. 210), the third volume dealing with this topic is now appearing in print (the "tetralogy" on dendrimers will soon be completed with the fourth volume). The present volume comprises a collection of up-to-date reviews written by renowned pioneers of research in the dendrimer field, three of whom lectured at the 1. International Dendrimer Symposium (IDS-1 1999) in Frankfurt. A focus of this volume is the variety of material properties of soft and shape-persistent dendrimers. As its predecessors did, this volume breaks through the frontiers to neighboring disciplines and, in an interdisciplinary approach, addresses topics such as polydisperse, hyperbranched macromolecules (dendritic polymers), the analysis of shape and density by small-angle scattering techniques, finely dispersed metals (dendrimers as catalysts), and nanotechnology close to potential applications.

Hyperbranched Polymers Royal Society of Chemistry

Dendrimers are a class of highly branched molecules that combine the properties of polymers and small discrete molecules. One classified among the exotic molecules of chemistry, dendrimers have attracted considerable attention in recent years, as their unique host/guest properties and their capability of being functionalized in the periphery as well in the core have led to new materials with a great potential for applications. This volume presents the state of art in this blossoming area, written by pioneers in the fields. Covering the synthetic, supramolecular, stereochemical, host/guest and polymer chemistry of dendritic and hyperbranched molecules, this volume explains both theoretical and practical aspects, including chirality reactivity, mechanism, material properties and biological relevance.

Handbook of Polymer Synthesis, Characterization, and Processing CRC Press

An overview of the latest advances in the synthesis, characterization and applications of dendrimers and other complex dendritic architectures.

The Design, Synthesis, and Evaluation of Novel Dendritic Polymers as Resist Materials for Next Generation Lithography Wiley-VCH

Connects fundamental knowledge of multivalent interactions with current practice and state-of-the-art applications Multivalency is a widespread phenomenon, with applications spanning supramolecular chemistry, materials chemistry, pharmaceutical chemistry and biochemistry. This advanced textbook provides students and junior scientists with an excellent introduction to the fundamentals of multivalent interactions, whilst expanding the knowledge of experienced researchers in the field. Multivalency: Concepts, Research & Applications is divided into three parts. Part one provides background knowledge on various aspects of multivalency and cooperativity and presents practical methods for their study. Fundamental aspects such as thermodynamics, kinetics and the principle of effective molarity are described, and characterisation methods, experimental

methodologies and data treatment methods are also discussed. Parts two and three provide an overview of current systems in which multivalency plays an important role in chemistry and biology, with a focus on the design rules, underlying chemistry and the fundamental principles of multivalency. The systems covered range from chemical/materials-based ones such as dendrimers and sensors, to biological systems including cell recognition and protein binding. Examples and case studies from biochemistry/bioorganic chemistry as well as synthetic systems feature throughout the book. Introduces students and young scientists to the field of multivalent interactions and assists experienced researchers utilising the methodologies in their work Features examples and case studies from biochemistry/bioorganic chemistry, as well as synthetic systems throughout the book Edited by leading experts in the field with contributions from established scientists Multivalency: Concepts, Research & Applications is recommended for graduate students and junior scientists in supramolecular chemistry and related fields, looking for an introduction to multivalent interactions. It is also highly useful to experienced academics and scientists in industry working on research relating to multivalent and cooperative systems in supramolecular chemistry, organic chemistry, pharmaceutical chemistry, chemical biology, biochemistry, materials science and nanotechnology.

Smart Inorganic Polymers Springer

This book describes the latest advancements in molecular and cellular engineering approaches in addition to nanotechnology for cancer therapeutics and imaging. It also provides an excellent background and state-of-the-art developments in the fields of drug and gene delivery, engineering nanoparticles for therapy and diagnostics, and cancer imaging techniques. The contents of this book include chapters on cutting-edge science in molecular and cellular engineering and nanotechnology as applied to therapeutics and imaging in cancer diseases. The chapters also provide a comprehensive overview on gene therapy and delivery methods for cancer treatment, oral drug delivery and barriers, cancer imaging for diagnostics and therapy, and the latest developments in these fields.

Dendrimers, Dendrons, and Dendritic Polymers Royal Society of Chemistry

Functional Polymer Conjugates for Medicinal Nucleic Acid Delivery, by Ernst Wagner Biodegradable Nanoparticles as Vaccine Adjuvants and Delivery Systems: Regulation of Immune Responses by Nanoparticle-Based Vaccine, by Takami Akagi, Masanori Baba and Mitsuru Akashi Biodegradable Polymeric Assemblies for Biomedical Materials, by Yuichi Ohya, Akihiro Takahashi and Koji Nagahama PEGylation Technology in Nanomedicine, by Yutaka Ikeda and Yukio Nagasaki Cytocompatible Hydrogel Composed of Phospholipid Polymers for Regulation of Cell Functions, by Kazuhiko Ishihara, Yan Xu and Tomohiro Konno Design of Biointerfaces for Regenerative Medicine, by Yusuke Arima, Koichi Kato, Yuji Teramura and Hiroo Iwata Advances in Tissue Engineering Approaches to Treatment of Intervertebral Disc Degeneration: Cells and Polymeric Scaffolds for Nucleus Pulposus Regeneration, by Jeremy J. Mercuri and Dan T. Simionescu Functionalized Biocompatible Nanoparticles for Site-Specific Imaging and Therapeutics, by Ranu K. Dutta, Prashant K. Sharma, Hisatoshi Kobayashi and Avinash C. Pandey

Dendrimers III CRC Press

Dendrimers are important molecules that are currently undergoing investigation for use in a variety of different biomedical applications. This book explores the use of dendrimers for a variety of potential functions, including antiamyloidogenic agents, drug delivery systems, nucleic acid and RNA delivery vectors and to produce hybrid fibre platforms for nanotechnology. Following the work of COST action TD0802, the main objective of which is to improve existing therapies and find new drugs based on dendrimers, the book will provide comprehensive coverage of dendrimer applications. Coverage includes modelling and molecular dynamic studies of dendrimers and dendrons, anionic dendrimer polymers, cationic carbosilane dendrimers and self-assembled multivalent dendrimers. Providing clear indications for future research and applications, this text will appeal to chemists, biologists and materials scientists, working in both academia and industry.

Modern Styrenic Polymers Royal Society of Chemistry

Written by internationally acclaimed authors, this textbook contains everything you need to know about this versatile class of compounds. Starting with a historical overview, definitions and other fundamentals, it goes on to look at characterization, analysis and properties of dendrimers. While the focus is on synthesis and applications, it also contains chapters on analytics and other applications. Essential reading for organic and polymer chemists, undergraduate and graduate students, students and lecturers in chemistry.

Soft Nanoparticles for Biomedical Applications Springer Science & Business Media

Nanomedicine can take advantage of the recent developments in nanobiotechnology research for the creation of platforms with superior drug carrier capabilities, selective responsiveness to the environment, unique contrast enhancement profiles, and improved accumulation at the disease site. This book provides a broad glimpse of how various dendritic nanomaterials have been designed and used as efficient tools for nanomedicine. It comprises a pedagogic introduction to dendrimers and hyperbranched systems and their classical and accelerated syntheses through cutting-edge methodologies. The chapters on dendronized magnetic nanoparticles as theranostics, dendrimers in theory (molecular simulations), siRNA delivery with dendrimers, and dendrimers for image-guided therapy, combined with chapters focused on specific types of dendrimers or hyperbranched structures, detail the cutting-edge research in nanomedicine. Finally, a detailed chapter on issues related to the pharmacokinetics and biodistribution of dendrimers helps choose the right structures for successful transfer from bench to bedside. This book will appeal to those involved in nanobiotechnology, macromolecular science, cancer therapy, tissue repair, and siRNA delivery research.

Dendrimers in Nanomedicine John Wiley & Sons

A comprehensive overview of biodegradable polymers, covering everything from synthesis, characterization, and degradation mechanisms while also introducing useful applications, such as drug delivery systems and biomaterial-based regenerative therapies. An introductory section deals with such fundamentals as basic chemical reactions during degradation, the complexity of biological environments and experimental methods for monitoring degradation processes. The result is a reliable reference source for those wanting to learn more about this important class of polymer materials, as well as scientists in the field seeking a deeper insight.

Dendrimer-Based Nanotherapeutics CRC Press

This thesis outlines the first synthesis of a new complex branched polymer architecture that aims to combine the benefits of dendrimers with the simplicity of conventional polymerisation. There is no other available literature on these remarkable materials, dubbed hyperbranched polydendrons, due to their novelty. The new materials were shown to have very high molecular weights (>1,000,000 g/mol), exceptional self-assembly and encapsulation behaviour and unparalleled functionalisation capabilities, and were studied pharmacologically to determine their potential as oral nanomedicine candidates. The detailed investigation of the chemical variables involved in synthesising hyperbranched polydendrons has shown that their self-assembly and pharmacological behaviour can be turned on and off and fine-tuned by altering the composition of the materials. The permeation of the self-assembled particles through model gut epithelium suggests the potential for oral dosing of drug loaded nanomedicines that result in circulating nanoparticles – a research goal that is currently being pursued by several groups around the globe.

Hyperbranched Polydendrons John Wiley & Sons

The unique structures and properties of dendrimers make them attractive for many applications, from drug delivery and antimicrobial agents to catalysis and as functional materials. Dendrimer Chemistry provides an overview of the latest advances in the synthesis of dendrimers and other complex dendritic architectures. The book focuses on established building block families for generating dendritic macromolecules, capitalizing on the evolution in the synthesis of dendrimers and other complex dendritic architectures. Systems covered range from dendritic polyesters and naturally occurring monomers to novel dendritic families. Each chapter starts with an introduction to the dendrimer family and its important features followed by information on the building blocks used to generate the dendrimers, their synthetic strategies and the resulting architectures. Chapters also cover the characterization and structural analysis, commercial availability and cutting-edge applications. Including forewords from leaders in the field, this will be a useful reference for postgraduate students and researchers in organic chemistry, polymer chemistry, materials science and macromolecular chemistry.

Dendrimer Chemistry Royal Society of Chemistry

The series Advances in Dendritic Macromolecules aims to cover the synthetic, as well as chemical, aspects of this expanding field: the chemistry to and supramolecular chemistry of dendritic or cascade supermolecular compounds. In Chapter 1 of this volume, Hawker and Wooley delineate the convergent growth approach to dendrimers, then relate their three-dimensional architectures to different block polymers. In Chapter 2, Moors and Vögtle describe Professor Vögtle's initial cascade molecules via the repetitive strategy, then expand his original concepts of its application by others, and lastly delineate the synthesis of a new series of tosylamide cascades. They also demonstrate the utility of his original Michael addition/reduction procedure by its application to differ cores. Chapter 3, composed by Professor Engel, describes ionic dendrimers which incorporated an internal transition metal center as well as his work based on ammonium and phosphonium centers. In Chapter 4, Mathias and Carothers review recent studies on silicon-based dendrimers and hyperbranched polymers. Chapter 5, by Kim, describes the preparation and utility of hyperbranched aromatic polymers. Lastly in Chapter 6, Escamilla reviews the historical as well as recent examples

of ionic and nonionic bolaamphiphiles.

Handbook of Biodegradable Polymers John Wiley & Sons

Covering a broad range of polymer science topics, *Handbook of Polymer Synthesis, Characterization, and Processing* provides polymer industry professionals and researchers in polymer science and technology with a single, comprehensive handbook summarizing all aspects involved in the polymer production chain. The handbook focuses on industrially important polymers, analytical techniques, and formulation methods, with chapters covering step-growth, radical, and co-polymerization, crosslinking and grafting, reaction engineering, advanced technology applications, including conjugated, dendritic, and nanomaterial polymers and emulsions, and characterization methods, including spectroscopy, light scattering, and microscopy.

Dendrimers in Biomedical Applications Royal Society of Chemistry

The opportunities and challenges of using dendrimers to improve drug delivery Among pharmaceutical and biomedical researchers, the use of dendrimers in drug delivery systems has attracted increasing interest. In particular, researchers have noted that the volume of a dendrimer increases when it has a positive charge. If this property can be applied effectively, dendrimers have enormous potential in drug delivery systems, directly supplying medication to targeted human organs. With contributions from an international team of pioneers and experts in dendrimer research, this book provides a comprehensive overview of the latest research efforts in designing and optimizing dendrimer-based drug delivery systems. The book analyzes key issues, demonstrating the critical connections that link fundamental concepts, design, synthesis, analytical methodology, and biological assessment to the practical use of dendrimers in drug delivery applications. Topics covered include: Dendrimer history Synthesis Physicochemical properties Principles of drug delivery Applications in diverse biomedical fields Dendrimer-Based Drug Delivery Systems reflects the authors' thorough review and analysis of the current literature as well as their own firsthand experience in the lab. Readers will not only discover the current state of the science, but also gain valuable insights into fruitful directions for future research. References at the end of each chapter serve as a gateway to the growing body of literature in the field, enabling readers to explore each individual topic in greater depth. Pharmaceutical and biomedical researchers will find this book a unique and essential guide to the opportunities, issues, and challenges involved in fully exploiting the potential of dendrimers to improve drug delivery.

Polymers in Nanomedicine Springer

Technical and technological development demands the creation of new materials that are stronger, more reliable, and more durable-materials with new properties. This book skillfully blends and

integrates polymer science, plastic technology, and rubber technology to highlight new developments and trends in advanced polyblends. The fundamentals of pol

Dendrimer Chemistry John Wiley & Sons

With chapters from highly skilled, experienced, and renowned scientists and researchers from around the globe, *Dendrimers for Drug Delivery* provides an abundance of information on dendrimers and their applications in the field of drug delivery. The volume begins with an introduction to dendrimers, summarizing dendrimer applications and the striking features of dendrimers. It goes on to present the details of usual properties, structure, classification, and methods of synthesis, with relevant examples. The toxicity of dendrimers is also discussed. The chapter authors provide an exhaustive amount of information about dendrimers and their biomedical applications, including biocompatibility and toxicity aspects, a very useful feature. This informative volume will be valuable resource that will help readers to create products derived from dendrimers and navigate through the regulatory, manufacturing, and quality control hurdles. It will be an important resource for researchers, scientists, upper-level students, and industry professionals.

Dendritic Molecules MDPI

Written by acknowledged experts in the field, the book will appeal to both scientists working in fundamental research, both active and new to the field, as well as industrial manufacturers of dendritic polymers.

Multivalency Cambridge University Press

This book is a printed edition of the Special Issue "Dendrimers: A Themed Issue in Honor of Professor Donald A. Tomalia on the Occasion of His 80th Birthday" that was published in *Molecules*

Dendrimer Catalysis Royal Society of Chemistry

During the last two decades silicon-containing dendritic polymers have become one of the fastest growing areas of development in polymer science. The eruption of interest in these new polymers stems from their unprecedented molecular architecture, unique resulting properties and the realization that they represent ideal building blocks for chemical nanotechnology. This is the first book to solely focus on silicon-containing dendritic polymers. The contributions of those experts who originally introduced each field or played a major role in its progress are reported. The developments in all major areas of this field are presented from their origins to the present. It is anticipated that this text will become an invaluable guide and vanguard of reference for experienced scientists interested in the fields of polymer and material science, synthetic chemistry, and nanotechnology. It will also serve advanced graduate students either as a source of creative inspiration or as a textbook for appropriate courses.

Related with Dendrimers And Other Dendritic Polymers:

- What Is Sociology Guided Reading Section 1 : [click here](#)