Record Nr. UNINA9910825754703321 Hyperbranched polymers [[electronic resource]]: synthesis, properties, **Titolo** and applications / / edited by Deyue Yan, Chao Gao, Holger Frey Pubbl/distr/stampa Hoboken, N.J.,: Wiley, 2011 **ISBN** 0-470-93476-X 1-283-02554-X 9786613025548 0-470-92899-9 0-470-92900-6 Descrizione fisica 1 online resource (482 p.) Collana Wiley series on polymer engineering and technology Altri autori (Persone) YanDeyue GaoChao FreyHolger Disciplina 668.9 Soggetti **Dendrimers Polymers** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto CONTENTS; Preface; Contributors; 1. Promising Dendritic Materials: An Introduction to HyperbranchedPolymers; 1.1 Importance of Branching; 1.2 Polymer Architecture; 1.3 Dendritic Polymers; 1.4 Hyperbranched Polymers; 1.4.1 Concept and History; 1.4.2 Structure and Properties; 1.4.3 Synthesis Philosophy; 1.4.4 Applications; 1.5 Conclusions; 1.6 References: 2. Polycondensation of AB x Monomers: 2.1 Introduction: 2.2 Statistical Consideration; 2.2.1 Polymerization Behavior; 2.2.2 Degree of Branching: 2.3 Polymerization of AB x -Type Monomers: 2.3.1 C-C Coupling Reactions 2.3.1.1 Metal-Catalyzed Cross Couplings2.3.1.2 Diels-Alder Reactions; 2.3.1.3 Nucleophilic Substitution by Activated Methylenes; 2.3.1.4 Electrophilic Acylations; 2.3.2 C-O Coupling Reactions; 2.3.2.1 Nucleophilic Substitution Reactions by Phenoxides or Alkoxides; 2.3.2.2 Esterification of Carboxylic Acid Derivatives; 2.3.2.3 Ring-Opening Reaction of Epoxides; 2.3.3 C-N Coupling Reactions; 2.3.3.1 Condensation of Amines and Carboxylic AcidDerivatives; 2.3.3.2

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Sommario/riassunto

A much-needed overview of the state of the art of hyperbranched polymers. The last two decades have seen a surge of interest in hyperbranched polymers due to their ease of synthesis on a large scale and their promising applications in diverse fields, from medicine to nanotechnology. Written by leading scientists in academia and industry, this book provides for the first time a comprehensive overview of the topic, bringing together in one complete volume a wealth of information previously available only in articles scattered across the literature. Drawing on their work at the