Record Nr. UNINA9910827316203321 Microwaves in nanoparticle synthesis: fundamentals and applications / **Titolo** / edited by Satoshi Horikoshi and Nick Serpone Pubbl/distr/stampa Weinheim,: Wiley-VCH, 2013 **ISBN** 9783527648146 3527648143 9783527648122 3527648127 9783527648153 3527648151 Edizione [1st ed.] Descrizione fisica 1 online resource (350 p.) Altri autori (Persone) HorikoshiSatoshi SerponeNick Disciplina 620.115 Soggetti **Nanoparticles** Microwaves - Industrial applications 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 Cover; Title page; Copyright page; Contents; Preface; List of Contributors: 1: Introduction to Nanoparticles: 1.1 General Introduction to Nanoparticles; 1.2 Methods of Nanoparticle Synthesis; 1.3 Surface Plasmon Resonance and Coloring; 1.4 Control of Size, Shape, and Structure; 1.4.1 Size Control of Nanoparticles; 1.4.2 Shape Control of Nanoparticles: 1.4.3 Structure Control of Nanoparticles: 1.5 Reducing Agent in Nanoparticle Synthesis; 1.6 Applications of Metallic Nanoparticles: 1.6.1 Application of Nanoparticles in Paints: 1.6.2 Application in Chemical Catalysis 1.6.3 Application of Nanoparticles in Micro-wiring 1.6.4 Application of Nanoparticles in Medical Treatments; References; 2: General Features of Microwave Chemistry; 2.1 Microwave Heating; 2.2 Some Applications of Microwave Heating; 2.3 Microwave Chemistry; 2.3.1 Microwaves in Organic Syntheses; 2.3.2 Microwaves in Polymer Syntheses; 2.3.3

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Sommario/riassunto

For the first time, this comprehensive handbook presents the emerging field of microwave technology for the synthesis of nanoparticles. Divided into three parts -- fundamentals, methods, and applications -- it covers topics including microwave theory, scale-up, microwave plasma synthesis, characterization, and more. This offers both an important volume for academic researchers, and a resource for those in industry exploring the applications of nanoparticles in semiconductors, electronics, catalysis, sensors, and more.