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Altri autori (Persone)	XuRuren PangWenqin HuoQisheng
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Nota di contenuto	Front Cover; Modern Inorganic Synthetic Chemistry; Copyright; Contents; Foreword; Preface; Contributors; Chapter 1 Introduction - Frontiers in Modern Inorganic Synthetic Chemistry; 1.1 Development Of New Synthetic Reactions, Synthetic Routes, Technologies And Associated Basic Scientific Studies; 1.2 Basic Research in Support of Green Synthesis; 1.3 Basic Research on Synthetic and Preparative Routes Under Extreme Conditions; 1.4 Biomimetic Synthesis and Applications of Biotechnology in Inorganic Synthesis 1.5 Rational Synthesis and Molecular Engineering of Inorganic Compounds with Specific Structures and FunctionsReferences; Chapter 2 High-temperature Synthesis; 2.1 Attainment of high temperature-laboratory furnaces [1] and related techniques [2-6]; 2.2 Types of high-temperature synthetic reactions and routes; 2.3 High-temperature solid-state reaction [11-14]; 2.4 Preparation Of Rare Earthcontaining Materials; 2.5 Sol-gel process and precursors in high-temperature solid synthesis [45-47]; 2.6 Self-Propagating Hightemperature Synthesis (Shs) [51-60]

2.7 High-Temperature Preparation Of Metal Vapors And Active Molecules For Use In Cryosynthesis [70-72] 2.8 High-temperature electrolysis in molten salt system [73-79]; References; Chapter 3 Synthesis and Purification at Low Temperature; 3.1 Attainment And Measurement Of Low And Ultralow Temperatures; 3.2 Vacuum Technique and its Application in Inorganic Synthesis; 3.3 Purification and Separation of Inorganics at Low Temperature; 3.4 The Synthesis of Volatile Inorganic Compounds at Low Temperature; 3.5 Formation of Rare-gas Molecules at Cryogenic Condition
3.6 Inorganic Synthesis in Liquid Ammonia 3.7 Cryosynthesis of Unusual Inorganic Compounds [52-55]; References; Chapter 4 Hydrothermal and Solvothermal Syntheses; 4.1 Foundation of Hydrothermal and Solvothermal Syntheses [1]; 4.2 Functional Materials from Hydrothermal and Solvothermal Systems; 4.3 Hydrothermal Biochemistry; 4.4 Supercritical Water-a Novel Reaction System [106-110]; 4.5 Techniques and Methods; 4.6 Ionothermal Synthesis; References; Chapter 5 High Pressure Synthesis and Preparation of Inorganic Materials; 5.1 Experimental Methods Of Inorganic Synthesis Under High Pressure 5.2 Effects Of High Pressure On Basic States Of Matters 5.3 Effects Of High Pressure On Inorganic Chemical Reactions; 5.4 Effects Of High Pressure On Crystal And Electronic Structures Of Inorganic Compounds; 5.5 Major Roles Of High Pressure Method In Inorganic Synthesis; 5.6 Some Important Inorganic Compounds Synthesized Under High Pressure; References; Chapter 6 Inorganic Photochemical Synthesis; 6.1 The Basic Concepts; 6.2 Experimental Techniques; 6.3 Photochemical Synthesis Of Organometallic Complexes; 6.4 Photochemical Synthesis Of Inorganic Compounds
6.5 Synthesis Of Inorganic Thin Films Via Photochemical Reactions

Sommario/riassunto

The book has four main parts. In the first part the discussion centers on inorganic synthesis reactions, dealing with inorganic synthesis and preparative chemistry under specific conditions: high temperature, low temperature and cryogenic, hydrothermal and solvothermal, high pressure and super-high pressure, photochemical, microwave irradiation and plasma conditions. The second part systematically describes the synthesis, preparation and assembly of six important categories of compounds with wide coverage of distinct synthetic chemistry systems: coordination compounds, coordination polymers
