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Nota di bibliografia	Includes bibliographical references (p. 178-182) and index.
Nota di contenuto	<p>Green Reaction Media in Organic Synthesis; Contents; Contributors; Preface; 1 Introduction; 1.1 Green reaction media; 1.2 Ionic liquids; 1.3 Fluorous media; 1.4 Supercritical carbon dioxide; References; 2 Ionic liquids; 2.1 Historical background and synthesis; 2.1.1 Historical background; 2.1.2 Synthesis; 2.1.2.1 Preparation of imidazolium halides; 2.1.2.2 Anion metathesis; 2.1.2.3 Functionalized imidazolium ionic liquids; 2.1.2.4 Other types of ionic liquid; 2.1.2.5 Purification; 2.2 Physical properties; 2.2.1 Melting point; 2.2.2 Thermal stability; 2.2.3 Polarity; 2.2.4 Solubility</p> <p>2.2.5 Viscosity2.2.6 Acidity; 2.2.7 Chirality; 2.2.8 Toxicity and environmental issues; 2.3 Applications as reaction media; 2.3.1 Hydroformylation; 2.3.2 Hydrogenation; 2.3.3 The Friedel-Crafts reaction; 2.3.4 Epoxidation; 2.3.5 Palladium-catalyzed C-C bond formation; 2.3.5.1 The Mizoroki-Heck reaction; 2.3.5.2 The Suzuki-Miyaura cross-coupling reaction; 2.3.5.3 Other palladium-catalyzed cross-coupling reactions; 2.3.6 The Diels-Alder reaction; 2.3.7 Biocatalysis in ionic liquids; 2.4 The future of ionic liquids; 2.5 Experimental part; 2.5.1 Preparation of [bmim][Cl]</p> <p>2.5.2 Preparation of [bmim][PF6]2.5.3 Preparation of a chiral imidazolium ionic liquid; 2.5.4 Enantioselective hydrogenation of methyl acetoacetate; 2.5.5 Epoxidation of 2,2-dimethylchromene; 2.5.6 Mizoroki-Heck reaction between butyl acrylate and iodobenzene under microwave irradiation; 2.5.7 Diphenylacetylene by the Sonogashira coupling reaction; References; 3 Fluorous solvents; 3.1 Historical background; 3.2 Physical properties; 3.2.1 Key design elements in fluorous/organic liquid biphasic reactions; 3.2.2 Commercial availability; 3.2.3 Polarity; 3.2.4 Solute solubilities</p> <p>3.2.5 Fluorous solvent miscibilities3.2.6 Partition coefficients and fluorophilicities; 3.2.7 Toxicity and environmental issues; 3.3 Applications as reaction media; 3.3.1 Fluorous catalysts for fluorous biphasic systems; 3.3.1.1 Hydroformylation; 3.3.1.2 Hydrogenation; 3.3.1.3 Catalytic hydroboration and hydrosilylation; 3.3.1.4 Catalytic oxidation reactions; 3.3.1.5 Coupling reactions; 3.3.1.6 Fluorous acid and base catalysts; 3.3.2 Enantioselective catalysts for fluorous biphasic systems; 3.3.2.1 Reduction; 3.3.2.2 Epoxidation; 3.3.2.3 Protonation</p> <p>3.3.2.4 Et2Zn or Et3Al addition to aldehydes3.3.3 Heavy fluorous reagents; 3.3.3.1 Fluorous tin hydrides; 3.3.3.2 The Stille coupling reaction; 3.3.3.3 Radical carbonylation reaction; 3.3.3.4 Fluorous tin azide; 3.3.3.5 Fluorous sulfide and sulfoxide; 3.3.3.6 Other fluorous reagents; 3.3.4 Heavy fluorous protecting groups; 3.3.4.1 Trifluoroalkylsilyl protecting group; 3.3.4.2 Fluorous alcohol protective group; 3.3.4.3 Fluorous carboxylic acid protecting group; 3.4 Light fluorous compounds and fluorous silica gel; 3.4.1 Heavy and light fluorous molecules and separation strategy</p> <p>3.4.2 Solid-phase extractions with fluorous silica gel</p>
Sommario/riassunto	Green, sustainable chemistry involves the designing of chemical processes with a view to reducing or even eliminating the use and production of hazardous materials. Recent endeavors have focused on limiting the use of organic solvents and replacing them with new, environmentally benign media. The chemical industry is interested in these cost-effective, alternative solvents and processes. This book provides a broad overview of the three most commonly used green reaction media. Directed at synthetic organic chemists working in academic and industrial laboratories, it will also ser

