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Liquids; 1.5.3 Applications of Acidic Ionic Liquids: Catalysts and Solvents; 1.5.4 Regeneration of Chloroaluminate(III) Ionic Liquids; 1.6 Applications of Ionic Liquids as Solvents for Catalytic Systems; 1.6.1 Introduction; 1.6.2 Transition-Metal Catalysed Olefin Oligomerisation; 1.6.3 Hydroformylation; 1.6.4 Carbonylation of Alcohols; 1.6.5 Metathesis; 1.6.6 Hydrosilylation; 1.6.7 Synthesis of Polymers 1.6.8 Microwave-Assisted Chemical Transformations with Ionic Liquids 1.6.9 Methane to Methanol; 1.6.10 Fluorination; 1.6.11 Aldol Condensation; 1.6.12 Acylation; 1.6.13 Hydrocarbon Stream Drying; 1.6.14 Photolysis; 1.6.15 Preparation of Alkoxyamines; 1.7 Ionic Liquids and Biopolymers; 1.7.1 Dissolution and Processing of Cellulose; 1.7.2 Starch and Ionic Liquids; 1.7.3 Other Biopolymers; 1.8 Conclusions and Perspectives; References; 2: Supercritical Fluids in Ionic Liquids; 2.1 Introduction; 2.2 Phase Behaviour of (Ionic Liquid + Supercritical Fluid) Systems; 2.2.1 Experimental Methods 2.2.2 Phase Behaviour of Binary (Ionic Liquid + Supercritical Fluid) Systems 2.2.3 Phase Behaviour of Ternary (Ionic Liquid + Supercritical Fluid) Systems; 2.3 Chemical Processing in (Ionic Liquid + Supercritical Fluid) Systems; 2.3.1 Separations in Ionic Liquid + Supercritical Fluid Systems; 2.3.2 Combined Reactions and Separations in Ionic Liquid + Supercritical Fluid Systems; 2.4 Conclusions and Outlook; References; 3: The Phase Behaviour of 1-Alkyl-3-Methylimidazolium Ionic Liquids; 3.1 Phase Transitions Linked with Conformational Changes of Cations 3.1.1 Conformers of 1-Alkyl-3-Methylimidazolium Cations

Sommario/riassunto

"This book includes eleven overviews of specific areas of ionic liquid chemistry, covering such topics as physicochemical properties of ionic liquids, a patent survey, ionic liquid membrane technology, engineering simulations as well as molecular simulations. Providing insight, appreciation and prospect the chapters give a sense of importance and scope of the area, highlighting the best published works, and looking for the direction in which the field is moving. The value of the chapters lies in the expertise and insight of the authors - and their willingness to share it with the reader, including typical problems related to experimental techniques, selection of liquids, and variability of data.

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"Containing eleven excellently perceptive reviews, this volume will help guide those new to the field and experienced alike, thereby securing the future of ionic liquids"--