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Ionic Liquid-Based Surfactant Science: Formulation, Characterization, and Applications

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This monograph deals with Ionic Liquids (ILs), their preparation, properties and uses in Surfactant Science. The book is divided into 25 chapters and has detail discussion of the various aspects of ILs preparation, properties, etc. There are emphases on the synthesis of ILs of different types, the stabilization of amphiphilic self-assemblies in conventional and newly developed ILs, the formulation of physicochemical properties, the control of microstructures, internal dynamics, physical structures including the geometry, the thermodynamic properties as well as new possible applications. In this respect the editors have done their job well. It essentially covers:

- Characterization procedures of self assembled amphiphiles (SAAs) in ILs
- IL based surfactants including Gemini surfactants
- Non ionic surfactants and ionic surfactants in ILs, and their properties
- Importance of ILs in the formation of microemulsions and in the control of their microstructure
- IL based non-aqueous microemulsion including biocompatible ionic liquids
- Development of ILs or greener, environment-friendly solvents
- Analytical applications of IL based surfactants, and so on

The language of the monograph is lucid and the editors have done a commendable job to bring the language of so many authors at par with each other. A monograph like this one becomes readers' friendly if the indexing is proper; and it is heartening to observe that the editors have taken enough pain to make the index useful. The get up of the book is attractive, and it shows the attention given by the publisher.

While the articles are quite informative and useful for an overview of the IL based systems, there are some deviations from the thematic points of view in that all articles are not strictly related to IL based surfactants; non-surface active ILs are also used in a few chapters. A chapter on deep eutectic solvents is also found in the compilation, and reasons for its inclusion has been found in the foreword and the preface. Nevertheless, it shows the prospects of physicochemical studies in new types of solvents in modern solution chemical domain in addition to ILs.

It may be concluded that almost all the articles are informative and useful for a broad exposure on different IL based, IL related self-aggregating systems. In my opinion, the monograph will be of use to scientists, researchers, and students interested in surface science and self-aggregation of amphiphilic materials with special reference to ILs.

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