

Preface

This monograph should not be regarded as a comprehensive review of the papers published on the recent topic of organogels. Rather, it aims at highlighting the physics aspect of organogelation while most of the papers covering this field deal chiefly with the synthesis and the characterization aspects. As a rule, the way investigations, experimental, and theoretical approaches, together with the interpretations of the experimental data are tackled, depends drastically on the researcher background. Here formation mechanisms, thermodynamic, molecular structure, morphology, and physical properties are presented and discussed from the view of a polymer physicist whose main interest has been on the study of polymer thermoreversible gels for many years and who has entered the field of organogelation a few years ago. Therefore, organogels are systematically examined in the light of the knowledge gathered on the physics aspect of polymer thermoreversible gelation whenever this appears relevant for their understanding. *To be sure, this is not the story of organogels, but rather a story on organogels.*

Some reminders will be given throughout on basic aspects of thermodynamics, with special emphasis on phase diagrams, radiation scattering techniques, and rheology. This relies on the author's feeling, as well as with his own experience, that many readers might not be too familiar with these aspects.

This book therefore pursues two goals: provide researchers already involved in the field with an alternative view on these systems and give an easy access gate to newcomers. It aims at reaching a broad audience, from students to senior scientists.

As emphasized above, it is not the purpose of this monograph to provide the reader with an exhaustive list of references. Rather, those references that are thought to illustrate some aspects in the best way will be quoted. Therefore, it should be clearly understood that the absence of some references does not convey any negative judgment. Recent reviews are available [1–3] and even a book edited by Terech and Weiss [4], and another one edited by Liu and Li [5]; both consist of chapters collected from different authors.

Systems designated as hydrogels will be mentioned throughout but no specific chapter will be devoted to them. The term hydrogels is often broadly used and

encompasses different systems from self-assembling molecules to biopolymers gels such as agarose, carrageenans, and the like. Here only those hydrogels comparable to organogels are considered, namely excluding those systems for which ionic force comes into play.

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