

Book Review

Studies in Surface Science and Catalysis, Vol. 131, Catalytic Polymerization of Cycloolefins — Ionic, Ziegler–Natta and Ring-Opening Metathesis Polymerization. V. Dragutan and R. Streck, Elsevier Science, Amsterdam, 2000. ISBN 0-444-89519-1; xx + 1272 pp.; NLG 775, US\$406, EUR 351.68.

This large volume, consisting of 18 chapters, details many of the major aspects of the polymerisation of cyclic olefins, employing ionic (i.e. cationic and anionic), Ziegler–Natta or ring-opening metathesis polymerisation (ROMP) methodologies. To collect and organise information from such a vast area of research and disseminate it in a logical and coherent fashion is a huge undertaking in which the authors are, for the most part, successful.

The first four chapters break down the subject matter systematically, dealing separately with monomer types, different catalytic components and reaction conditions. While generally well organised and researched, in places the figures are of low quality leading to some confusion as to their content. The subsequent chapters focus on the aforementioned catalyst systems individually, organising the data with respect to the type of monomer (e.g. ring-size of cyclic olefin, bicyclic olefins, etc.). Of particular merit is the section on ROMP, which includes chapters dedicated to the polymerisation of functionalised cycloolefins and heteroatom containing monomers, providing an up to date account of the application of well-defined catalysts that are increasingly more tolerant towards such substrates. Finally, the copolymerisation of cyclic olefins is reviewed.

The next chapters focus on different aspects of the polymerisation process, namely thermodynamic and kinetic considerations, concluding with a chapter detailing the reaction mechanisms of the different catalytic processes. In addition, the structure and properties of the polymeric products is discussed, including a detailed account of the stereochemistry of cycloolefin polymerisation. This approach differs from the preceding section, providing the reader with a more general description of the chemistry that serves as a good background in this area. The remainder of this volume briefly looks at related areas of chemistry (e.g. acyclic diene metathesis — ADMET and ring closing metathesis — RCM) and finally provides a useful section on the practical applications of the polymeric materials and potential applications for the future.

In light of the vast amount of material that has accumulated in this area over the years, some of the subject matter contained within this volume maybe considered superfluous, and should have been considered elsewhere in this series of texts. However, the majority of the information is well compiled and overall this book will provide a good reference volume that will be of use to both academic and industrial researchers.

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