ELSEVIER

European Journal of Pharmaceutics and Biopharmaceutics 53 (2002) 133–134

European Journal of Pharmaceutics and Biopharmaceutics

www.elsevier.com/locate/ejphabio

Book reviews

Advanced polymer chemistry – a problem solving guide
Manas Chanda Marcel Dekker Inc., New York, USA; 2000, ISBN: 0-8247-0257-3

Polymer science has made significant advances in synthesis and application of new materials during the last decades. Novel areas, such as tissue engineering and drug delivery, have added a more biologically oriented group of potential users to the traditionally very interdisciplinary spectrum of polymer chemists and physicists. The intention of this text book is to provide a background in polymer chemistry and its basic principles to those scientists entering the field from various other disciplines. Emphasis is put on mechanism and kinetic aspects of polymer synthesis. Numerous worked out problems and exercises are offered to the interested reader.

The book is divided into a total of ten chapters (852 pages), covering in the first part basic definitions and concepts, chain structure and thermal transitions, polymers in solution, and a detailed discussion of polymer molecular weights. In the second part polymer reactions, such as step growth polymerization, radical chain polymerization, copolymerization, living chain polymerization, coordination addition polymerization and ring-opening polymerization are discussed in detail. Each chapter comprises 50–100 pages, various worked out problems, a short bibliography and a long list of exercises. These exercises require mostly numerical answers and may be also attractive for teaching purposes. A solution manual is available for instructors.

This textbook will be suitable for advanced undergraduate students in polymer sciences looking for an exercise in theoretical aspects of polymer chemistry. It will make a very difficult reading for those scientists who enter the field form more biologically oriented disciplines. For them the numerical problem solving approach can only develop its full beauty when additional reading and/or instruction is provided.

Also the title 'Advanced' is somewhat misleading, because recent advances in specialty polymers ranging from polymer liquid crystals, polymers for the electronic industry to synthetic biopolymers are not even mentioned in this textbook. In the chapter on ring-opening polymerizations for instance, one would have expected at least some hints on biodegradable polyesters in an advanced textbook.

From a 'problem solving guide', so the sub-title of this textbook, one would expect more guidance in terms of polymer characterization. Why for instance most spectroscopic methods, foremost NMR spectroscopy, have been ignored is difficult to understand. In general, little insight is provided how the numbers in various exercises were generated and, therefore, problem solving mostly pertains to the theory of polymerization reactions

For those not easily drawn to the joys of mathematics and physical chemistry a word of caution should be added. The authors assumes that the students have accumulated a 'basic' knowledge of mathematics, chemistry and physics. While this knowledge may be sufficient to solve some of the simpler problems, an in-depth understanding of polymer physics is required to make profit from the concept of this book. The encyclopaedic character of this book will be helpful to those well-advanced in polymer sciences looking for guidance in solving mechanistic questions. Also those involved in teaching polymer chemistry and physics may find it a useful source for exercises.

Thomas Kissel*
Department of Pharmaceutics and Biopharmacy, Philipps-University, D-35032 Marburg, Germany

* Tel.: +49-6421-282-5880; fax: +49-6421-282-7016.
E-mail address: kissel@mailer.uni-marburg.de (T. Kissel)

PII: S0939-6411(01)00208-9

Biologically Active Peptides: Design, Synthesis and Utilization
W.V. Williams, D.B. Weiner (editors), Technomic Publishing Co., Inc., Lancaster, Basel, pp. 360, ISBN 0-87762-935-8

The book, belonging to the series 'Biomedical Applications in Biotechnology' marks the first in a row addressing the impact of the newest aspects of biotechnology in clinical and experimental medicine. Peptides play a key role in modern biotechnology and the intention of the book is to lead the reader through the successive steps in the development of biologically active peptides, namely design, synthesis, and evaluation.

Each of these three sections contains 4–5 chapters written by experts in the respective fields. Specifically, the first section about structural approaches to peptide design starts with a discussion of structural homologies, molecular modelling and computational chemistry with examples of bioactive peptides that have been developed based on active