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Book reviews

Ralph S. Greco, Fritz B. Prinz and R. Lane Smith, editors. Nanoscale Technology in Biological Systems (2005, CRC Press, Baca Raton, USA) 512 pages, $ 159,95, ISBN: 0-8493-1940-4

Nanotechnology is gaining more and more importance and acceptance in the Pharmaceutical Sciences and especially in Pharmaceutics. The book "Nanoscale Technology in Biological Systems", is of interest to those working in the general field of Pharmaceutics. However, since it is edited and written by surgeons, internists, and biomedical engineers with the focus on medical and engineering students it mainly concentrates on areas such as biomaterials, devices, transplants, sensors, tissue engineering, nanoprobes, and gives a very good overview about these fields. It also provides a good overview about related biological aspects such as cell structures, measurements in living cells, and host responses to implantable devices. The book contains 21 chapters on 469 pages plus 15 pages of index and is written by 38 authors and co-authors. However, this book is of no use for those interested in nanoscale drug delivery: Nanoparticles and liposomes are mentioned only in two chapters, "Nanobiotechnology" and "Nanotechnology and Cancer", on a total of four pages, but the cited references are chosen very erratically and, with the exception of one very specialised review, do not refer to any further review articles.

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Diane Burgess, editor. Injectable Dispersed Systems. Formulation, Processing and PerformanceDrugs and Pharmaceutical Science vol. 149 (2005, Taylor & Francis, London) ISBN: 0-8493-3699-6, 652 pages, 186.90€

The series 'Drugs and the Pharmaceutical Science' continues to be a mainstay of pharmaceutical literature in research and development. This latest offering is a fine addition to the series and should serve as a current in-depth text for all scientists involved with parenterals. The first section concerns basic principals. Diane Burgess's chapter on the physical stability of dispersed systems is indeed very basic, but, I suppose, fitting to the aims of this book. The following chapter on biopharmaceutical principles of injectables is very qualitative, but does include a number of useful, illustrated examples. The chapter entitled 'Characterization and Analysis of Dispersed Systems' is certainly a useful summary of available techniques, but again rather superficial. The next chapter discusses in vitro and in vivo release kinetics. The description of the apparatus suitable for measuring such kinetics is admirable, but the mathematical handling is rather weak. Section 2 describes the various dosage forms that can be given parentally. Here we are offered separate chapters on suspensions, emulsions, liposomes, and microspheres. These are all very good general summaries, but do not expect a lot of scientific detail. The large Section 3 of this book offers individual case studies of product development. These examples are nano crystals, perfluorocarbon emulsions, liquid emulsions, pegylated liposomale doxorubicin, and injectable microspheres. These chapters are in general excellent and a mine of information about the industrial development of injectable dispersed systems. The book ends with section 4, which considers quality assurance and regulation. These two chapters contain just the usual stuff, rather dry but of course important.

This is a book of varied quality and scientific standard. Despite the weaknesses of Section 1, I would recommend purchase of this volume simply because of the numerous case studies elucidated in Section 3. So, do not expect too much, but there is a lot of interesting information about developed injectable dispersed dosage forms.

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A. Ritter, S. Reisman and B. Michniak, Biomedical Engineering Principles (2005, Taylor & Francis, London) 665 pp €103. ISBN 0-8247-9616-0

This book is evidently intended to serve as an introduction to the field of biomedical engineering for advanced undergraduate students. It is a detailed, excellent coverage of some essential aspects of biomedical engineering. Its 12 chapters

cover transport processes, cell physiology, the cardiovascular system, signal processing, biomechanics and tissue engineering. The theoretical background to the subjects is covered in substantial depth. Where additional mathematical knowledge is necessary, this is given in an introductory way. My attention was particularly attracted to the chapter on principals of biomechanics where the modeling of human movement is described in detail. Also the chapter on applications of biomechanics is fascinating. Here, we see how the biomechanics of swimming is modeled using the equations of motion, or discover how to predict ulcer formation on the skin, or analyze the lung sounds in normal and emphysematous subjects. The brief chapter on tissue engineering is an excellent introduction to the subject, and the description of future trends leading up to the bionic person put in perspective. As the authors write at the end of the last chapter, we are living in exciting times. He is not the only one who cannot wait to see what will develop. An excellent introduction to the subject.

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Jennifer Dressman and Johannes Krämer, editors. Pharmaceutical Dissolution Testing (2005, Taylor & Francis, London) 429 pp € 128. ISBN 0-8247-5467-0

This is an excellent handbook on methods of dissolution testing of pharmaceuticals. As the editors claim in their preface, this book really does cover all aspects of dissolution testing, from the apparatus through development of methodology to the analysis and interpretation of results. The dominant theme is, of course, orally administered dosage forms.

I found that I spend most of my time looking through Chapter 1, which deals with the historical development of dissolution testing. This is a fascinating story, and the authors of this chapter present this history in readable and scientifically well-founded fashion. I particularly liked the way the authors identify particular scientists who have made a major contribution in this field. Names such as Beckett, Amidon, Levy, and Wagner are no surprise. If Herbert Stricker should read this review, I suggest he checks out the praise this chapter showers on his work from the 1970's. There follows two chapters on compendia testing equipment and its validation, as well as the FDA perspective on this subject. These chapters are all essential reading to understand the background to the subsequent scientific chapters in this book. Clive Wilson's chapter on gastrointestinal transit and drug absorption is very fine work. He discusses in detail the passage of solid dosage forms through the gastrointestinal tract which make clear the problems and limitations of oral drug delivery. Diebold's chapter on hydrodynamic consideration of dissolution testing is kept on a simple level and therefore is both understandable and relevant for day-to-day dissolution testing. In my opinion the best chapter in the book (apart from Chapter 1) is Jenny Dressman's description of development of dissolution testing based on gastrointestinal physiology. This contains a lot of sound science based on the author's many years of experiments as a pioneer of bio-relevant dissolution testing. There follow very good chapters on the interpretation of dissolution time profiles, and also establishing in vivo/in vitro correlations. There follows an industrial perspective of dissolution method development, which will certainly be of use to any industrial pharmaceutical scientists attempting to set up workable methods. It may be hackneyed to say so, but this book is a really valuable contribution to the scientific literature. It contains some excellent chapters, and is a sound mixture of historical perspective, forward-looking science, and practiced-based dissolution methodology. I recommend this book to all pharmaceutical scientists working with dissolution testing in either industry or academia.

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