



Applied Surfactants



Principles and Applications. By Tharwat F. Tadros. Wiley-VCH, Weinheim 2005. 634 pp., hardcover, € 199.00.—ISBN 3-527-30629-3

Surfactants find an enormous number of applications, varying from large-scale uses to applications on a milligram scale, as in gene delivery experiments. This book provides a rich, although not comprehensive, source of information, especially for the industrial chemist who wishes to learn more about this fascinating world. Because of the wide coverage of topics, one would have expected a text written by a number of different specialists. This is not the case. Professor Tadros is the single author of 15 chapters, in total 634 pages, full of useful tables, figures, and helpful pictures. After three introductory chapters, which summarize the classification, physical chemistry, and phase behavior of surfactants in solution, the remaining 12 chapters consider specific applications, with brief summaries of the basic principles on which these applications depend. These topics include adsorption of surfactants at air/liquid and liquid/liquid interfaces (Chapter 4), adsorption at solid/liquid interfaces (Chapter 5), emulsions and their stabilization (Chapter 6), dispersants and stabilization of suspensions (Chapter 7), foams (Chapter 8), nanoemulsions (Chapter 9), microemulsions (Chapter 10), wetting, spreading, and

adhesion (Chapter 11), personal care and cosmetics (Chapter 12), pharmaceutical formulations (Chapter 13), agrochemicals (Chapter 14), and the food industry (Chapter 15). The subject index (only 3¹/₂ pages) is certainly too brief for a book of this size. There is no author index.

My main criticism of this otherwise helpful book is that the bibliography of each chapter is too brief and outdated (for example, Chapter 4 has 12 references, two of which are from 1863 and 1883, and the average year of the references is 1931). This is recognized by the author in the preface. He apparently relies completely on his own previous experience, and finds that sufficient for the present introductory text. Also, the latest developments in surfactant applications are just ignored or only touched upon very briefly. All this is a considerable disadvantage for the modern reader, but one tends to forgive the author because of the enormously broad range of topics that is covered.

Physical chemical theories and background material are often not introduced in a systematic way. For example, the packing parameter approach is described and employed in several different chapters, but nowhere is it adequately introduced and supported by literature references. That also applies to other topics, such as the hydrophilic–lipophilic balance (HLB) concept and Ostwald ripening. Even more importantly, phase diagrams are incorrect in several cases and are taken from old literature.

Although I cannot adequately judge the quality and relevance of all topics treated in this book, my impression is that this work will be consulted frequently by the practicing industrial surfactant chemist.

The book is well produced, although the structural formulas are often badly drawn and sometimes contain errors. There appear to be relatively few errors in the text.

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DOI: 10.1002/anie.200585309

Magnetism: Molecules to Materials V



Edited by Joel S. Miller and Marc Drillon. Wiley-VCH, Weinheim 2005. 381 pp., hardcover, € 149.00.—ISBN 3-527-30665-X

This book is the fifth volume of a new series on recent developments in the area of magnetism. It can be stated at once that this latest volume, like its predecessors, contains an excellent collection of topics that are of current interest, and provides further confirmation of the renaissance that has been seen during the last few years in this area of research, which had been regarded as almost a closed subject. As indicated by the subtitle of the series, *Molecules to Materials*, the central theme is the relationship between the molecular starting-point and the resulting materials properties. Both this volume and its immediate predecessor, Volume IV, differ in conception from the first three volumes, insofar as these latest two are not devoted to one specific topic. Instead, the individual chapters review recent developments in different areas of the very broad spectrum of research topics in this interdisciplinary field. Volume V consists of ten articles dealing with both synthetic and theoretical aspects, with special emphasis on the materials properties and their relationship to molecular structure.

The volume contains three articles that report on magnetic materials made by assembling molecular building blocks, with an emphasis on combining these in such a way as to give special properties. The descriptions cover electrically conducting materials and others that are based on chiral building blocks, which gives materials with non-linear magneto-optical properties. Nanoporous molecular magnetic materials are also described, which is still a comparatively new area of research. In two other articles the focus is on molecular bridging units known to transmit mag-