

the detailed and useful figure captions are placed. Otherwise I suppose notes and comments could be made in the remaining space. In UK universities the level is appropriate for senior undergraduates and postgraduates; those engaged in underpinning research in industry will also find the book both rewarding and useful. To make full use of the book the reader will need to have a reasonable level of mathematics, although there is much of interest that can be gleaned by those with only rudimentary mathematical knowledge. A feature of particular use in the presentation is the ‘concept map’ at the front of each chapter. The map outlines what will be covered in the chapter, focusing the mind; it can also act as a good summary after reading the chapter. A small thing which makes the reader feel at home is the form of the section headings, which are sentences encapsulating the section content. For example the section on aggregation kinetics is headed ‘Kinetics of Aggregation Allow Us to Predict How Fast Colloidal Systems Will Coagulate’. There are some worked problems within the text, and at the end of each chapter there is a collection of problems (without answers), and a literature table informing the reader which areas are covered further in a well-selected small number of standard texts. Specific references to relevant research papers and books are made in the text where appropriate.

Those who have the 1st edition will certainly want to have sight of the 2nd edition although they may not wish to purchase it. You get 100 pages more for your money, with extensions, updating and revisions in a number of chapters. There is also an extra chapter (chapter 12), the Epilogue, which in the words of the authors provides an ‘integrative prospective’, which makes very interesting reading. What stands out throughout the book is the authors’ grasp of their subject (they have of course each made a number of very significant contributions to the subject themselves). They write with a clarity and authority one associates with first rate teachers.

For those who are looking for a modern, authoritative and coherent coverage of colloid science as it stands at the end of the 20th century this book, which can serve as both a pedagogic and a reference work, is for you.

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Introduction to Particle Technology. Martin Rhodes (Ed.), Wiley, 1998, £29.95 (paperback), 320 pp., ISBN 0-471-98483-3

Particle technology has become increasingly important in a number of sectors of the Process Industries and, consequently, in a number of degree courses. The subject is very

broad, covering topics which span from surface science to processing, from micro to macro. To write a book which covers the whole spectrum is a hard task. To find a compromise between writing an encyclopaedia and a reference book is even harder. The book is meant to be an introductory textbook and to give a flavour of the complex subject: the effort needed to cover a so broad field and to make it accessible to students has to be acknowledged.

The book starts from very basic fluid dynamic concepts on single and multiple particles immersed in fluids (Chapters 1 and 2), where concepts such as fluid regimes, drag, and buoyancy are compressed into 20 pages.

The 12 chapters reflect quite a number of topics. Following the first two chapters, the remaining ones deal with; particle characterisation methods (Chapter 3), processing (Chapters 4 and 5, dedicated to packed beds and fluidisation), transport (Chapter 6), separation devices (Chapter 7), storage (Chapter 8), mixing and segregation (Chapter 9), particle size reduction and enlargement (Chapters 10 and 11), and safety (Chapter 12).

A characteristic of all the chapters is the extreme conciseness, which can sometimes result in a lack of clarity. As an example, the chapter on particle size analysis might be confusing for somebody who is not familiar with the definitions and methodologies which are assumed to be known.

Fluidisation and pneumatic transport are treated in a much clearer way, giving the very basic concepts and flavour about the topics. However, the information presented here cannot be used as it stands, and the reader also needs to refer to more comprehensive and complete works. For a new book, on a well-researched field, it is a little disappointing that fluidisation is still presented in the ‘classical’ way, namely through what I would define as an empirical approach. There is no reference to more recent and more rigorous approaches. This is a general characteristic of the book: I could not find, for instance, any reference to any kind of modelling, constitutive equations, or to ‘newer’ systems. This is, without any doubt, a book about ‘classical’, old fashioned particle technology, as testified also by the fact that the most recent citation is at least 6-years-old!

Cyclones and silos are presented using the same philosophy: practical, useful design hints are given, but very few words are spent on the rationale justifying the practicality. In this regard, the book can be used as a handbook, from which one can get very useful suggestions about the range of values of variables important when designing. This aspect is a little unexpected for a book which is meant to be a textbook, and the only way a student can really find the information useful is by complementing it with further readings.

The collection of worked examples and exercises is rather good. The former give a very good illustration of the ideas presented, and are essential for expanding and understanding the otherwise compact writing better. Perhaps the book

can be used as a reference, hoping that the reader makes good use of the worked examples and of the suggestions for further reading, maybe extracting additional references from the latter. Nevertheless, having in a book of not much more than 300 pages a good collection of what 'classical' particle technology is about is very impressive and, if used in the right way, it is undoubtedly useful.

I recommend using the book as a guideline from which to extract information on what to read alongside; but I also recommend retaining an open, critical mind about other, newer aspects and extensions of the field. The book is not

exhaustive, both because of its conciseness and because of the topics considered, but the good collections of worked examples make it quite unique.

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