

*Applied electrostatic precipitation*, K.R. Parker (Ed.), Blackie, London, 1997, ISBN 0 1514 02664 xvi + 521 pp., £125.00

*Applied Electrostatic Precipitation* is a book which presents just about everything there is to know about the technology of particle removal from moving gas streams. The attention to detail is impressive, with the text clearly combining quite complex mathematical treatments with the practical implications of real system behaviour. Contributions are included from authors who are internationally recognised as experts in their field, and the editor has successfully knitted together this vast source of information into one self-contained volume. The style of writing throughout makes for easy reading, and the generous use of illustrations and graphical data elevates the overall status of this book to an almost encyclopaedic source of information; both as an introduction to and for the more advanced appreciation of, the world of electrostatic particle precipitation. It is all here; beginning with a gentle introduction to the basic theory of ion production and logically following through with basic explanations of particle charging and particle deposition phenomena. On delving deeper into the text, the reader is guided through the more complex considerations of aerodynamic effects and the implications of particle size and shape. A very useful section is devoted to the methods of upgrading existing precipitator efficiency, with an in-depth treatment of flue gas conditioning being an especially valuable contribution. Energization modes and computer modelling are also given comprehensive coverage, and the tour ends with sections on commissioning and future developments. Each chapter is supported by a comprehensive list of references, ranging from interesting and useful archive material right through to current relevant research publications from around the world.

This is essential reading both for the novice seeking a concise, easy to read introduction to the subject, and the specialist, who would equally find this book very informative as an up to date reference manual. It is loaded with information, is easy to read, and is a high quality presentation. The editor and the authors are to be congratulated. Ten out of ten!

**John F. Hughes**

*Elements of Chemical Process Engineering*, D.S.J. Jones, John Wiley and Sons Ltd, Chichester, 1996, 528 pages, numerous figures, £120.00, ISBN 0 471 96154 X

The book *Elements of Chemical Process Engineering* aims at the young process engineer starting his/her professional career after graduation, most likely the baccalaureate. To ease this start, the author summed up his own experience gained in four decades working in the process industry focusing on practical and quick methods. These methods relate to the calculation and design of common process units as, for instance, vessels, columns, pumps, compressors, heaters and so on. In addition, utility plants and off sites are dealt with, which very often are missing in related books. Costs and

economic calculations are included as well as a description of the process engineer's role in the execution of a project.

The book avoids sophisticated equations for the calculation of the equipment listed above. However, reading and understanding of the book requires basic knowledge of the related disciplines as no deductions or hints on related standard books are given. On the other hand, the use of the book is facilitated by numerous examples which are calculated to the final result. Moreover, the calculation procedure is described step by step in most cases. Numerous graphs, charts, data tables and figures represent an additional value of the book, but all units are English.

Without exception, the examples are taken from refining technology. Chemical reactors are not touched at all. This leads the author to state that in the material balance the streams of moles coming in equal the streams of moles going out, which is true only if no chemical reactions occur. Missing are modern techniques for the design of heat exchanger networks, as for instance the pinch technique.

The book fulfils its aim to offer the beginner a 'helping hand'. The material is well structured and clearly presented. For the purpose envisaged it can be recommended. However, today's process engineer will most likely apply flow sheet software, which requires a sound understanding of chemical process engineering as well as skills in utilising the related software. In that case the book's recipes may assist in performing plausibility checks.

**Prof. Dr.-Ing. R. Reimert**

*Environmental Impact of Chemicals: Assessment and Control.* M.D. Quint, D. Taylor and R. Purchase, (Eds.), The Royal Society of Chemists, Cambridge, UK, £69.50 (US \$120.00), 1996, 244 pp. ISBN: 0-85404-795-6.

In the preface, the editors state, "There is little doubt that industrial chemicals are capable of causing adverse environmental impacts. These can arise through their deliberate use, as pesticides for example, or due to their planned or unplanned manufacturing processes.

The aim of this book is to provide an insight into a technique that is being used to help predict the environmental impact of chemicals in specific circumstances, namely risk assessment. The tools of environmental risk assessment — toxicology, epidemiology, exposure modelling and analytical chemistry — are outlined, along with the means for applying them within a regulatory framework".

The book contains 16 chapters, which appear to have resulted from papers presented at two symposia held in London in 1994.

The editors outline the scope of their book in the preface: "Following an introduction and overview of the risk assessment process (Chapter 1), the roles of toxicology and epidemiology are discussed (Chapters 2–6), with views from Europe and the United States. Recent environmental legislation in the UK has focused on the need to protect