

## Book reviews

**Electrochemical Processes for Clean Technology** by Keith Scott, The Royal Society of Chemistry, Cambridge (1995), xiii + 307 pp. ISBN 0 85404 506 6, Price (hardback): £59.50 or \$99.00

Keith Scott is becoming established as a prolific author with this, his fourth book in five years (one co-authored with Prof. Goodridge), and a valuable number of research papers in this period. His field is electrochemical processes and reactors and inevitably some overlap has occurred between publications; for example, in this book and with a review chapter in 'Chemistry of Waste Minimization'. The title of this book raises some curiosity because while *clean technology* is undoubtedly a buzz word of the moment its meaning is not always clear and agreed. As the book unfolds the author's meaning becomes clearer that it perhaps describes processes for providing cleaner technology. This is the essence of the claim made in the preface.

Beyond such nit picking, it is, in fact, an excellent survey of electrochemical processes and reactors/cells in use at the present time or cited in recent research and development literature. In each case the principles are defined but not necessarily detailed, and the importance and industrial role are explained. Thus, there is relatively little rigorous analysis but the range of coverage is impressive enabling the reader to indulge in lateral thinking based on his own particular interests. The base is certainly chemical; metallurgical processes have not been ignored although corrosion has received a relatively cursory treatment.

Of the eight chapters, one is introductory, and four deal with basic principles of electrochemical cells, reactions and design, membrane transport and separation. Three chapters cover metal processes and electro-winning, organic and inorganic species, and electrochemical synthesis. Each chapter is referenced with recent literature, a general reading list is appended and a full index of topics provided. Good illustrative material is included in the form of graphs, line diagrams of plant and flow schematics and the general appearance is conducive to relaxed reading.

In conclusion, it is a contribution of considerable value which should be widely appreciated by all applied electrochemists.

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**World Databases in Chemistry** by Chris Armstrong (Ed.), Bowker-Saur, East Grinstead, UK (1996), 1200 pp, ISBN 1 85739 101 2, Price (hardback) £145

Reviewing this major listing and classification of international databases in chemistry presents a

formidable challenge due to its length and the sheer amount of information. Generally, information is classified under the following headings: (1) Chemistry (180 pp), (2) Chemistry General (195 pp), (3) Organic, Organometallic, Petrochemistry (32 pp), (4) Inorganic Chemistry (10 pp), (5) Analytical Chemistry (21 pp), (6) Toxicology, Pollution, Waste Treatment (155 pp), (7) Pharmaceuticals, Cosmetics (179 pp), (8) Surface Chemistry, Materials Chemistry (49 pp), (9) Chemical Engineering-Manufacture (82 pp) and (9) (should read 10!) Patents Chemistry (64 pp). There are a number of extensive indices at the back of the book which allow the reader to search according to subject, database name or addresses.

The database itself (rather than, for example, a chemical service or product) is taken as a base unit so that links between various information providers are explicit. Each database is assigned a master record which describes the content, scope and form (e.g., CD ROM, tape, diskette, world wide web entry).

The electrochemistry and related materials entries are well organized and sometimes directly useful. There are a large number of entries on specialized areas of electrochemistry, such as batteries and corrosion. It has, on some occasions, saved me a trip to the library or a potentially long microcomputer session logged on to electronic databases. For example, I've located useful databases containing information on subjects as diverse as corrosion of marine materials, degradation of biomedical implants, selection of advanced batteries and synthesis/analysis of a pharmaceutical. The text goes a long way to being a definitive collection of information on electronic and other databases in the massive and ever-expanding area of chemistry but will, by the rapid rate of progress in electronic data storage and transmission, quickly become dated.

It is always tempting to criticize the high pricing of specialized books. However, at £145, ~3 kg and 1200 pp (mostly in double columns), this convenient and well-presented collection of data has the following figures of merit: ~4.8 p g<sup>-1</sup> (~48.4 £ kg<sup>-1</sup>), ~8.27 pp (£ sterling)<sup>-1</sup> and 400 p kg<sup>-1</sup>.

As a reference text, it is a very useful collection of information on databases in (and around) the area of chemistry, deserving a place in all science and technology libraries. An electronic version of the text would allow fast and convenient searching of an essential area of science and technology and maybe this will be considered in a future edition.

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