

## Book review

### **Electrochemistry for Chemists** (2nd ed.)

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Wiley-Interscience, New York (1995), ISBN 0-471-59468-7 (cloth), 505 pp, £55

The field of electrochemistry has undergone many changes since the first edition ('Experimental Electrochemistry for Chemists', 1974) and many chemists, biologists and materials scientists now employ electrochemical techniques for the characterization of solution phase complexes and the surfaces of new materials. The subject matter of this new edition reflects some of these changes as there is an expansion of material on instrumental (and particularly spectroscopic) techniques.

The present edition provides: an introduction to the basic principles of electrochemistry (Chapter 1), potentiometry (Chapter 2), voltammetry (Chapter 3), and electrochemical titrations (Chapter 4). It also contains a practical summary of indicator electrode geometries (Chapter 5), electrochemical cells and instrumentation (Chapter 6), and solvents and electrolytes (Chapter 7). In the final (and most useful) chapters, illustrative examples of molecular characterization of species such as protons and hydrogen (Chapter 8), dioxygen species (Chapter 9), metals and metal compounds (Chapter 10), nonmetals (Chapter 11), carbon compounds (Chapter 12) and organometallics (Chapter 13) are provided.

The text is generally well produced and should serve as a useful handbook for many years; it contains

several useful lists of, for example, formal or standard electrode potentials, potential limits for various solvents and miscibility numbers for organic solvents. The treatment followed assumes a reasonably detailed knowledge of chemistry (and, in parts, mathematics) which may deter some student readers. On the other hand, the authors have been careful to minimize presentations of detailed theory. Extensive reading lists, provided at the end of each chapter, serve to direct interested readers to sources of information on more detailed theoretical treatments or more extensive applications.

It was surprising to see (on page 290) conductivity calculations treated in terms of 'equivalents', rather than concentrations. The only flow cells considered tend to be very small glass voltammetry/coulometry cells or specialized spectroscopic cells; it would have been useful to consider typical laboratory flow cells for synthesis. However, these are minor criticisms.

In summary, 'Electrochemistry for Chemists' is complementary to many of the existing electrochemistry texts and provides a useful treatment of 'the electrochemistry of chemical systems'. It deserves to be widely read by the electrochemical community and should prove particularly useful to postgraduates and other research workers in electrochemistry and related fields of chemistry.

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