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Book Review

***Advanced Practical Inorganic and Metalorganic Chemistry*, Edited by R.J. Errington, Blackie Academic & Professional, New York, 1997. ISBN 0751402257; pp. 288; £ 25.00**

This book is an excellent source of information for the practicing chemist. It presents a series of chapters beginning with how to search the literature, how to keep good records of your work in your notebook and a brief note on legal aspects. There are then a series of chapters dealing with bench-top techniques, glove boxes, vacuum line techniques, how to deal with and choose solvents (purification) and reagents (e.g. what to use for oxidation, reduction, alkylation, deprotonation etc), and methodologies for reactions involving gases, liquids and solids. The chapters continue assuming you now have a product to work with, to present reaction work-up techniques, filtration under vacuo, purification, crystal growing, and product characterization using a wide variety of modern techniques. There is a chapter on special techniques, which considers inter alia, the use of a microwave, sonication and photochemistry, high pressure and low temperature matrix methods. The volume closes with a fairly extensive presentation of methods to prepare a variety of starting materials (presented very briefly, not in Inorganic Syntheses detail).

The chapters are lavishly illustrated with very clear diagrams of glassware, set-ups for various objectives, vacuum manifolds, cut-aways of gas cylinder valves, oil diffusion pumps etc.

The descriptions of the various physical techniques such as NMR, IR, UV-vis, mass spectroscopy etc., and how to implement them, tend to be rather superficial. Clearly there is a limit to the size of the book, which would have been much larger if more detail on these techniques had been presented. However some of the presentations are very terse and of limited value. For example, the conductivity section should have indicated, in a practical fashion, how you can decide whether an electrolyte is 1:1, 2:1 etc. This reviewer was also bemused by the statement in the electronic spectroscopy section (occupying less than one full page) that 'electronic spectra provide little direct information about molecular structure'. Some electrochemical techniques are presented (but there is no index entry to electrochemistry) but no modern aspects such as microelectrodes, thin layer techniques, spectroelectrochemistry, microcells etc. are present. Cyclic voltammetry alone is emphasized

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but with a cell set-up much more complex than really necessary and likely to deter non-electrochemists from using the technique.

These detractions aside, the book is truly useful from a practical laboratory viewpoint and should be required reading for any new graduate student or laboratory assistant.

24 February 2000 The Editor's Desk.