

Some of the elements such as lead and mercury form organometallic compounds of environmental significance. However, there are many more trace elements to be analysed than are dealt with here, not to mention organic species, *etc.* The book does not discuss sampling and statistics. It is rather a description of a set of analytical techniques together with some of their applications in a specific area. On that basis, it will be very useful to anyone setting out to do this kind of analysis.

*AFRC, IPSR Nitrogen Fixation Laboratory,  
University of Sussex, Brighton, BN1 9RQ (UK)*

**G.J. Leigh**

*Introduction to cluster chemistry*, D.M.P. Mingos and D.J. Wales, Prentice Hall International, Englewood Cliffs, 1990, pp. 318. £19.95. ISBN 0-13-474305-9

This is the first in a new series designed to provide high quality books on frontier topics in inorganic and organometallic chemistry, written by well-established leaders in these fields. The present volume covers virtually all aspects of cluster chemistry, including transition metal, Main Group and *f*-element clusters, as well as a brief discussion of 'naked' clusters generated by molecular beam techniques. The book also provides a solid theoretical basis for understanding cluster structure, bonding and reactivity. The framework for most of the discussions of the theoretical aspects of the subject is Stone's tensor harmonic theory (TSH); whilst the latter may sound somewhat daunting to the uninitiated (including this reviewer!), the concepts and applications of TSH are clearly and concisely explained and require only a knowledge of elementary group theory to fully appreciate them. A nice addition to the text is the provision of what the authors term 'Information Boxes', which summarize particular synthetic approaches, concepts, and spectroscopic properties of cluster compounds, together with the appropriate references. At the conclusion of each chapter is a contemporary selection of study problems and a comprehensive list of references, with coverage through 1989.

Overall, this is an excellent, reasonably priced volume which will be invaluable to workers in the field, and one which is also eminently suitable for advanced undergraduate studies.

*School of Chemistry and Molecular Sciences  
University of Sussex, Brighton BN1 9QJ (UK)*

**Geoff Cloke**