In summary, this is an informative and timely book that describes the most important methods of synthesis and applications of ordered porous nanostructures. It is a good, though not comprehensive, reference work for researchers working in the field of ordered porous materials.

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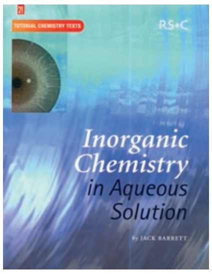
Inorganic Chemistry in Aqueous Solution



By *Jack Barrett*. Royal Society of Chemistry, Cambridge 2004. 184 pp., softcover £ 14.95.—ISBN 0-85404-471-X

This is Number 21 in the RSCs series of *Tutorial Chemistry Texts*, and both author and publisher are to be congratulated on a job well done.

Two introductory chapters on water itself give clear accounts of its structure and solvating characteristics. They are followed by chapters on the forms of ions in solution, on thermodynamics and electrode potentials (a difficult topic that is very clearly put across), and on the stabilities (actually redox stabilities) of ions in solution. Then come three chapters of descriptive chemistry on the elements of the s and p blocks, the d block, and the f block. The emphasis of these three is on "periodicity", and the trends and comparisons are well brought out. One cannot expect too much descriptive detail in a work of under 200 pages, but in fact a great deal has been achieved, and the level seems just right for the target audience—which I take to be mainly second-year undergraduates, though that doesn't seem to be made clear. The aims of each chapter are set out in tabular form, the discussions are punctuated with worked examples, and there are further study problems with answers at the back of the book.

There is a strong emphasis on systematization and explanation, using thermodynamic analyses to identify factors that contribute to particular chemical properties, such as solubility of salts or standard reduction potentials of metal ions. At a deeper level of interpretation, molecular orbitals and, where relevant, relativity theory, are deployed.

At times I was wishing for more pictures and fewer numbers. Frost (volt-equivalent) diagrams are often more directly informative than Latimer diagrams, though both have their uses. To take one small example, in describing the structure of $[Mo_2(OH_2)_8]^{4+}$, no doubt the Mo–Mo bond is quadruple, and the description of the electron-count is clear, but is it not more clear to point out the eclipsed conformation of the Mo_2–O_8 skeleton, in contrast to the staggered conformation of, say, C_2Cl_6?

Mention of an oxygen-free molecule underlines what this book does not contain. It is, almost exclusively, an account of the elements in their states coordinated with water, as broadly defined to include oxo and hydroxo complexes and oxyacids. The strength of Brönsted acids, including the hydrogen halides, is almost the only topic beyond this. Lewis acids and bases get a mention but hardly more, so although the factors affecting the stability of HF are well explained (including the recent discovery that in aqueous media the dominant species is actually the ion pair $[H_3O]^+F^-$), there is nothing on the halide complexes of the metals, even through in some aqueous solutions of "salts" the complexes and ion pairs may be the dominant species.

But it is best to do one job well, and if the last remark is a criticism, it really expresses the hope that another good book, on coordination chemistry in aqueous solution, is still to come. This is an excellent text, well written and attractively produced.

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