

## BOOK REVIEW

Chemical approaches to the synthesis of inorganic materials, 1994, C N R Rao (New Delhi: Wiley-Eastern Ltd. and New Age International Ltd.) pp 1–102.

Synthesis is the key step in successful development of materials. Both in industry and in academia development of novel materials with tailored properties is a constant activity. The community of practising solid state chemists, teachers and students will therefore warmly welcome this *petit* book on synthesis of inorganic materials. The book fills a gap in the solid state literature and fulfils a need long felt by materials scientists. Professor C. N. R. Rao has put together rather succinctly the quientessential aspects of the chemical approaches to synthesis of a variety of inorganic materials, simple or complex, stable or metastable, known or novel.

The book is set conveniently in 20 short chapters—better called sections. Chapters 2–14 discuss different methods of chemical synthesis while chapters 16–19 describe synthesis of some important classes of materials. Chapter 15 is a write up on formation of intergrowth structures which is perhaps a synthetic happenstance of great interest to chemists. Synthesis of nanomaterials is of significant current interest and has been treated in section 20. *Chimie douce* methods have been treated in chapter 2 but chapter 7 could as well be under this title. Addition of details of physical phenomena, of characterization (e.g. section 15), and of experimental set-up (e.g. sections 11–14) wherever essential is a feature which will be liked by the readers. Significant features of the syntheses of high  $T_c$  superconductors, microporous solids, high temperature ceramics, bifunctional catalysts, semiconductors etc. have been described. Materials from aerogels to zero expansion ceramics, from clay to clathracil have all found mention at appropriate places. Wide ranging techniques such as sol–gel, high pressure, self propagating flame, high temperature, vapour phase transport, electro-chemical deposition etc. have been described, although briefly, in this little book of 102 pages. There are more than 300 compounds mentioned by name and used as examples to illustrate the synthetic strategies. Close to 240 references covering literature reports up to 1994 make this a very valuable reference book for both students and teachers.

One may find that in these days of fabulous printing techniques, quality of production could have been better. However the technical editing has been excellent. The coverage would have been more complete if microwave synthesis had found a place in this book.

On the whole the book is written with superb clarity and brevity by an eminent author whose writings are quite well known to the scientific community. The book is highly recommended for all solid state scientists.

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