

## Book Review

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**Inorganic and organometallic polymers**

Springer, Berlin, 2005,

352 pp; price £33.50

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The subject matter of this book has a long history: the area of silicones stemming from the production of Siliconöle by A. Ladenburg in 1872. Interest in inorganic and organometallic polymers continues unabated today, and the present book is intended for undergraduate and graduate students in appropriate disciplines (chemistry, chemical engineering and materials science) together with scientists in industry.

The contents are presented in eight chapters, which cover [pages (number of references)]: Problems and prospects of inorganic polymers [25 (53)]; Organic polymers [53 (30)]; Cyclo- and poly-phosphazenes [72 (39)]; Cyclophosphazene-containing polymers [26 (41)]; Other inorganic polymers that contain phosphorus, boron, and(or) sulphur [24 (33)]; Polysiloxanes [37 (40)]; Polysilanes and other silicon-containing polymers [43 (116)]; and Organometallic polymers [37 (73)]. The short opening chapter presents a useful introduction to the subject and a review of synthetic strategies. The balance of coverage is more controversial in relation to the second chapter. Whether in a book of

just over 300 pages on inorganic and organometallic polymers it is sensible to include a 53 page review of organic polymers, however well-written, must remain a matter of opinion, especially when this material is already available from numerous other sources. In terms of the overall coverage, the majority of space is devoted to main-group element polymers, an area in which the author has published extensively, while transition-metal derivatives are dealt with in 28 pages, the closing part of the final chapter.

Literature coverage is variable, as can be seen from the chapter survey above. The third chapter, the largest in the volume at 72 pages, has only 39 references. Of these, four refer to a single recent (2004) book on phosphazenes, and the latest reference which is not a review article, is dated 1999. Thus in these days of electronic retrieval of literature, this cannot be regarded as an up-to-date survey, still less a comprehensive one. Similar remarks could be made about other chapters; for example Chapter 4, where the bulk of the non-review literature is from the 1980s and 1990s, and only seven are post 2000. While the book could provide useful introductory reading, it is unlikely to be particularly helpful to a research-worker in the field, who would surely wish to have some mention of more recent developments. No book of this size could be comprehensive, but to give some flavour of the content, the reader will

look in vain for recently reported thermally reversible transition metal polymers obtained using dicarbenes, soluble, stable titanacyclobutene-containing polymers [although the earlier work of Bunz and coworkers on cyclobutadienyl (cyclopentadienyl) cobalt-containing systems is mentioned] or many of the systems with unusual magnetic properties or hyperbranched structures.

Another topic which might be sought in a volume of this title, and in which there is a great deal of current and highly innovative activity, is that of infinite network coordination compounds of the transition and post-transition metals; but this is also omitted.

The book is nicely produced, is written in a very clear, readable style ideally suited to the introduction the author wished to provide, is provided with a short (2½ page) index and is essentially error-free. While not providing an up-to-the minute survey, it would be an excellent introductory read for someone wanting a solid background in the areas covered.

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