

*Ultrasound in Synthesis*; by S.V. Ley and C.M.R. Low, Springer-Verlag, Berlin, 1989. x + 133 pages, DM 128 (hardcover). ISBN 3-540-51023-0.

This book appears as volume 27 in the *Reactivity and Structure Concepts in Organic Chemistry* series and is printed on high quality acid-free paper, a fact which is perhaps reflected in the relatively high cost of such a slim volume.

As its title suggests this is the most synthetically oriented example, of the recent books on this rapidly developing subject, to appear. There are thirteen chapters plus a short introduction, and a conclusion, references, and a subject index. Only one chapter is devoted to the physical basis of sonochemistry, the rest being given over to the synthetic applications of ultrasound. The great majority of sonochemical work has been carried out with heterogeneous systems, usually a metal and an organic solvent containing a substrate of interest. This means that much of the synthetic work described will be of interest to readers of this journal. The preparations and uses of, for example, organomagnesium, lithium, aluminium, and zinc reagents are covered, together with the effects of ultrasound on transition metal catalysts and transition metal carbonyls.

The 282 references are collected together at the end of the book and extend into 1988, and together they form a very useful source of information covering the wide ranging field of synthetic sonochemistry. Comparison must be made between this volume and *Ultrasound. Its Chemical, Physical, and Biological Effects*, edited by K.S. Suslick, and T.J. Mason and J.P. Lorimer's *Sonochemistry, Theory, Applications and Uses of Ultrasound in Chemistry*. This volume is certainly more expensive on a cost per page basis but overall is likely to be of much greater interest to the synthetic organometallic or organic chemist owing to its concentration on synthetic aspects. There is enough background in the "The Physical Basis of Sonochemistry" chapter of the book under review to satisfy those mildly curious about why this technique works, but for those requiring a more rigorous background the other two books are to be recommended.

As mentioned above, the paper used for this volume is of high quality but unfortunately, in the review copy, print from a page often shows through overleaf, this tends to spoil somewhat an otherwise very well presented book. There are a number of small typographical errors present together with some slightly irritating mistakes, for example, the meaning of the symbol 'Z' in scheme 76 is unclear and the structure of compound (11) on page 49 is described as "tetramesityl silylene" instead of tetramesityldisilene. Such errors do not detract greatly from a generally wide-ranging and thorough treatment of the subject matter. Any synthetic chemist already having an interest in this technique, or one who wonders what might be done with ultrasound, will find this book of great interest.

*Department of Chemistry and Applied Chemistry,  
University of Salford, Salford M5 4WT (U.K.)*

**Paul D. Lickiss**