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Book Reviews

Specialist Periodical Reports: Photochemistry Volume 6

London, 1975: The Chemical Society. Senior Reporter: D. Bryce-Smith; pp. 796 + xxiii; Price £27.50. ISBN 0 85196 055 9 (Lib. of Congress 73-17909).

The sixth volume in the series reviews literature published between June 1973 and June 1974. The task was clearly a mammoth one and the Senior Reporter and his team are to be congratulated on the production, on a reasonable time scale, of such a wide survey. The book is divided into five parts, of which I, "Physical Aspects of Photochemistry", IV, "Polymer Photochemistry" and V, "Photochemical Aspects of Solar Energy Conversion" are likely to be of particular interest to readers of the *Journal of Photochemistry*. (The other parts - occupying 400 pages - are II, "Photochemistry of Inorganic and Organometallic Compounds", and III, "Organic Aspects of Photochemistry".)

Part I carries chapters on Spectroscopic and theoretical aspects (D. Phillips); Developments in instrumentation and techniques (M. A. West); Photophysical processes in condensed phases (K. Salisbury); and Gas-phase photoprocesses (D. Phillips).

Part IV is written entirely by David Phillips and includes chapters on photopolymerization and the photophysical and photochemical properties of polymers; there are five chapters devoted to different aspects of photodegradation (photodegradation, photodisposable plastics, dye tendering, photostabilization and so on). Part IV ends with a very useful review of the Patent Literature, three comprehensive tables being provided.

Dr Mary Archer is the reporter for Part V. Solar energy utilization is a new topic for the "Photochemistry" series, and Dr. Archer has not confined her review solely to material published during the 1973 - 74 period. Indeed, Part V differs somewhat from the other main sections of the book in that it is rather less a listing of literature references and rather more an analysis of what has been, and what might be, achieved. Careful consideration is given to the theoretical aspects of the conversion of light into chemical free energy; and then the photodecomposition of water, dye sensitized reactions and isomerization reactions are considered separately. Photovoltaic power conversion and photobiological conversion systems are also examined. The chapter ends with some speculation on photosyntheses that "Might be Carried Out" using solar energy.

The book is so jam-packed with literature reports that it is (with the exception of Part V) of necessity somewhat uncritical in tone. The real danger in this is that the reader should regard the material published in

1973 - 74 and reported here as automatically supplanting earlier information. Subject to this constraint, the volume is a really useful addition to the photochemist's armoury. One helpful modification would be the inclusion of a subject (or at least formula) index. As in previous years, the various reporters appear to have covered the field comprehensively and exhaustively. To be sure, there are a few errors of fact, such as where the content of a published paper is misquoted, or the emphasis in a paper misrepresented. Such could hardly fail to be the case in an undertaking on the scale of the Specialist Periodical Reports; we should be grateful to Professor Bryce-Smith and his reporters for their hard work. Dr Archer's last sentence ends "you did your experiments in the summer and wrote them up in the winter". I am surprised that the "Photochemistry" team had any time for experiments even in the summer, but the *1974 - 75* literature clearly shows that their research did not suffer unduly.

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