

Theoretical and experimental aspects of heterojunctions and semiconductor-metal Schottky barriers are reviewed in chapters by Townsend, by Loferski and by Bloss and Schock. All three chapters are comprehensive and they complement each other quite well. In particular, the consideration of solar energy conversion using tandem voltaic cells (by Loferski) makes very interesting reading. In the final chapter a theoretical treatment of recombination in solar cells is presented by Landsberg. Although well presented, it is difficult to follow.

Overall, the book is a very useful acquisition. It contains a wealth of information and reference data invaluable to research workers engaged in this field. Its real appeal is to specialist workers; it is not suitable for light reading, and as such its available market is rather limited.

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Specialist Periodical Reports: Photochemistry, Vol. 11

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Specialist Periodical Reports: Photochemistry, Vol. 12

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I have always been uneasy about the delay between the review period covered and the appearance of the *Specialist Periodical Reports: Photochemistry*. As a result, I had written in somewhat critical tones about the publication of Vol. 11, when Vol. 12 arrived on my desk. In the event, it seems fairer to review both volumes together. Volume 11, which was published in November 1981, covers the literature from July 1978 to June 1979, so that the material considered was from 28 to 40 months old. The following year's literature is reviewed in Vol. 12 (March 1982), so that we have moved 8 months nearer restoring "the original objective of publication within 1 year at the most following the end of the review period". Whatever the publication difficulties, the delays must give rise to some concern, since one of the more important functions of the Reports is to make readily accessible references to *recent* contributions in photochemical research. We are promised by the Senior Reporter that every effort will be made to publish Vol. 13 on time, which presumably means that we may expect to see it by the end of June 1982.

The format of the two volumes follows that of earlier Reports. The reader should not expect to find much in the way of descriptive or, more particularly, critical reviews. Rather, the Reports attempt to give a comprehensive survey of the published literature, with the citations being connected

in a logical way. The chapters common to both volumes are as follows: Photophysical processes in condensed phases, by R. B. Cundall and M. Wyn-Jones; Gas phase photoprocesses, by G. Hancock; The photochemistry of transition metal complexes, by A. Cox; The photochemistry of transition metal organometallic compounds, carbonyls and low oxidation state complexes, by J. M. Kelly (Vol. 11) and by J. M. Kelly and C. Long (Vol. 12); Photolysis of carbonyl compounds, by W. M. Horspool; Photochemistry of olefins, acetylenes and related compounds, by W. M. Horspool; Photochemistry of aromatic compounds, by J. D. Coyle; Photoreduction and oxidation, by H. A. J. Carless (Vol. 11) and by A. Cox (Vol. 12); Photoreactions of compounds containing heteroatoms other than oxygen, by S. T. Reid; Photoelimination, by S. T. Reid; Polymer photochemistry, by N. S. Allen; Photochemical aspects of solar energy conversion, by M. D. Archer (Vol. 11) and by L. M. Peter (Vol. 12). Spectroscopic and theoretical aspects are covered by R. Devonshire in Vol. 11; these subjects are supposed to alternate in successive volumes with the topic "Instrumentation and techniques", although the latter is not, in fact, reviewed in Vol. 12. Volume 12 does, however, have a chapter entitled "Photochemistry of compounds of main group elements", which is a 2 year review; for future volumes the review should appear annually.

The dry recital of chapter titles conceals the immense amount of work that the reporters have put into their reviews, but it does indicate the scope of the Reports. It is, indeed, this very scope that leads to the misgivings I have about these volumes: the terseness of the individual chapters, and the price of the books. Much has been done in the last decades to identify photochemistry as a homogeneous scientific discipline, and the photochemical community has undoubtedly benefited from this identification. What is certainly true is that we are concerned with physical or chemical processes in which photons appear as products or reactants. However, the interest in the processes ranges from quantum theoretical description of the nature of the interaction on the one hand to synthetic organic chemistry on the other. Thus the span is essentially as wide as that of chemistry itself. It seems to me that Professor Bryce-Smith, as Senior Reporter, performs a valuable service in bringing to our attention, in his "introduction and review of the year", those highlights of which all photochemists should be aware. Although I am a firm believer in a broad knowledge and interest in scientific endeavour, I am not at all sure whether the main chapters in the volumes will help to achieve these aims. Longer and more explanatory reviews by the authors would make far more interesting and stimulating reading but would lead to volumes of unmanageable length, if the present format were retained. The cost of the books is already high enough. At £70 for each volume, the price is some 75% higher than for Vol. 10. In fact, the price per page is not unreasonable for works of this nature; it is the sheer length that makes the volumes expensive, at least for those not entitled to concessionary rates. From the point of view of libraries, it probably does not matter that the whole field is covered in a single volume, and there may even be economies of scale. However, I do wonder whether individuals might not be better

served if the Reports were truly "specialist": the chapters could be expanded (thus, perversely, becoming more useful to the non-specialist), the price could be reduced and the production schedules could probably be maintained more readily.

I am sad that my admiration for the *Specialist Periodical Reports* has become rather reserved. I hope that Professor Bryce-Smith, his reporters and the Royal Society of Chemistry will be giving some thought to how the series might evolve. More important, I hope that they will not be discouraged by the difficulties and that they will continue, in some form, the valuable and exacting task of providing literature surveys for all photochemists.

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