

## Book Review

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### *Modern Molecular Photochemistry*

by N. J. Turro; published by Benjamin-Cummings, Menlo Park, CA, 1978; 628 pp.; price, £14.95

The author's previous book *Molecular Photochemistry* (1965) represented a milestone as it was the first to deal with organic photochemistry at an introductory level. Its publication was followed during the early and mid-1970s by the appearance of a considerable number of other textbooks with similar aims, paralleling the rapid growth in research publications as photochemistry developed into a substantial and important branch of chemistry. While a direct descendant, *Modern Molecular Photochemistry* is much more than simply an updated version of the earlier text, being almost wholly rewritten and much expanded, which is a reflection of the tremendous advances in the subject over the intervening years. It is certainly the most up-to-date text currently available and, of its type, is one of the most comprehensive. It should be said though that the coverage is wholly academic with no reference to any of the numerous biological aspects or technological uses of photochemistry.

Following an introductory chapter, which aims to present an overview of organic photochemistry, there are five chapters which deal with the photophysics of absorptive, radiative and non-radiative processes. There are then two chapters concerned with theoretical and mechanistic organic photochemistry, one on energy transfer, four which cover the wide range of organic photoreactions and a final chapter concerned with organic chemiluminescent reactions. Each chapter contains many examples and is extensively referenced; however, no problems are provided, in contrast with the author's earlier book.

The approach used throughout the book is qualitative and pictorial, making considerable use of the concept of potential energy surfaces; this, coupled with the way in which the author conveys his enthusiasm for the subject, makes the contents readily accessible. The chapters concerned with mechanistic photochemistry, energy transfer and chemiluminescent reactions are particularly well written, doubtless because of the author's own interests in these areas.

Unhappily there are a considerable number of typographical errors. There are also a number of places where the author's pursuit of pictorial descriptions conflicts with the precision claimed in the preface; for example, in explaining the low intensity of its first absorption band ( $S_0 \rightarrow S_1$ ), naphthalene is stated to be "so symmetrical that the electric vector of the light cannot easily find an axis along which to oscillate an electron", an inter-

pretation that would make an explanation of the high intensity of the third absorption band ( $S_0 \rightarrow S_3$ ) exceedingly difficult. Finally, the continued use of the non-SI ångström unit is to be deprecated.

Despite these shortcomings, it is a book I would not wish to be without and one that I would certainly recommend to teachers and students of photochemistry alike.

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