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Book Review

Excited states and free radicals in biology and medicine

edited by R.V. Bensasson, E.J. Land and T.G. Truscott, Oxford University Press, 1993.

I thoroughly enjoyed reading and leafing through this new book which is essentially an update of the authors' previous work. "*Flash photolysis and pulse radiolysis: Contributions to the chemistry of biology and medicine*". (Pergamon Press, 1983). These authors are internationally known for their use of flash photolysis and pulse radiolysis in studying excited state and radical species and this new book reflects their knowledge and interests in the same way that the 1983 volume does.

The early chapters of the book introduce relevant chemical and photochemical concepts and the two techniques themselves. These sections are quite standard and perfectly satisfactory although it would have perhaps been preferable to use more up-to-date examples in some cases. A whole chapter is then devoted to "Activated forms of oxygen", encompassing the production, detection and properties of singlet oxygen and various oxygen – containing radicals and radical anions. I can envisage this chapter being extremely useful to both undergraduate students and as an introduction for researchers and, for me, it is one of the strengths of the book.

The next three chapters concisely review the relevant (photo-) chemistry of nucleic acids and nucleic acid components, proteins and amino acids and carotenoids. These are then followed by a series of chapters which focus on specific biological problems; namely melanin biochemistry, photodermatology and three aspects of cancer therapy – radiotherapy, chemotherapy and photodynamic therapy. Each of these is easy to read and whilst I am sure there are other similar reviews available elsewhere in the recent literature it is very useful to have such series of recent surveys brought together in one place.

The book is adequately indexed and comprehensively referenced. The latter are mainly up to 1991, so chapters such as the one on photodynamic therapy, where considerable effort is currently being expended, will quite soon be showing their age. In their introduction the authors express the wish that their book will "...be useful to students, research scientists, teachers as well as physicians". I think they have largely achieved this wish. There is much here for both undergraduate and postgraduate students and for other researchers moving into any of these fields, although there may be rather too much chemistry for physicians. This is not a book that one would read from cover-to-cover but it provides an excellent starting point for new researchers or for general reading outside ones photochemical/photobiological specialisation. If your library has not yet purchased a copy – make sure that it does!

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