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Book Review

***Multimetallic and Macromolecular Inorganic Photochemistry. Molecular and Supramolecular Photochemistry*, *4*, Edited by V. Ramamurthy and Kirk S. Schanze, Marcel Dekker, New York, 1999. ISBN 0-8247-7392-6; pp. 345; US$ 175.00**

Inorganic photochemistry is now a fairly mature subject since publication of the first major text by Adamson and Fleischauer. Supramolecular chemistry is a more junior field of rapidly growing size and importance. The melding of these two fields is producing some fascinating work, much of which is reviewed in this volume, which contains seven chapters. There is considerable emphasis on potential applications especially in the sensor and molecular electronics fields.

The properties of π-conjugated polymers containing metal ions are reviewed by Wayne Jones and colleagues with molecular wires being an obvious long term objective. Their conductivity and photo-switching properties are included. The photophysics of metal clusters are presented by Yam and Lo. This chapter focuses on d^{10} supramolecular clusters. The chapter emphasizes the huge variety of ligands which form clusters with Cu(I), Ag(I) and Au(I) and luminesce. Ogawa then discusses electron transfer in synthetic polypeptides, a field in which he has made many major contributions. Here the emphasis is on electron transfer along chains of varying length determined by the polypeptide chains; transfer along helices and peptide organized assemblies is also considered in depth. Karen Brewer and colleagues review the photophysics of supramolecular complexes containing a tridentate terpyridine type motif. These are predominantly ruthenium and osmium species and here one can take full advantage of the maturity of the ruthenium and osmium field, especially combining information from optical spectroscopy and electrochemistry. Pilato and van Houten then look at the photophysics and photochemistry of dithiolate species. This is a fairly established area of chemistry which has seen new life in the observation of extensive luminescence, and indeed dual emission pathways. Ligand to ligand charge transfer states are also especially important here in addition to the more usual metal to ligand and ligand to metal states. Takagi and Inoue then present a study of the photophysics and photochemistry of metalloporphyrins and assemblies thereof. Extensive tables of absorption, emission and electrochemical potentials of the parent metalloporphyrins are presented as a basis for understanding the much more complex assemblies generated by covalent and non-covalent means. The book is amply illustrated but with somewhat variable quality. There is an index but it is not at all comprehensive.

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Overall the book does try to meld the basic fundamentals of inorganic photochemistry with the complex applications to supramolecular systems. It is quite successful in doing this and one can expect the field to continue to thrive. This book will provide a useful stimulus.

24 February 2000 The Editor's Desk.