

rate CO₂ reduction under ambient conditions", and also look at metal reduction processes, but extend discussion to unusual surfaces, such as proton exchange membranes and catalysts possibly permitting electrochemical reduction of CO₂ in the gas phase. Finally, Lewis and Shreve explore the "Photochemical and photoelectrochemical reduction of carbon dioxide", using photosensitizers and/or semiconductors.

The research area described in this book is very active but many problems remain to be resolved. This book is a very useful contribution to the further development of the field.

Charge transfer photochemistry of coordination compounds, by O. Horváth and K.L. Stevenson, VCH, Weinheim, 1993, 380 pp., DM238. ISBN 1-56081-564-7.

Great effort has been expended in the design of photoactive coordination compounds, mainly in the direction of solar energy conversion. This book builds upon the early work by Balzani and Carassiti (*Photochemistry of coordination compounds*, Academic Press, 1970) to bring this field up to date.

The first three chapters in the book provide the fundamental theory for light absorption and emission, and a discussion of the nature of the various possible charge transfer states. These are presented in a brief and rather incomplete fashion, since there exist other texts which cover the theory in much greater depth. Then follow 10 chapters, each dealing with the photo-induced redox reactions of metal complexes, organized by groups across the Periodic Table. Extensive spectroscopic data are presented, showing the effect of light on various species (photolysis). Photoproducts and quantum yields are discussed in depth. The book is moderately comprehensive for all the metal systems, except that it only surveys the enormous field of ruthenium polypyridines. The book will make very interesting reading for anyone interested in inorganic photochemistry and is highly recommended.

There is a subject index, a materials index (list of metal complexes considered, also partially indexed by ligand) and an addendum of more recent relevant references not covered in the text.

Metal ions in biological systems, Vol. 29, *Biological properties of metal alkyl derivatives*, edited by H. Sigel and A. Sigel, Marcel Dekker, New York, 1993, 448 pp. ISBN 0-8247-9022-7.

This is volume 29 in a series which began in 1973 and which was devoted to the then nascent field of metal ions in biological systems. The series has