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Book review

The Role of Oxygen in Chemistry and Biochemistry (Studies in Inorganic Chemistry 33); edited by W. Ando and Y. Moro-oka. Elsevier, Amsterdam, New York, 1988, 614 pages, U.S.$223.75, DFl425.00, ISBN 0-444-42937-9.

This volume presents some of the papers which were given at the "International Symposium on Activation of Dioxygen and Homogeneous Catalytic Oxidations", Tsukuba, Japan, 12–16 July 1987. There are four sections: Part A, entitled "Singlet oxygen, photooxygenations and nonmetallic oxidations" (26 papers, total 169 pages); Part B, entitled "Metal catalyzed oxidations" (27 papers, total 175 pages); Part C, entitled "Biological oxidation — enzymes and enzyme models" (33 papers, total 230 pages); and Part D (20 pages), entitled "Panel and group discussion" (5 sections: 1. "Singlet oxygen and photooxygenations"; 2. "Non-metallic oxidations"; 3. "Metal catalyzed oxidations"; 4. "Enzymes and enzyme models"; and 5. "Lipid peroxidation and oxygen toxicity").

Finally, there is a 7 page listing of the scientific programme of the meeting. From this it is evident that some important contributions are not available in printed form, including the plenary lectures by D.H.R. Barton and J.P. Collman.

The section which is probably of the greatest interest to readers of this Journal is Part B. The range of chemistry covered here is wide, as may be judged by a listing of some selected papers: "Epoxidation of olefins by iodosylbenzene catalyzed by metal ions and metal complexes" (J.S. Valentine et al.); "Sustained thermal and photochemical homogeneous catalytic functionalization of hydrocarbons by polyoxometalates" (C.L. Hill et al.); "Enantioselective oxidation of sulfides" (G. Modena et al.); "On the oxygen-17 NMR of some side-bonded dioxygen species" (O. Sciacovelli et al.); "Synthesis and characterization of the Ru(III) Schiff base complexes [Ru^{III}(Saloph)(Im)Cl] and [Ru^{III}(Salen)(Im)Cl]; kinetics of their oxygenation to Ru(V) oxo species and catalytic activity in the oxidation of cyclohexene" (M.M.T. Khan et al.); "Interaction of styrene oxide with diperoxomolybdenum(VI); formation of 6-membered peroxometallacycles" (E. Záhonyi-Budó and L.I. Simándi); "Aromatic aldehydes via catalytic oxidation" (R.A. Sheldon and N. de Heij); "Selective ruthenium-catalyzed oxidation of tertiary amines with hydroperoxide; a novel cytochrome P-450 type oxidation" (S. Murahashi and T. Naota); "Catalysis of homogeneous copper(II) chelate-amine complexes in the oxidation of 2,6-dialkylphenols" (S. Tsuruya et al.).

The book is produced by direct photographic reproduction from manuscripts. On the whole, the presentation is very clear, but there is no consistency with regard to the typewriter or wordprocessor used. Inevitably, a volume of this sort is only of limited value, more particularly because the majority of the contributions are in the nature of original papers, rather than reviews; and, presumably, much of the material has been or will be published elsewhere.

School of Chemistry and Molecular Sciences,
University of Sussex, Brighton BN1 9QJ (Great Britain)

M.F. Lappert