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Book reviews

Catalysis 1987 (Studies in Surface Science and Catalysis, Volume 38); edited by J.W. Ward, Amsterdam, Elsevier Science Publishers, 1988, xv + 950 pages, ISBN 0-444-42955-7

This volume contains many of the papers presented at the 10th North American Meeting of the Catalysis Society held in San Diego in May 1987. Although the editor states that homogeneous catalysis was covered by the symposium, there is little evidence of this in the papers reproduced. The only one which drew my attention was that from T.M Painter and A.R. Sanger, detailing recent and interesting studies of dinuclear rhodium complexes as catalysts for alkene hydrogenation and hydroformylation. If this is representative, they must have felt a little lonely!

By contrast many areas of heterogeneous catalysis are well represented. Supported metals, metal oxides and metal sulphides were much in evidence, and a number of the papers on zeolites showed real concern with the molecular basis of the catalysis. Carbon monoxide hydrogenation was considered by a number of authors, as was catalyst deactivation, and there were a considerable number of papers dealing with fundamental areas of surface science and spectroscopic techniques.

As I plodded towards the end of this volume I was beginning to wonder if the organometallic chemist had any real contribution to make to the development of practical, useable catalysts. It is unquestionably true that few of the elegant catalytic reactions developed using organometallic complexes have found large scale or widespread uses outside the research laboratory. The last four contributions to this volume address the problem of future directions in catalysis research. All the authors are uneasy about the falling spending on research in catalysis in industry, more especially since the Pimentel Report highlighted catalysis as a target research area for the future. All are optimistic about the contribution which homogeneous or hybrid catalysts can make, and one of the articles is concerned entirely with the uses of biocatalysts. The message is perhaps, that organometallic chemists are doing something useful in the field of catalysis, but that it will take considerable time and effort for these endeavours to lead to commercial processes. It is perhaps also worth remembering that the organometallic chemist has much to contribute to the understanding of the molecular basis of action of many heterogeneous catalysts.

Although this volume has been produced from camera-ready manuscripts, the quality of presentation is generally good. There is no index, but there is a rather comprehensive list of contents. This is primarily a volume for surface scientists or for chemists interested in heterogeneous catalysis, but the organometallic chemist who wishes to take an interest in these area will find it a useful key to current research in the field.

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