

elegant synthetic work to produce systems with novel properties is rightly emphasized throughout. Of particular interest to the organometallic chemists may be the work of Kahn on the quest for molecular ferromagnets through the synthesis of $Mn^{II} Cu^{II}$ bimetallic systems, and that of de Jongh on polynuclear metal cluster complexes viewed as "zero dimensional" systems.

The book has been produced in camera-ready format and is relatively free from errors. It is probably too expensive for the individual, but essential for all libraries associated with active inorganic chemistry departments.

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Topics in Current Chemistry, Volume 148, Electrochemistry III; edited E. Steckhan, Springer Verlag, 1988, DM148, xii-202 pages, ISBN 3-450-19180-1.

This is the third volume of the Topics in Current Chemistry series to deal with electrochemistry, and its contents reflect the many new departures in this field over recent years. The first and longest section, by Dieter Degner, deals with Organic Electrosynthesis in Industry. There are many problems associated with the applications of electrochemical methods to industrial scale organic synthesis, notably the need for special reactors, difficulties in purification, and the challenges of the continuous operation of a phase boundary reaction. Despite a large number of patents in this area there are few industrially implemented electroorganic processes, but the author foresees that this will change as we move to an era in which environmentally compatible processes are more desirable. The article is in many respects a most unusual one since most of the references are drawn from the patent literature; this is especially valuable, since it is an area which all but the specialist is unlikely to peruse in detail. I was a little disappointed not to find any mention of the new electrochemical techniques for the generation and regeneration of transition metal complexes in catalysis, but perhaps these were not patented.

Organic Electroreductions at Very Negative Potentials is the subject of the second section, by Essie Kariv-Miller, Ryszard I. Pacut and Gaye K. Lehman. These involve studies at the limit of the cathodic "potential window", (-2.7 to -3.1 V (SCE)) using mercury cathodes and tetraalkylammonium electrolytes. Thus preparative reductions of compounds which are inactive within the usual "potential window" have been accomplished. At these very negative potentials the tetraalkylammonium (TAA^+) cation and the mercury cathode combine to form reduced TAA-metal, which is considered to act as the electron transfer agent to the organic substrate. In particular, the reductions of aromatic compounds, alkenes and alkynes and aliphatic ketones are considered. A number of extremely efficient and selective reductions were accomplished, and it seems likely that this field will see many developments in the near future.

Tatsuya Shono's review deals with syntheses of alkaloids which use an electrochemical reaction as a key step. The reactions discussed fall into three groups, oxidative coupling, reactions α to the nitrogen atom of amines, and reductive addition and substitution. The final chapter by Sigeru Torii, Hideo Tanaka and

Tsutomu Inokuchi, considers the role of electrochemical methods in the transformation of β -lactam antibiotics and terpenoids. The electrochemical version of the palladium catalysed deprotection of allyl esters of penicillins will be of interest to organometallic chemists, as will the discussion of functionalisation of terpenoids with selenium reagents.

As always with this series, this volume is very well produced, with few typographic errors and clear diagrams. Whilst there is no subject index, each chapter has an extremely detailed contents list, so that material is easy to find. The author index for volumes 101–148 of the series is contained in this volume.

This continues to be a high quality, but unfortunately also high-priced, series. However, unlike some of the recent volume, this is a very well-focussed book, and electrochemists interested in organic synthesis will find something worth noting in each of the reviews. Organometallic chemistry is somewhat peripheral, and I would hope to see it playing a more central role in one of the future volumes on electrochemistry. Libraries should continue to subscribe to this series, and this volume should be considered for individual purchase by those working in this field.

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Dictionary of Organometallic Compounds. Fourth Supplement; edited by J.E. Macintyre, Chapman and Hall, London and New York, xiii + 520 pages, £245.00, ISBN 0-412-28170-8.

The supplement to this well-regarded dictionary brings systematic literature coverage up to mid-1987, but much later material is also included. Many of the approximately 1500 entries are wholly new, but others provide additional information on compounds that appeared in earlier volumes, and in such cases the original entry is reprinted here along with the supplementary material. As usual there is a helpful list of relevant books and review articles that have appeared since the earlier volumes were published.

There is a molecular formula index and also an index of Chemical Abstracts Service registry numbers; both indexes cover entries in the earlier volumes as well as this one. One of the outstanding features of the presentation is that the chemical identity of each compound is clearly shown, often in a structural diagram, so that it is fairly easy to look through every entry under a given element to seek out compounds of special interest.

The volumes in this series are very well produced, and can be expected to stand up well to the heavy use they should receive in any organization concerned with organometallic chemistry.

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