

NEWS

## *Book reviews*

### **Emerging Opportunities for Electroorganic Processes**

D. E. Danly, Marcel Dekker, New York, 1984

265 pp., \$525, ISBN 0-8247-7148-6

Dr Danly is well known for his work in connection with the development of the Monsanto processes for the hydrodimerization of acrylonitrile to adiponitrile. Hence there can be few more reliable sources for a review of the state of the art for industrial electro-organic processes. Certainly he has produced a text which is always clear and well balanced and covers, in turn, all the elements of electrochemistry, chemical engineering and economics for the understanding of the design of an electro-organic process. All interested in applied electrochemistry will enjoy this book.

The five chapters contain surveys of the types of organic reactions possible at electrodes and cell designs in the literature, more detailed discussions on the design of electrochemical reactor systems and the assessment of process economics and, finally, a case study of the benzene to hydroquinone conversion. While none of the material is unique to this book, the choice of material has been made with discernment and it is presented with clarity and brevity (there are, however, a considerable number of minor errors).

I presume from the style (the book is reproduced from camera-ready copy and loosebound) and cost of this book, that it is intended primarily to compete with consultants' reports as a guide to companies who might be considering an electro-organic process. In this, I wish it every success. The text would, however, be very welcome in the academic world and I hope that the publishers might find some way of reducing the price so that students and teachers will have greater access to it.

### **Electroorganic Synthesis, Methods and Applications: Part I, Oxidations**

S. Torii, Kodansha/VCH, Weinheim, 1985

338 pp., DM 138, ISBN 3-527-26318-7

This book continues the welcome, recent trend towards the publication of English translations of Japanese books on electrochemical topics, and it again very much reflects the strength of organic electrosynthesis in Japan.

Professor Torii has set out to survey the application of anodic oxidation in organic synthesis and has produced an excellent and valuable text. The material is well organized into chapters based on the functional groups in the starting material and the coverage of the literature is up to date (there are many 1984 references), fairly comprehensive, and a balanced view is taken of work from Europe, Japan and the USA. Throughout, stress is placed on synthesis and each reaction is accompanied by a clear statement of reaction conditions and the yield. In addition, the way in which electrolysis parameters influence the course of the reaction and hence selectivity is continuously emphasized.

Mechanism is discussed only to the extent of rationalizing reaction products and little account is taken of data from electroanalytical experiments. Certainly some of the proposed mechanisms will not meet with universal acceptance and the very organic view of the author is also apparent in the introductory chapter. Indeed, this part is rather weak and, for example, the discussion of constant current electrolysis is misleading; the electrode potential remains constant only if both the current and the concentration of starting material are held at the initial value.

Such criticism should not, however, detract from the usefulness of this book to those who wish to gain an overview of the scope of anodic oxidation or to look up the state of knowledge concerning a particular transformation. It is well translated, easy to read and relatively free from minor errors.

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