CATIONIC POLYMERISATION AND RELATED COMPLEXES

Edited by *P. H. Plesch.* Academic Press, Inc., New York, 1953. xii + 166 pp. 12 figs. Tables. 14.5 × 22.5 cm. $4.

THE title of this book is slightly misleading, for it deals not with cations in any definite respect, but rather with the catalytic effects of various electron-acceptor molecules, such as boron trifluoride, aluminum halides, or tin(IV) compounds, upon the mechanisms of polymerization of organic units. The material is presented in the manner of a symposium of the Faraday Society: a series of research or review papers on various aspects of the subject, each with a bibliography and discussion. The whole effect is to aid the development of ideas for further research, for most of the papers not only present solid facts but also emphasize aspects which are not yet clearly understood. The discussions also help to demonstrate what is yet to be done to improve understanding.

The first section consists of eight papers (plus introduction and summary) devoted primarily to complex-formation between inorganic electron-acceptors and organic substances. Of most interest in relation to the process of polymerization are the arylonium complexes such as $C_6H_7Al_2Br_7$ (Eley), the latest ideas of bonding in the alkene-metal complexes (Chatt), and a survey of the problem of energetics of coordinate bonding (Skinner). The second section is concerned almost entirely with the polymerization processes themselves: styrene and its derivatives, under the influence of $SnCl_4$, $TiCl_4$, Al_2Cl_6, $SbCl_3$, BF_3, and $HClO_4$, with or without hydrogen halides; then alkenes, including carbonium ion reactions. Altogether there are 42 contributors, from five different countries, and it would appear that the original meeting (at the University College of North Staffordshire, March, 1952) must have been a very interesting and high-level occasion. The general tone is nondogmatic and, considering the highly specialized nature of the subject, the breadth of fundamental interests covered is remarkable.

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INDUCTION AND DIELECTRIC HEATING

J. Wesley Cable, Consulting Engineer. Reinhold Publishing Corp., New York, 1954. vii + 576 pp. 16 × 23.5 cm. $12.50.

ALTHOUGH induction heating has been used for more than fifty years in the metallurgical industry, dielectric heating is a relative newcomer which is finding uses in a variety of industries. The author says, "I have had one idea in mind, that of telling the engineer, the designer, the heat-treater, the maintenance man, about the practical accomplishments and application of these two new tools for industry, with only a smattering of the theory behind their use. Such will be the tenor of this book."

As would be expected, the first half of the book, on induction heating, deals with metallurgical applications. The second half, on dielectric heating, discusses its applications in the plastics industry, woodworking field, baking foundry cores, food-processing field, sterilization and allied processes, and moisture removal. The chapter on the future of dielectric heating points out interesting possibilities.

If one wants to know the "how" and not much about the "why" of induction and dielectric heating, this book will be of use to him. The potentialities of dielectric heating in the chemical laboratory and chemical industry are great, and the present applications of this form of heating can be read with interest by chemists and chemical engineers.

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ELSEVIER'S ENCYCLOPAEDIA OF ORGANIC CHEMISTRY. SERIES III: CARBOISOCYCLIC CONDENSED COMPOUNDS. VOLUME 12B: NAPHTHOIC ACIDS AND THEIR HALOGEN, NITROGEN AND HYDROXYL DERIVATIVES

Edited by *F. Radt.* Elsevier Publishing Co., Houston, Texas, 1953. xliii + 595 pp. (text) + 45 pp. (index). 17.5 × 26 cm. Subscription price, $42. Serial price, $49. Single copy, $56.

THIS part of "Elsevier's Encyclopaedia" differs only from the one recently reviewed here (THIS JOURNAL, **31,** 104 (1954)) by coverage of naphthalenes with one carboxyl group attached directly to the ring rather than to a side chain. These naphthoic acids, and also their hydro derivatives and homologues, are listed in respect of halogen and nonfunctioning nitrogen derivatives, as well as of hydroxy and amino compounds. Included, usually after these functioning derivatives, are the lactones and lactams related by the principle of anhydrosynthesis. The proximity of these heterocyclic entries, and others like the cyclic methylene ethers, conforms with the editorial policy of collecting all data pertinent to a key compound as close to it as possible. The resulting convenience during an exploratory literature search is apparent.

The value of this "Encyclopaedia" has once been expressed by the reviewer and needs no repetition. It is evident that the wide adoption of "Elsevier" will not depend upon the question of its desirability but rather upon its cost. The publishers have realized this limitation by offering a "deferred payment plan." Thus those who, sensibly, have waited until the "Encyclopaedia" proved its worth may now acquire it by an arrangement that is convenient to their annual budgetary allotments.

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DETERGENCY EVALUATION AND TESTING

Jay C. Harris, Monsanto Chemical Co., Dayton, Ohio. Interscience Publishers, Inc., New York, 1954. x + 210 pp. 12.5 × 18.5 cm. 26 figs. 15 tables. $3.75.

THE major phases of detergent evaluation, both qualitative and quantitative, are described, with illustrations of several types of equipment. Screening tests include wetting, acid and alkali stability, surface and interfacial tension, lime-soap dispersion, lather values, and others. Results for these are given for ten Monsanto detergent products.

Preparation of standard soiled fabrics includes cotton, wool,