New Books

L.A. Witting, Book Review Editor

Base-Catalyzed Reactions of Hydrocarbons and Related Compounds, H. Pines and W.M. Stalick, (Academic Press, NY, 1977, 587 p., $57.00).

The authors state that this volume is restricted mainly to a discussion of base-catalyzed conversion of hydrocarbons, and reviews that work considered to be fundamental to the topic under discussion. The book, after a short introduction, contains chapters detailing the isomerization of olefins, acetylenes and allenes; dimerization and oligomerization of $\alpha\beta$ unsaturated esters and nitriles; reactions of aromatic hydrocarbons with olefins; reaction of alkylpyridines and alkenylpyridines, homogeneous carbon addition reactions; reactions of aprotic solvents with olefins with miscellaneous compounds; addition of ammonia, amines and anilines to olefinic hydrocarbons; hydrogenation; dehydrogenation aromatization and hydrogen trasfer; oxidation and dehydration of alcohols.

The book makes abundant use of organic structures and reactions to illustrate the reactions discussed. The structures as printed are clear cut and readable. The reactions discussed are referenced by the inclusion of a reference list at the end of each chapter; an author index and comprehensive subject index complete the volume.

This book consists of fundamental organic chemistry of hydrocarbon reactions and, as such, is of a basic reference nature rather than textual. Due to its cost, it will find a place in reference libraries, rather than chemists' bookshelves. Many of the reactions discussed, such as hydrogenation, oxidation, and dehydration, will be of interest to organic chemists' within the AOCS; for these persons it will be recommended reading.

E.G. PERKINS
Department of Food Science
University of Illinois
Urbana, IL 61801

Encyclopedia of Chemical Technology, Vol. 1, Kirk-Othmer, (John Wiley & Sons, 1978, 967 p., $95.00).

This is Volume 1 of the new third edition. It follows in the footsteps of the preceeding editions and has been expanded by the addition of new, timely topics. All of the articles have been updated and rewritten by authorities in the field.

This series needs no introduction; it is a major collection of topics for reference use by the chemist and chemist engineer. In today's society it is a valuable reference book for the educated layman and student.

The first volume concerns itself with thirty-two different topics designated A (abherants) to alkanolamines. The material was written by eighty contributors. Thus, this reference work can be highly recommended to anyone wishing a detailed introduction to a topic in chemical technology. For a deeper penetration into any area in these volumes, additional references are included at the end of each article.

E.G. PERKINS
Department of Food Science
University of Illinois
Urbana, IL 61801

Gas Chromatography With Glass Capillary Columns, Walter Jennings, (Academic Press, NY, 1978, 184 p., $16.50).

There is a resurgence of interest in glass capillary chromatography, as evidenced by the now common commercial availability and the availability of specially constructed or modified instrumental systems to handle them.

It is the stated goal of this book to introduce the reader to this technology and aid him or her in the selection and use of glass capillary columns. To this end, the volume has a short introductory chapter on standard gas chromatographic theory and separation which occurs in most such treatments. The second chapter discusses the treatments of the glass capillary wall prior to coating, followed by another chapter on column coating techniques. Even the best column will suffer in the separting process if the inlet system is not well designed, and the following chapter treats this important matter. Subsequent chapters deal with column installation, measurement of column efficiency and treatment of retention data. Chapters are devoted to temperature programming, carrier gas flow considerations, column stability and selection, and also sample preparation. Separate treatment is given to the analysis of difficult samples and derivatization. A chapter which shows many chromatograms of typical separations obtained using capillary columns has been included.

Four useful appendices have been included dealing with gas chromatographic nomenclature, liquid phases and their McReynolds constants, and an extensive collection of data using porus polymer-columns for the separation of many common compounds. Each chapter contains a bibliography which appears to be adequate and up to date. I found this book to be very informative on the practical aspects of glass capillary chromatography, and recommend it wholeheartedly to analysts about to work in the area.

E.G. PERKINS
Department of Food Science
University of Illinois
Urbana, IL 61801

Surfactants and Interfacial Phenomena, Milton J. Rosen, (Wiley Interscience, New York, NY, 1978, 304 p., $22.50).

This is both an excellent introductory book for chemists who are new in the field of surfactants and a good review for those who have been in this field for years. In view of the widening of the gap between pure and applied chemistry, the author wrote this book attempting to bridge such a gap in the area of surfactants. The efforts have been successful and should receive appreciation for most readers.

The book is divided into ten chapters. The first chapter gives a brief yet broad overview on surfactants which are currently commercially available – their structure types, characteristic features, major uses, relative importance, advantages and disadvantages. Each of the remaining chapters is devoted to a discussion of some interfacial phenomenon, the role surfactants play, and the effect of various other factors. The contents are well outlined by chapter titles: 2, Adsorption of Surface Active Agents at Interface: The Electric Double Layer; 3, Micelle Formation by Surfactants; 4, Solubilization by Solutions of Surfactants: Micellar Catalysis; 5, Reduction of Surface and Interfacial Tension by Surfactants; 6, Wetting and Its Modi-

fication by Surfactants; 7, Foaming and Antifoaming by Aqueous Solutions of Surfactants; 8, Emulsification by Surfactants; 9, Dispersion and Aggregation of Solids in Liquid Media by Surfactants; and 10, Detergency and Its Modification by Surfactants.

Throughout the book the author has attempted to give various possible explanations to how and why surfactants function in interfacial phenomena. Relationships of surfactant structure to its interfacial behavior are also extensively discussed. Terms are clearly defined. Special emphasis has been placed on distinguishing similar or closely related terms such as the efficiency and effectiveness of surfactants; solubilization, hydrotropy and emulsification; spreading, adhesional and immersional wetting, and lyophilic and lyophobic dispersions.

Appropriate graphical illustration are given for phenomena or concepts which are relatively difficult to comprehend. References arranged by the author are listed at the end of each chapter which supplement the contents. However, listing of the most recent literature is very limited, which probably is the only shortcoming of this book.

The book is well written and very easy to read. Typographical errors are nearly undetectable. The price is affordable to most people. It is highly recommended to every surfactant chemist as well as surface and colloid chemists.

KUO-YANN LAI
Colgate-Palmolive Company
Piscataway, NJ 08854

Lipids as a Source of Flavor, Michael K. Supran, (A.C.S. Symposium Series, American Chemical Society, Washington, D.C., 1978, 121 p., $17.50).

This book is a small monograph, published in camera ready form, and it is the product of a symposium sponsored by the flavor subdivision of the Division of Agriculture and Food Chemistry of the A.C.S. The book consists of eight chapters; The Role Lipids Play in the Positive and Negative Flavor of Food, Chemistry of Deep Fat Fried Flavor, Volatiles from Frying Fats: A Comparative Study, Generation of Aroma Compounds by Photo Oxidation of Unsaturated Fatty Esters, Instrumental Analysis of Volatiles in Food Products, Chemical Changes Involved in the Oxidation of Lipids in Foods, Flavor Problems in the Usage of Soybean Oil and Meal, and Flavors from Lipids by Microbiological Action.

The primary chapter content is review material, although in many cases a considerable amount of as yet unpublished material has been included. The index of topics appears complete. All in all, this is a nice little book to have on the shelf, if one is interested in lipid flavor and chemistry.

E.G. PERKINS
Department of Food Science
University of Illinois
Urbana, IL 61801 ●

New Publications

Regional Guide to Food Testing Laboratories and Consultants, Institute of Food Technologists, 44 p., 1978, $10, postpaid. A directory describing capability and areas of expertise of approximately 450 food testing labs in the U.S. and elsewhere; order from: IFT Regional Guide, Lockbox 94332, Chicago, IL 60690 USA. ●

Colfax completes refinery expansion

Colfax, Inc., of Pawtucket, RI, has completed work on its expansion into refinery work that began in 1965 and is considering entry into the retail market, initially through private label shortening, margarines, and vegetable oils.

Colfax began in 1932 as a packager of refined fats and oils, obtaining refined products from contractors. Since 1965, Colfax has installed 10,000 and 30,000 pounds per hour edible oil refinery units, a vacuum bleaching system, a semicontinuous hydrogenation system and packaging line. The refinery units utilize De Laval centrifuges while Sullivan Systems, a Subsidiary of the De Laval Separator Co., has provided a loss-control monitoring system, vacuum bleaching engineering, hydrogenation unit, and a deodorization unit using Sullivan's closed loop baromer barometric system. Packaging lines were from Chemetron Corporation and now permit Colfax to ship products in rail tank cars, 55-gallon drums, 50-pound cubes and 5½- and 3-pound cans.

Colfax also has raised its tank farm storage capacity to 14 million pounds from six million pounds in 1965. ●