

ings thereof. In the Table of Contents, the papers are grouped into seven categories; viz., Modelling and Simulation, Drying of Granular Solids, Drying of Grains, Spray Drying, Drying of Paper and Continuous Sheets, Energy Aspects of Drying Solids, and Miscellaneous Topics. The smallest category, Spray Drying, contains three papers which were published previously. The largest category, Miscellaneous Topics, contains 16 papers with ca. one third published previously and ca. two thirds related to drying experience with a variety of natural products. Only three papers in this book have industrial authorship and four papers were either authored or coauthored by the editor.

Industrial drying involves many considerations other than simply moisture removal. Primary selections of drying equipment usually are based on the nature of the feedstock and a final choice generally is determined by the desired physical form of the dried solids. Mode and conditions of operation are normally dictated by required product properties. The coverage of the papers in this volume is somewhat broader than the category groupings suggest and reflects to a certain degree the variety and complexity of these considerations. Topics receiving greater attention are internal mechanism of drying, external mechanism of drying including use of superheated vapor, effect of feed formulation on product properties including flavor loss, particle and sheet mechanics, performance experience, and various aspects of system integration and energy utilization. Lesser attention is given to control and instrumentation, equipment design and selection, cyclic operation effects, equilibrium moisture content, and the roasting of ores. A review of electroosmotic dewatering also is included. Many of the papers contain new experimental data. A subject index containing 151 entries details the technical content. As might be anticipated, there is wide variation in breadth of coverage, style of presentation and quality of content.

The Preface of this book indicates that the individual papers were reproduced as submitted by the authors; there is no evidence of any effort to edit the manu-

scripts before final submission. In some instances reading is very difficult and, on occasion, understanding almost impossible. Typing and/or spelling errors are found in both titles and texts as well as in the book's Preface and Acknowledgments. Improper grammar, poor syntax, and awkward or incorrect word choice are commonly encountered. Particularly frustrating are incomplete nomenclature listings and undefined nomenclature. The lack of any technical review is unfortunate and certain explanations and interpretations of observed or suspected phenomena must be accessed with care.

The text is printed by photocopy reproduction on paper of only moderate quality. The cloth cover is marginal and the binding workmanship is poor. The publisher's price of over \$0.11 per printed page is difficult to justify. Regardless of interest or preconceived need, acquisition of this publication should be made only after prudent inspection.

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Catalytic Cracking: Catalysis, Chemistry, and Kinetics

Wojciechowski, B. W. and Corma, A. Marcel Dekker, 1986, 236 pp., \$55.00 (U.S. and Canada), \$66.00 (all other countries)

This book is an important extension of earlier reviews of catalytic cracking. It is well written, and the authors have presented an extensive literature review with interpretation of the chemistry, mechanism, and kinetics of catalytic cracking over acidic catalysts. The focus is on industrially important aluminosilicate catalysts, namely zeolites, and to some extent, amorphous silica/alumina.

The section on carbocation behavior covers the generation, energetics, structure and reactivity patterns of these important positive species, with strong emphasis on patterns observed in "superacids," often in the liquid phase. The authors then attempt to correlate these patterns with those observed with solid aluminosilicate catalysts. Also included is a discussion of the chemistry of carbocat-

ions in electrophilic aromatic reactions, paraffin alkylation, and related hydrocarbon systems.

In the section on cracking catalysts, the authors draw heavily from and expand upon material from earlier reviews. Amorphous vs crystalline catalysts is compared with discussion of acidic properties, thermochemistry, Lewis vs Brönsted sites, catalyst modification, catalyst preparation, the effects of metals, and properties of commercial catalysts. This is followed by a section on catalyst decay and selectivity behavior, which reviews and interprets different viewpoints on this complex and often controversial subject. Considerable emphasis is given to the Wojciechowski time-on-stream (TOS) concept.

The last two major sections describe conversion selectivity patterns, mechanism, and kinetics in reactions of pure hydrocarbons and gas oils, respectively, over amorphous and zeolitic cracking catalysts. These sections comprise a broad literature review with considerable mechanistic interpretation.

Because it contains a detailed, interpretive discussion of the literature up through early 1985, and thus expands upon earlier reviews, this book will be useful to academic and industrial chemists and engineers, as well as graduate students interested in a broad overview of the reaction mechanism and kinetics dimensions of catalytic cracking. The book cites over 600 literature references. Some difficult and even controversial aspects of catalytic cracking are discussed with good perspective. However, catalytic cracking is an exceptionally complex and multidimensional process system. The authors' hope—that the book be a "map" of catalytic cracking and that the "new methodologies for the exploration of this field" presented therein "will remove the ambiguities so often present in previous reports"—is only partially achieved. Nevertheless, the book is a positive addition to the literature of catalytic cracking and is recommended reading.

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