vestigators wishing to conduct rational research into chemical reaction systems.

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Catalytic Hydrogenation. Techniques and Applications in Organic Synthesis. By ROBERT L. AUGUSTINE. Marcel Dekker, Inc. New York, 1965. xii + 188 pp. Price $8.75.

In the book entitled "Catalytic Hydrogenation" a range of recipes is presented for the application of heterogeneous catalytic hydrogenation in organic synthesis. The recipes are mainly taken from literature, and partly repeated by the author. In Chapter 2 a survey is given of the equipment required for catalytic hydrogenation. The description of this equipment is divided into three categories: high pressure and high temperature hydrogenators, low pressure and low temperature hydrogenators, and apparatus used at atmospheric pressure and room temperature. The discussion dealing with "high pressure autoclaves" might have contained a warning on the corrosion resistance of the material, also because in the following chapters reactions are discussed in which strongly corrosive compounds are used or formed (e.g., hydrochloric acid). In Chapter 3 various hydrogenation catalysts and their preparation and main characteristic properties are dealt with. In addition the influence of the reaction conditions (temperature, pressure, solvent, and amount of catalyst) on the reaction velocity and on the selectivity of hydrogenations is considered.

The following chapters, 4, 5, and 6, constitute the highlights of the book. In Chapters 4 and 5 recipes are provided for the hydrogenation of many functional groups in organic compounds, such as double bonds and triple bonds, aromatics, aldehydes, ketones, esters, lactones, nitrogenous groups and heterocyclic groups. In Chapter 6 the hydrogenolysis of the chemical bond between carbon and other atoms is discussed. It is a great pity that the reaction equations are not systematically taken up in the text. In the examples much attention is drawn to the stereochemistry of heterogeneous hydrogenation. The selective character of various hydrogenations is illustrated on the basis of complex compounds, such as steroids, and aromatic ketones of compounds containing several functional groups. Knowledge on this subject will be limited with most organic chemists and biochemists. Therefore, the book is particularly recommended to them, also because the author has succeeded in demonstrating how valuable the tool of heterogeneous catalytic hydrogenation is to the chemist doing organosynthetic work. The price of the book is on a reasonable level.

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