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Book review

Effets de Sels en chimie organique et organométallique, by A. Loupy and B. Tchoubar, Ed. Dunod, Paris 1988, p. 311, ISBN 2-04-16986-5, ff. 350.–.

The aim of this book is to give a general account on the influence of salts on the kinetics, the regio- and the stereoselectivity in organic and organometallic reactions. After her well-known book on solvent effects in organic chemistry, B. Tchoubar proceeds even deeper into the study of the “medium effects” on reaction mechanisms, and presents in collaboration with A. Loupy, a theoretical chemist, this complex aspect of reactions in the liquid phase, with the utmost clarity.

Generalities on Lewis acidity–basicity, ion pairs, drying effect, are followed by a chapter on salt effects in the cleavage of single bonds: electrophilic and nucleophilic assistance of the heterolytic rupture of C–X bonds, and specific salt effects in S_N2 reactions.

Chapter III focuses on salt effects during addition reactions on multiple bonds (ketones, esters, nitriles), double activation (bifunctional catalysis) and electrophilic additions to C=C bonds.

In chapter IV, regioselectivity under salt control is described in terms of Hofmann versus Saytzeff eliminations, nucleophilic addition versus enolisation of ketones, 1,2 versus 1,4 additions to enones.

Chapter V covers the stereochemistry of eliminations, substitutions, and addition reactions under the influence of salts, and the asymmetric Michael-type synthesis, with various organometallics, pyramidal and planar carbanions. A short chapter is then devoted to chemical equilibria, and how they can be shifted by solvents and salts.

The last chapter deals with organometallic chemistry more directly, viz., that of main group metals, carbenoids, and transition metals.

Throughout this concise book, a constant effort has been made, to analyze and discuss all reaction parameters, and their conflicting aspects, in such a way that it is beneficial not only for “organic chemistry” but for any chemistry in solutions. It will be an invaluable aid for chemists working in this broad area.

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