

The Art of Writing Reasonable Organic Reaction Mechanisms, 2nd edition; by R. B. Grossman; Springer: New York, 2003, 355 pages; ISBN: 0-387-95468-6

Reaction mechanisms are indispensable in organic chemistry. They are common denominators which put order to the bewildering range of reactions found in carbon-based compounds. Nevertheless they are and remain to be models of that reflect our current understanding of a given reaction. How deep this understanding will reach and how much information a mechanistic scheme will convey depends on how-fine grained the spatial as well as temporal analysis of the reaction or / and how advanced the theoretical concepts of molecular structure and reactivity underlying the mechanism are.

Robert Grossman in his book attempts to familiarize the student with the awesome power of reaction mechanisms as illuminating general frameworks as well as with their limits. The book picks up the apprentice of the art and science of organic chemistry right at the point where he or she leaves his introductory lecture or course. The Art of Writing Reasonable Organic Reaction Mechanisms is suitable for all learners who are familiar with the main organic compound classes. Some basic physical chemistry will be quite helpful, too, to make full use of all the presented concepts.

The subject matter is "chopped up" into familiar categories: ionic mechanisms under basic and acidic conditions, respectively. Pericyclic reactions, followed by radical mechanisms. Finally reactions catalyzed/mediated by transition metals and their complexes. Treatment of the topics is balanced, devoting chapters of (generously gauged) similar length to each discussion.

Particularly pleasing are the numerous "common error alerts", valuable warnings against well-disguised traps the unexperienced is prone to fall into. Students will encounter many of the traps so glaringly pointed out by Grossman in many other general and non-general textbooks too, but there usually hidden in the problems or exercises at

the chapter ends, leaving the student to learn about those deep holes and hidden wires the hard way. Which is better is debatable; Grossman's way is undoubtedly the less painful one.

What makes this book special and praise-worthy is the clarity of its presentation of the subject matter. The text is lucid and sharp-edged throughout. The production quality of the book is first-class, too. Paper, printing and binding are excellent, the reproduction of the numerous formulae and reaction schemes is outstanding. Like a crude diamond that is shaped into a brilliant by the grinder, the publishers have given this remarkable achievement in academic teaching the outward form it rightly deserves.

The Art of Writing Reasonabl Organic Reaction Mechanisms does contain numerous "problems" to be solved by the aspirants, too, but solutions are not given. Students are challenged to work out the problems under "real-life" conditions, which is probably okay for the advanced learner the book is designed for. By any means, solving these problems - or learning from failing in trying to do so - will increase their chemical self-confidence.

The overall impression the book leaves one with is that of a companion of the road, someone to be trusted and rely on, someone with an enormous degree of experience who has a lot of wisdom to convey - if not of life itself, then of that particular part of life that revolves around carbon-based chemistry. Any student who is on his journey through the jungle of chemistry with its myriads of bizarre creatures must feel a lot safer with this comrade by his side. "Don't lose the forest for the trees!" Grossman warns in the "Example" on page 133. Who possibly could with a tour guide like this?! Full marks for this "survial guide" to the "organic jungle".

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