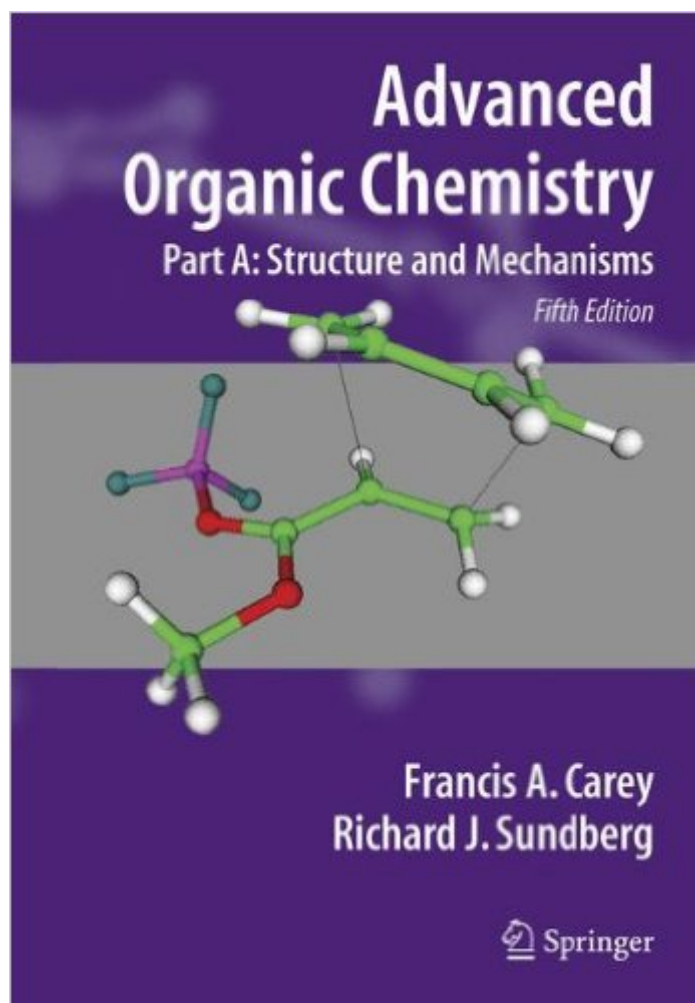


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Advanced Organic Chemistry, Part A: Structure And Mechanisms



Synopsis

The two-part, fifth edition of Advanced Organic Chemistry has been substantially revised and reorganized for greater clarity. The material has been updated to reflect advances in the field since the previous edition, especially in computational chemistry. Part A covers fundamental structural topics and basic mechanistic types. It can stand-alone; together, with Part B: Reaction and Synthesis, the two volumes provide a comprehensive foundation for the study in organic chemistry. Companion websites provide digital models for study of structure, reaction and selectivity for students and exercise solutions for instructors.

Book Information

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Customer Reviews

Carey and Sundberg had written the most detailed and brilliant account in the subject of organic chemistry. This volume along with Part B (Reactions and Synthesis) contribute to the most updated account in advanced organic chemistry. Part A deals with chemical bonding + structure, basic stereochemical principles, conformational analysis, stereoelectronic effects, and organic reaction mechanisms. For many organic students, a basic picture of chemical bonding and structure is more than adequate. The mathematical complications in physical chemistry have haunted many organic students including myself. Carey and Sundberg discuss concepts in chemical bonding and structure most relevant to organic chemistry and organic compounds in very plain language. This volume covers valence bond, molecular orbital theory (MO), Huckel molecular orbital theory, interaction between sigma and pi systems, hyperconjugation. The book also frontier orbital theory (HOMO, LUMO, PMO) in the context of perturbation theory. The coverage on stereochemistry is succinct but

detailed. It introduces ideas of enantiomeric and diastereomeric relationships. It also emphasizes on the significance and consequence of prochiral relationships and stereochemistry of dynamic processes. Conformational analysis is discussed mostly in the context of 3-membered to 7-membered ring systems. The book also provides thorough discussion on kinetic vs. thermodynamic control in mechanisms. Some of the less-easy-to-grasp concepts are discussed in details such as the Hammond's Postulate, Curtin-Hammett Principles and isotope effects. The book also contains a section on inorganic catalysis, Lewis acid catalysis and solvent effects. It further reinforces the theory and concept studied in introductory courses.

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