Provides the background, tools, and models required to understand organic synthesis and plan chemical reactions more efficiently

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Rigorous yet straightforward chapters first examine chemical equilibria, thermodynamics, reaction rates and mechanisms, and molecular orbital theory, providing readers with a strong foundation in physical organic chemistry. Subsequent chapters demonstrate various reactions involving organic, organometallic, and biochemical reactants and catalysts. Throughout the text, numerous questions and exercises, over 800 in total, help readers strengthen their comprehension of the subject and highlight key points of learning. The companion Organic Chemistry Workbook contains complete references and answers to every question in this text. A much-needed resource for students and working chemists alike, this text:

- Presents models that establish if a reaction is possible, estimate how long it will take, and determine its properties
- Describes reactions with broad practical value in synthesis and biology, such as C-C-coupling reactions, pericyclic reactions, and catalytic reactions
- Enables readers to plan chemical reactions more efficiently
Organic Chemistry: Theory, Reactivity, and Mechanisms in Modern Synthesis is an ideal textbook for students and instructors of chemistry, and a valuable work of reference for organic chemists, physical chemists, and chemical engineers.

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ABOUT THE AUTHOR

Prof. Kendall Houk is Saul Winstein Professor at the UCLA. He is an authority on theoretical and computational organic chemistry. His group develops rules to understand reactivity, computationally models complex organic reactions, and experimentally tests the predictions of theory. He collaborates prodigiously with chemists all over the world. He has published nearly 1100 articles in refereed journals and is among the 100 most-cited chemists.

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