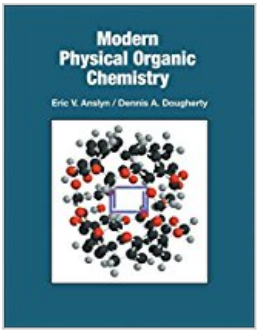

Modern Physical Organic Chemistry

By Eric V. Anslyn, Dennis A. Dougherty

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This is the first modern textbook, written in the 21st century, to make explicit the many connections between physical organic chemistry and critical fields such as organometallic chemistry, materials chemistry, bioorganic chemistry, and biochemistry. In the latter part of the 20th century, the field of physical organic chemistry went through dramatic changes, with an increased emphasis on noncovalent interactions and their roles in molecular recognition, supramolecular chemistry, and biology; the development of new materials with novel structural features; and the use of computational methods. Contemporary chemists must be just as familiar with these newer fields as with the more established classical topics. This completely new landmark text is intended to bridge that gap. In addition to covering thoroughly the core areas of physical organic chemistry – structure and mechanism – the book will escort the practitioner of organic chemistry into a field that has been thoroughly updated . The foundations and applicabilities of modern computational methods are also developed. Written by two distinguished researchers in this field, Modern Physical Organic Chemistry can serve as a text for a year-long course targeted to advanced undergraduates or first-year graduate students, as well as for a variety of shorter courses on selected aspects of the field. It will also serve as a landmark new reference text, and as an introduction to many of the more advanced topics of interest to modern researchers. An accompanying Student Solutions Manual will become available.

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Editorial Review

Review
"It will certainly inspire." -- *Barry Carpenter, Cornell University*

"This book is the new authoritative physical organic resource that will benefit researchers, students, and teachers alike." -- *Timothy Swager, Massachusetts Institute of Technology*

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I can enthusiastically recommend the text." --*Nicholas J. Turro, Columbia University*

About the Author
Eric V. Anslyn received his PhD in Chemistry from the California Institute of Technology under the direction of Robert Grubbs. After completing post-doctoral work with Ronald Breslow at Columbia University, he joined the faculty at the University of Texas at Austin, where he became a Full Professor in 1999. He currently holds four patents and is the recipient of numerous awards and honors, including the Presidential Young Investigator, the Alfred P. Sloan Research Fellow, the Searle Scholar, the Dreyfus Teacher-Scholar Award, and the Jean Holloway Award for Excellence in Teaching. He is also the Associate Editor for the Journal of the American Chemical Society and serves on the editorial boards of Supramolecular Chemistry and the Journal of Supramolecular Chemistry. His primary research is in physical organic chemistry and bioorganic chemistry, with specific interests in catalysts for phosphoryl and glycosyl transfers, receptors for carbohydrates and enolates, single and multi-analyte sensors – the development of an electronic tongue, and synthesis of polymeric molecules that exhibit unique abiotic secondary structure. Dennis A. Dougherty received a PhD from Princeton with Kurt Mislow, followed by a year of postdoctoral study with Jerome Berson at Yale. In 1979 he joined the faculty at the California Institute of Technology, where he is now George Grant Hoag Professor of Chemistry. Dougherty's extensive research interests have taken him to many fronts, but he is perhaps best known for development of the cation- interaction, a novel but potent noncovalent binding interaction. More recently, he has addressed molecular neurobiology, developing the in vivo nonsense suppression method for unnatural amino acid incorporation into proteins expressed in living cells. This powerful new tool enables “physical organic chemistry on the brain” - chemical-scale studies of the molecules of memory, thought, and sensory perception and the targets of treatments for Alzheimer's disease, Parkinson's disease, schizophrenia, learning and attention deficits, and drug addiction. His group is now working on extensive experimental and computational studies of the bacterial mechanosensitive channels MscL and MscS, building off the crystal structures of these channels recently reported by the Rees group at Caltech.

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