Contemporary Carbene Chemistry
Robert A. Moss, Michael P. Doyle

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DESCRIPTION

Presents the most innovative results in carbene chemistry, setting the foundation for new discoveries and applications

The discovery of stable carbenes has reinvigorated carbene chemistry research, with investigators seeking to develop carbenes into new useful catalysts and ligands. Presenting the most innovative and promising areas of carbene research over the past decade, this book explores newly discovered structural, catalytic, and organometallic aspects of carbene chemistry, with an emphasis on new and emerging synthetic applications.

Contemporary Carbene Chemistry features contributions from an international team of pioneering carbene chemistry researchers. Collectively, these authors have highlighted the most interesting and promising areas of investigation in the field. The book is divided into two parts:

• **Part 1, Properties and Reactions of Carbenes**, explores new findings on carbene stability, acid-base behavior, and catalysis. Carbenic structure and reactivity are examined in chapters dedicated to stable carbenes, carbodicarbenes, carbenes as guests in supramolecular hosts, tunneling in carbene and oxacarbene reactions, and ultrafast kinetics of carbenes and their excited state precursors. Theoretical concerns are addressed in chapters on computational methods and dynamics applied to carbene reactions.

• **Part 2, Metal Carbenes**, is dedicated to the synthetic dimensions of carbenes, particularly the reactions and catalytic properties of metal carbenes. The authors discuss lithium, rhodium, ruthenium, chromium, molybdenum, tungsten, cobalt, and gold.
All the chapters conclude with a summary of the current situation, new challenges on the horizon, and promising new research directions. A list of key reviews and suggestions for further reading also accompanies every chapter.

Each volume of the Wiley Series on Reactive Intermediates in Chemistry and Biology focuses on a specific reactive intermediate, offering a broad range of perspectives from leading experts that sets the stage for new applications and further discoveries.

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**ABOUT THE AUTHOR**

**ROBERT A. MOSS, PhD,** is a Research Professor and Louis P. Hammett Professor Emeritus in Chemistry and Chemical Biology at Rutgers University. A world leader in the chemistry of reactive intermediates, Dr. Moss was awarded a prestigious 2010 ACS Arthur C. Cope Senior Scholar Award.

**MICHAEL P. DOYLE, PhD,** is a Professor in the Department of Chemistry and Biochemistry at the University of Maryland. He is the recipient of numerous scientific awards, including a 2006 ACS Arthur C. Cope Senior Scholar Award.

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