Carbon-Centered Free Radicals and Radical Cations : Structure, Reactivity, and Dynamics

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Covers the most advanced computational and experimental methods for studying carbon-centered radical intermediates.With its focus on the chemistry of carbon-centered radicals and radical cations, this book helps readers fully exploit the synthetic utility of these intermediates in order to prepare fine chemicals and pharmaceutical products. Moreover, it helps readers better understand their role in complex atmospheric reactions and biological systems. Thoroughly up to date, the book highlights the most advanced computational and experimental methods available for studying and using these critically important intermediates.Carbon-Centered Free Radicals and Radical Cations begins with a short history of the field of free radical chemistry, and then covers: A discussion of the relevant theory. Mechanistic chemistry, with an emphasis on synthetic utility. Molecular structure and mechanism, focusing on computational methods. Spectroscopic investigations of radical structure and kinetics, including demonstrations of spin chemistry techniques such as CIDNP and magnetic field effects.Free radical chemistry in macromolecules. Each chapter, written by one or more leading experts, explains difficult concepts clearly and concisely, with references to facilitate further investigation of individual topics. The authors were selected in order to provide insight into a broad range of topics, including small molecule synthesis, polymer degradation, computational chemistry as well as highly detailed experimental work in the solid, liquid, and gaseous states.This volume is essential for students or researchers interested in building their understanding of the role of carbon-centered radical intermediates in complex systems and how they may be used to develop a broad range of useful products.

Słowa kluczowe

Free radicals, carbon activated, reactivity, Cations