

Explains the role of reactive intermediates in biological systems as well as in environmental remediation

With its clear and systematic approach, this book examines the broad range of reactive intermediates that can be generated in biological environments, detailing the fundamental properties of each reactive intermediate. Readers gain a contemporary understanding of how these intermediates react with different compounds, with an emphasis on amino acids, peptides, and proteins. The author not only sets forth the basic chemistry and nature of reactive intermediates, he also demonstrates how the properties of the intermediates presented in the book compare with each other.

Oxidation of Amino Acids, Peptides, and Proteins begins with a discussion of radical and non-radical reactive species as well as an exploration of the significance of reactive species in the atmosphere, disinfection processes, and environmental remediation. Next, the book covers such topics as:

- Thermodynamics of amino acids and reactive species and the effect of metal-ligand binding in oxidation chemistry
- Kinetics and mechanisms of reactive halogen, oxygen, nitrogen, carbon, sulfur, and phosphate species as well as reactive high-valent Cr, Mn, and Fe species
- Reactivity of the species with molecules of biological and environmental importance
- Generation of reactive species in the laboratory for kinetics studies
- Oxidation of amino acids, peptides, and proteins by permanganate, ferryl, and ferrate species
- Application of reactive species in purifying water and treating wastewater

With this book as their guide, readers will be able to assess the overall effects of reactive intermediates in biological environments. Moreover, they'll learn how to apply this knowledge for successful water purification and wastewater treatment.

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