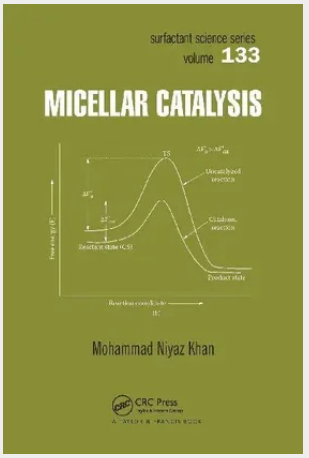
Khan

Micellar Catalysis

Micelles are prevalent in naturally occurring and biological catalytic reactions. However, it is only in recent decades that scientists have developed kinetic models clarifying how micelle-mediated catalysis works at a molecular level. Written by a leading expert in the field, Micellar Catalysis is an in-depth examination of how micelles affect reaction mechanisms and reaction rates in organic and inorganic reactions. The book first discusses the structural and chemical properties of micelles and the role of thermodynamics, concentration, and additives in forming micelles. Demonstrating how intermolecular forces influence the reaction mechanisms, the author presents kinetic models for reactions catalyzed by normal micelles, as well as mixed micelles and metallomicelles. The book also compares various types of catalytic reactions with and without micelles to quantify their effect on reaction rates and rate constants. Using this information, it illustrates how micelles can modify reaction rates and improve catalytic efficiency, particularly for industrial processes. The final chapter explains the principles of kinetics used for data analysis. Focused on kinetic, chemical, and physical aspects of micelle-mediated reactions, this book offers clear insight into the complex mechanisms that occur in biological reactions. Micellar Catalysis is an essential source of reference for scientists involved in the research and development of micelles for industrial and biochemical applications.

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