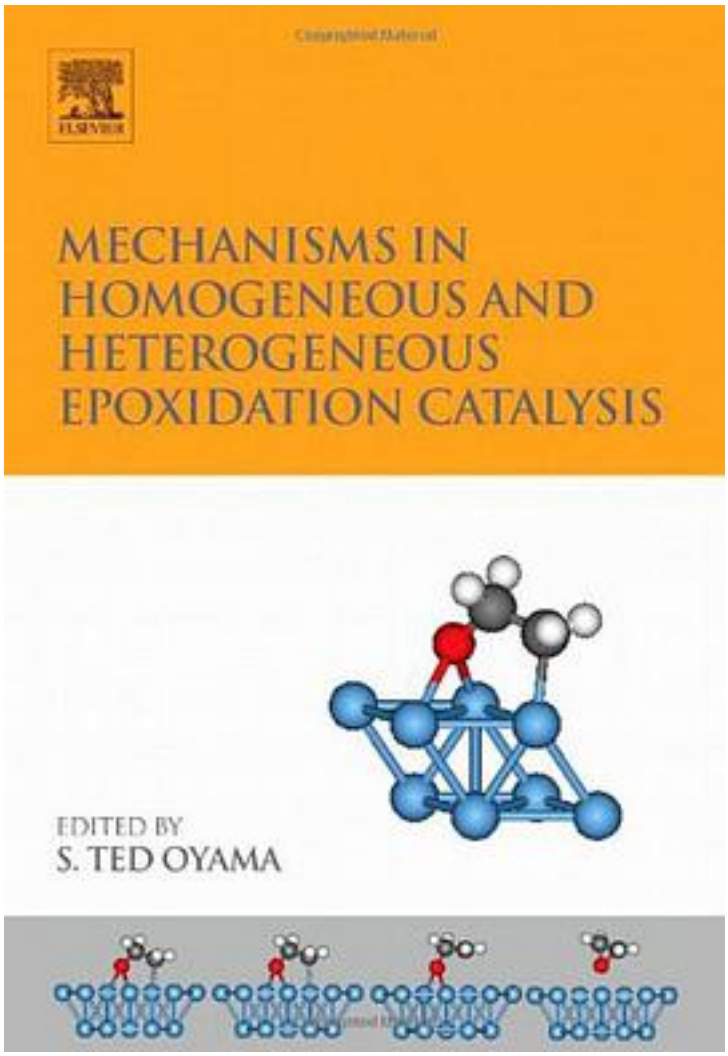
Mechanisms in Homogeneous and Heterogeneous Epoxidation Catalysis



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The catalytic epoxidation of olefins plays an important role in the industrial production of several commodity compounds, as well as in the synthesis of many intermediates, fine chemicals, and pharmaceuticals. The scale of production ranges from millions of tons per year to a few grams per year. The diversity of catalysts is large and encompasses all the known categories of catalyst type: homogeneous, heterogeneous, and biological. This book summarizes the current status in these fields concentrating on rates, kinetics, and reaction mechanisms, but also covers broad topics including modeling, computational simulation, process concepts, spectroscopy and new catalyst development. The similarities and distinctions between the different reaction systems are compared, and the latest advances are described.

* Comprehensive listing of epoxide products

* Broad comparison of turnover frequencies of homogeneous, hetergeneous, main-group, biomimetic and biological catalysts

* Analysis of the general strengths and weaknesses of varied catalytic systems

* Detailed description of the mechanisms of reaction for classical and emerging catalysts

作者介绍:

目录:

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