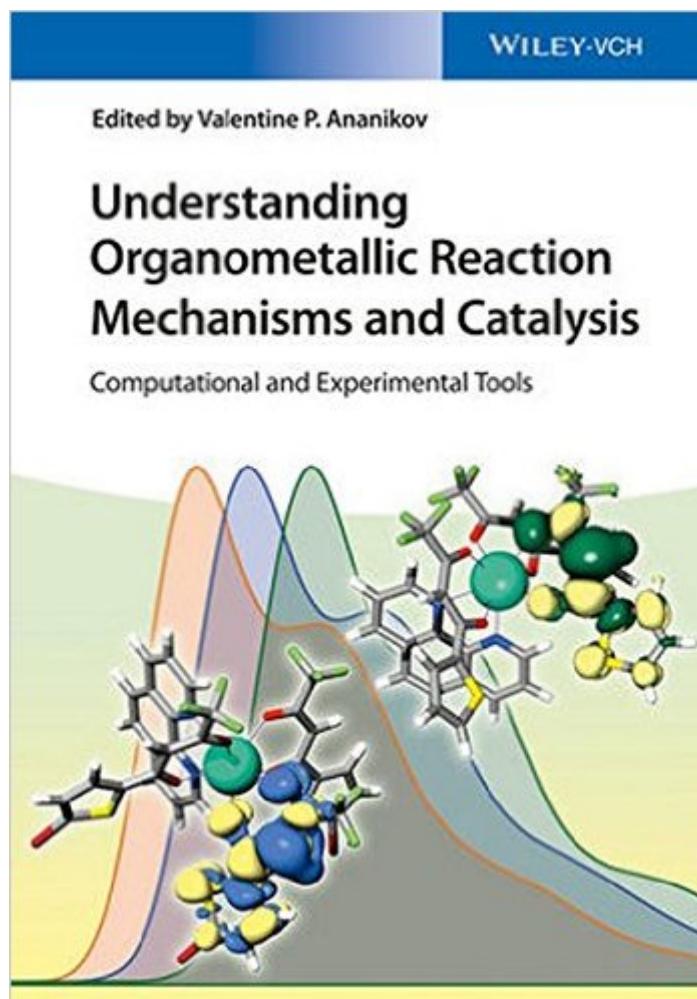


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# Understanding Organometallic Reaction Mechanisms And Catalysis: Computational And Experimental Tools



## Synopsis

Exploring and highlighting the new horizons in the studies of reaction mechanisms that open joint application of experimental studies and theoretical calculations is the goal of this book. The latest insights and developments in the mechanistic studies of organometallic reactions and catalytic processes are presented and reviewed. The book adopts a unique approach, exemplifying how to use experiments, spectroscopy measurements, and computational methods to reveal reaction pathways and molecular structures of catalysts, rather than concentrating solely on one discipline. The result is a deeper understanding of the underlying reaction mechanism and correlation between molecular structure and reactivity. The contributions represent a wealth of first-hand information from renowned experts working in these disciplines, covering such topics as activation of small molecules, C-C and C-Heteroatom bonds formation, cross-coupling reactions, carbon dioxide converison, homogeneous and heterogeneous transition metal catalysis and metal-graphene systems. With the knowledge gained, the reader will be able to improve existing reaction protocols and rationally design more efficient catalysts or selective reactions. An indispensable source of information for synthetic, analytical, and theoretical chemists in academia and industry.

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