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Kinetics and Mechanism of Catalytic Reactions—Integrity of Experiment and Theory

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Message from the Guest Editor

Catalytic reactions play a key role in sustainable chemical industry, in energy generation, and in environmental protection. Detailed understanding of the kinetics and insight into the mechanism of catalytic reactions is critical for reliable reactor modeling and, therefore, for further practical implementation of catalytic processes. Studies on reaction kinetics and mechanisms are very complex and include the application of advanced experimental systems for catalytic testing and catalyst characterization, together with the development of computational skills to account for the effects of internal and external mass and heat transfer within catalysts, laboratory and pilot-scale reactors, etc.

This Special Issue is devoted to the current progress and the perspective tendencies of scientific research in mechanisms and kinetics of catalytic reactions with the main focus on new techniques for advanced experimental studies and their integrity with the trends in the theory of catalysis.