



Effect of Surface Properties and Mobility in Chemical Reactions and Catalysis

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Message from the Guest Editor

When the surface of a solid is exposed to a mixture of gases or liquids that would not react in the liquid or gas phases, adsorption can promote the reaction kinetics for at least two reasons: it increases the local concentration of the reactants on the surface, or it attracts one of the reactants or possibly both, generating a state that lowers the activation energy barrier due to the presence of active sites. These are the two simple basic principles on which catalysis is based.

Despite this apparent simplicity, there are many questions behind the notion of catalytic activity: What is the physical meaning of the concept of “active site”? How does the distribution and size of the “active site” influence on the surface affect the catalytic result? What is the role of surface diffusion and porosity? How do the chemical properties of the support/catalyst affect the catalytic result? Is it possible to differentiate the bifunctional character of a catalyst? These and many other questions will be dealt in this Special Issue.





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