Special Issue

Effect of Surface Properties and Mobility in Chemical Reactions and Catalysis

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.

Guest Editor

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Deadline for manuscript submissions

closed (31 May 2022)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/69220

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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