

Special Issue

Recent Progress in Development of Hydrogenation and Dehydrogenation Catalysts

Message from the Guest Editors

Catalytic hydrogenation and dehydrogenation of functional groups in organic molecules are useful, versatile, and environmentally friendly reaction routes available for organic synthesis. This important area of catalytic chemistry has vital scientific significance and broad application prospects in energy storage, fine chemicals, production of polymers, production of edible and non-edible oils, and pharmaceuticals synthesis. About 10–20% of chemical reactions used to produce fine chemicals and pharmaceutical products are hydrogenations. Dehydrogenation reactions find wide application in the production of hydrogen, alkenes (especially, light olefins, that is, ethene and propene), polymers, and oxygenates. Reversible dehydrogenation reactions (hydrogen release process) and hydrogenation reactions (hydrogen storage process) are used as hydrogen storage systems through various organic hydrogen carriers. This Special Issue will cover recent developments in catalysts for hydrogenation and dehydrogenation reactions.

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