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Development of Hydrogenation Catalysts and Processes

Guest Editor:

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Message from the Guest Editor

Hydrogenation is one of the most intensively topics in energy and environmental catalysis, and it can be widely used in modern petrochemical, fine chemical and pharmaceutical industries. It is worth noting that the long-term sustainable development of hydrogenation primarily relies on the development of high-performance catalysts and catalytic reaction process, which are expected to reduce the reliance on fossil fuels and the associated environmental concern.

In the past few years, we have witnessed rapid developments in catalysts (homogeneous, heterogeneous and enzyme), characterizations (ex situ and in situ), reaction processes (thermal-catalysis, photo-catalysis and electro-catalysis) and hydrogenation mechanisms. Herein, this Special Issue aims to cover the recent progress of the developments of hydrogenation catalysts and reaction processes.

(1) The development of new catalytic materials;

(2) In situ characterizations of catalysts and reaction intermediates;

(3) Photo-(electro-) hydrogenation processes and reactor design;

(4) Fundamental reaction mechanisms/pathways studies in the hydrogenation industries.