



catalysts



Special Issue Reprint

Catalysis by Precious Metals, Past and Future

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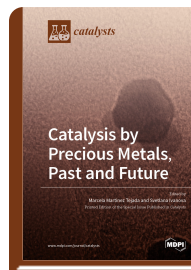
Edited by

Marcela Martinez Tejada

Svetlana Ivanova

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The future of the precious metals is shiny and resistant. Although expensive and potentially replaceable by transition metal catalysts, precious metal implementation in research and industry shows potential. These metals catalyze oxidation and hydrogenation due to their dissociative behavior toward hydrogen and oxygen, dehydrogenation, isomerization, and aromatization, etc. The precious metal catalysts, especially platinum-based catalysts, are involved in a variety of industrial processes. Examples include Pt–Rh gauze for nitric acid production, the Pt/Al₂O₃ catalyst for cyclohexane and propylene production, and Pd/Al₂O₃ catalysts for petrochemical hydropurification reactions, etc. A quick search of the number of published articles in the last five years containing a combination of corresponding “metals” (Pt, Pd, Ru, Rh and Au) and “catalysts” as keywords indicates the importance of the Pt catalysts, but also the continuous increase in the contribution of Pd and Au. This Special Issue reveals the importance of precious metals in catalysis and focuses on mono- and bi-metallic formulations of any supported precious metals and their promotional catalytic effect of other transition metals. The application of precious metals in diverse reactions, either homogeneous or heterogeneous, and studies of the preparation, characterization, and applications of the supported precious metal catalysts, are presented.



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