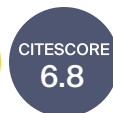




catalysts



Special Issue Reprint

Innovative Catalytic Materials for Environmental Remediation and Energy Applications

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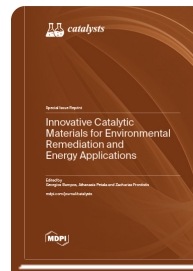
Georgios Bampos

Athanasia Petala

Zacharias Frontistis

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This editorial introduces the Special Issue “Catalytic Reforming and Hydrogen Production: From the Past to the Future,” which presents a curated collection of cutting-edge research articles and reviews dedicated to hydrogen (H_2) production through catalytic reforming processes. With growing energy demands and the urgent need for sustainable alternatives, this issue explores diverse pathways such as dry methane reforming, methanol steam and aqueous-phase reforming, and photocatalytic water splitting. Key challenges—including catalyst deactivation, carbon deposition, and material stability—are addressed through novel approaches like bimetallic systems, nanostructured materials, and single-atom alloys. Highlights include advancements in Pt- and Ni-based catalysts, La-doped MoS_2 , and Cu_2O/CuO heterostructures. The reviews delve into the synthesis and catalytic behavior of cobalt manganese oxide spinels and modern methanol-reforming catalysts. Together, these contributions provide a comprehensive snapshot of progress and future directions in clean hydrogen production, offering insights essential for researchers and engineers working toward a fossil fuel-free energy landscape.



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