



Advances in Homogeneous and Heterogeneous Catalysis

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Message from the Guest Editors

It is well known that more than 90% of commercial chemical products involve catalytic processes in at least one step of their manufacture. Despite the ubiquitous use of catalytic processes, further demand for energy sources, chemical building blocks, fine chemicals, food processing and waste treatment (exhaust gases, wastewaters, solid wastes) is pushing material scientists and chemical engineers to develop new catalyst materials and corresponding processes.

Some of the greatest technological challenges of a mankind involve the development of novel catalytic processes, specifically:

- The valorization of captured CO₂ into platform chemicals and energy vectors;
- The valorization of CH₄ that is commonly flared at small or temporary sources;
- The valorization of biomass to yield value-added chemicals;
- Environmental pollution abatement;
- Fuel-cells (oxygen evolution and reduction reactions);
- Enzymatic conversions.

This Special Issue will feature articles that cover topics related to materials preparation, engineering, functionalization, activation and characterization of materials.





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Message from the Editor-in-Chief

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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