

Tentative Outline

Special Thematic Issue for the journal

Advanced catalysts for the hydrogen production from biomass-derived secondary raw materials

Guest Editors: Dr. Filippo Bossola and Dr. Claudio Evangelisti

• **Scope of the Thematic Issue:**

The scope of this thematic issue is to review the most recent advancements in the development of heterogeneous catalysts for the sustainable hydrogen production from biomass-derived secondary raw materials. A particular focus will be devoted to the new generation of heterogeneous homo- and heterometallic catalysts obtained by innovative approaches featuring strictly controlled structure, morphology, composition and chemical state of the metal active phase. Catalytic efficiency is a fundamental parameter, but with hard-to-process substrates, stability and sustainability play a fundamental role; the latest innovations in this direction will be critically reviewed. Theoretical modeling as well as knowledge of the catalyst under realistic reaction conditions are indispensable tools to supporting the development of these modern catalytic systems and hence reviews on this topic are highly welcome in this Thematic Issue.

Keywords: Hydrogen, heterogeneous catalysts, biomass-derived raw materials, nanoparticles, modeling, nanomaterials characterization, activity, stability.

Sub-topics:

- Innovative synthesis approaches to advanced heterogeneous catalysts for the hydrogen production.
- Advanced catalysts for the hydrogen production from bio-oil, bio-alcohols, and bio-methane.
- Structure-activity relationships between the catalyst nanostructure, morphology and electronic properties with the catalytic activity and stability.
- Modeling approaches as support to the development of innovative catalysts and the investigation of reaction mechanisms.
- In situ or operando microscopic and/or spectroscopic nanostructured catalyst investigations

Schedule:

- ✧ Thematic issue submission deadline: 30/09/2020

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