

Special Issue

Waste Valorization for Hydrogen Production: Advances in Reforming Catalysts

Message from the Guest Editors

H₂ production from wastes will be a way of solving near future problems that involve the increasing demand of this raw material in industry; in addition, it has a potential use as an energy carrier. In this scenario, wastes, such as biomass and plastics, are attractive raw materials for producing renewable H₂ with lower emission of greenhouse gases than by reforming natural gas, which is currently the main route for H₂ production. Amongst the different conversion methods, one-step thermochemical routes (pyrolysis or gasification) are especially interesting for their industrial implementation and allow the obtainment of high H₂ yields. An interesting alternative to the aforementioned strategies lies in performing pyrolysis and reforming steps using two in-line reactors, which allow for establishing the optimum conditions in each step for obtaining almost all the hydrogen contained in the feed. In order to progress towards the industrial implementation of these processes for H₂ production, the development of highly active catalysts is essential. Moreover, the deactivation of the catalysts by coke deposition is the most important challenge of reforming processes.

Guest Editors

Dr. Aitor Arregi

Department of Chemical Engineering, University of the Basque Country UPV/EHU, P.O. Box 644, E48080 Bilbao, Spain

Dr. Laura Santamaria

Department of Chemical Engineering, University of the Basque Country UPV/EHU, P.O. Box 644, E48080 Bilbao, Spain

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Prof. Dr. Giancarlo Cravotto

Department of Drug Science and Technology, University of Turin, Via P. Giuria 9, 10125 Turin, Italy

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