Special Issue

Production of Renewable Hydrogen: Prospects and Challenges

Message from the Guest Editor

A great deal of focus has been given to “green hydrogen”, produced from water electrolysis using renewable energy sources such as solar and wind. However, many technical and economic challenges still need to be overcome, such as the cost of production, energy consumption, electrode performance, and material durability, among others. On the other hand, biomass can be used as an alternative feedstock for hydrogen production, not only because it is renewable but also because it is a CO2-neutral energy source. Biomass-derived compounds, can be used in the aqueous phase or steam reforming for hydrogen production. Bio-oil, produced by fast biomass pyrolysis, is also an attractive feedstock for hydrogen production, aligned with prospects of establishing an integrated biorefinery. Biogas, produced by anaerobic digestion of biomasses or organic wastes, is another attractive alternative for renewable hydrogen production. This Special Issue aims to present the current state of affairs in terms of renewable hydrogen production and the challenges faced in terms of scaling up existing processes.

Guest Editor

Prof. Dr. Mariana de Mattos V. M. Souza

Escola de Química, Universidade Federal do Rio de Janeiro (UFRJ), Centro de Tecnologia, Bloco E, Sala 206, CEP, Rio de Janeiro 21941-909, RJ, Brazil

Deadline for manuscript submissions

25 August 2025

Processes

an Open Access Journal by MDPI

Impact Factor 2.8
CiteScore 5.5

mdpi.com/si/204114

Processes
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
processes@mdpi.com

mdpi.com/journal/processes

Processes

an Open Access Journal by MDPI

Impact Factor 2.8
CiteScore 5.5

mdpi.com/journal/processes

About the Journal

Message from the Editor-in-Chief

You are invited to contribute either a research article or a comprehensive review for consideration and publication in *Processes* (ISSN 2227-9717). *Processes* is published in open access format – research articles, reviews, and other content are released on the internet immediately after acceptance. The scientific community and the general public have unlimited, free access to the content. As an open access journal, *Processes* is supported by the authors and their institutes through the payment of article processing charges (APCs) for accepted papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

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

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Ei Compendex, Inspec, AGRIS, and other databases.

Journal Rank:

CiteScore - Q2 (Chemical Engineering (miscellaneous))

MDPI