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Matériaux & Techniques

Call for papers

Themed Issue on

'The role of Hydrogen for a sustainable steelmaking process'

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Background

Steelmaking decarbonization can provide significant contributions to reach the Green Deal ambitions of making the European continent climate neutral and of improving the leadership for clean products and technologies. In addition, the exploitation of new energy sources is now more necessary than ever considering the current geopolitical situation. In this background, Hydrogen can have a fundamental role for a sustainable steelmaking: both existing and innovative routes can take advantage from its application. H_2-based steelmaking can become a fundamental route in the future as well as the replacement of fossil carbon energy can be achieved, among others, through H_2-based heating. Furthermore, Hydrogen can be important to allow the valorisation of CO_2 rich-gases coming from the steelmaking production. However, suitable low-carbon Hydrogen production routes, infrastructures, markets and norms are needed for allowing this transition and for maximizing the benefits belonging to a wide and multipurpose usage of Hydrogen in steelmaking sector.

Aim and Scope of the Themed Issue

The aim of this special issue is to achieve the following goals:
• Providing an overview of state-of-the-art, best available technologies, economic, social and legislation aspects of H_2 use in the steel industry.
• Highlighting existing issues to be addressed for the acceleration of hydrogen application in the steel sector.
• Giving elements based on shared experiences to solve existing issues and to identify key aspects to be addressed in future R&D&I projects. Addressed topics will belong to:

1. Low-carbon Hydrogen production and supply chain
2. Hydrogen-based steelmaking and related up/down streams processes issues
3. Hydrogen heating technologies (EAF, ladle, reheating/annealing furnaces)
4. Hydrogen utilization in CO_2 conversion processes (CCUS): Hydrogen role as enabler for carbon capture utilization and storage
5. Norm and standards relevant for Hydrogen application in steelworks
6. Hydrogen safety, availability (including storage and distribution) and market, related legislation and social impact.

ESTEP
European Steel Technology Platform

H2 FOR GREEN STEEL
2nd INTERNATIONAL CONFERENCE

The articles will be based on contributions presented in the H_2 for Green Steel 2nd International Conference (https://www.estep.eu/events/2ndestep-hydrogen-conference/)

Submissions

All relevant papers will be carefully considered, peer reviewed by a distinguished team of international experts, and published in accordance to the Journal's standard policies. Full

research papers, technical papers and review articles can be submitted online via the journal's submission and peer review site. Please register choosing the title of the special issue 'The role of Hydrogen in the transition to a sustainable steelmaking process'.

Please find the instructions for authors at: **https://www.mattech-journal.org/author-information/instructions-for-authors**

Submission deadline – January 31st 2023

Article submission and editorial system **here**.

Charges

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