Special Issue

Power to Gas (P2G) and Carbon Capture and Utilization (CCU) Technologies Combination

Message from the Guest Editor

The power to gas concept is based on the transformation of electrical energy into a gas fuel and involves the use of surplus power from renewable sources to split water into hydrogen and oxygen by an electrolyzer. Hydrogen can be then used for different purposes, such as the reduction of carbon dioxide to methane. The combination of CCU and P2G technologies in the same industrial plant results in a very interesting possibility to simultaneously reduce greenhouse emissions and utilize power surplus from renewable sources to produce a gas that can be immediately used or transported by the consolidated infrastructure present in most industrialized countries. In this Special Issue, the interested researchers are invited to submit original research papers, as well as review articles, on any of the topics related to P2G, CCU, and their combination in the same plant, focusing on the optimization of the plant for efficiency improvement, considering classical technical and economical analysis or/and exergetic and economic analysis. Papers related to innovations in the optimization of the methanation process (catalysis and reactor configurations) are particularly welcome.

Guest Editor

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Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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