

Special Issue

Green Bio-Hydrogen Energy and Biogas Production Technology

Message from the Guest Editors

The transition to a sustainable energy system demands the accelerated development of green bio-hydrogen and advanced biogas technologies. As versatile and carbon-neutral energy carriers, bio-hydrogen and biogas represent critical pathways for decarbonizing industrial and transportation sectors, while supporting the circular integration of biomass valorization. This Special Issue seeks high-quality papers focusing on the production, purification, application, and related topics of hydrogen and biogas. We particularly welcome contributions that explore novel bioprocesses, feedstock pretreatment and fractionation, microbial engineering, and integrated biorefinery designs for co-producing biofuels and renewable chemicals. Topics include, but are not limited to, the following:

- Biological hydrogen production;
- Advanced biogas systems and biogas upgrading technologies;
- Biomass pretreatment and fractionation;
- Co-production of bio-hydrogen, biogas, and value-added chemicals from agro-industrial residues;
- Kinetic modeling and sustainability evaluation of integrated biofuel production pathways;
- Valorization of industrial waste for renewable gas production.

Guest Editors

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