Roles of Bio-Hydrogen in Net-Zero Energy and Sustainability

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Abstract

In this talk, I will begin by providing a brief overview of the current challenges of energy decarbonisation and the potential roles of hydrogen and bioenergy-based carbon capture, utilisation and storage (BECCUS) in the net-zero energy transition. I will then focus on the University of Glasgow's research activities that are particularly relevant to these, highlighting (i) advanced thermochemical/gasification routes for the production of low/carbon-neutral bio-hydrogen (i.e. H2-enrich biosyngas) from biomass and waste, and (ii) combustion challenges of these fuels for end-use applications. The presentation will also highlight research progress in the context of BECCUS, which has the potential to provide net-negative emission bio-hydrogen.