# **Special Issue**

# Integrated Approaches to Sustainable Hydrogen Production and Storage

### Message from the Guest Editor

Dear Colleagues: In response to global climate change and energy security challenges, the transition to a lowcarbon energy system is imperative. Hydrogen energy, particularly sustainable hydrogen derived from renewable resources, is recognized as a crucial vector for achieving deep decarbonization, especially in hardto-abate sectors such as industry, transportation, and energy storage. However, the large-scale deployment of hydrogen energy faces hurdles in production, storage, transportation, and cost. Among these, safe, efficient, and economical hydrogen storage technology is a critical nexus connecting hydrogen production to enduse applications. This Special Issue aims at collating the latest research advances in frontier technologies for sustainable hydrogen production (e.g., water electrolysis powered by renewables) and innovative hydrogen storage solutions (including high-pressure gaseous storage, cryogenic liquid storage, metal hydride storage, porous material adsorption storage, and liquid organic hydrogen carriers (LOHCs)). The focus will be on the development of hydrogen storage materials, system integration and optimization, energy efficiency analysis, etc.

### **Guest Editor**

Dr. Zuoyu Sun

Hydrogen Energy and Space Propulsion Laboratory (HESPL), School of Mechanical, Electronic and Control Engineering, Beijing Jiaotong University, Beijing 100044, China

### Deadline for manuscript submissions

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I encourage you to contribute a research or comprehensive review article for consideration for publication in Sustainability, an international open access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. The journal publishes original research articles, reviews, conference proceedings (peer reviewed full articles) and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

### Editor-in-Chief

Prof. Dr. Steve W. Lyon

School of Environment and Natural Resources, Ohio State University, Columbus, OH 43210, USA

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