

The 1st HYDROGENIUS Seminar Series (HYSS)

Date:

Tuesday, 4 August 2026, 9 a.m. – 10 a.m. (JST)

Monday, 3 August 2026, 8 p.m. – 9 p.m. (EDT)

Speaker:

Prof. Hisao Matsunaga

Vice Director and Division Director

Division:

Hydrogen Delivery and Storage Research Division

Title:

Hydrogen Delivery and Storage at HYDROGENIUS: Vision, Strategy, and Research Frontiers

Abstract:

Safe and reliable hydrogen delivery and storage are essential for the development of a sustainable hydrogen society. This seminar introduces the Hydrogen Delivery and Storage Research Division of HYDROGENIUS and presents its mission, research framework, and future strategy. Particular emphasis will be placed on research into hydrogen gas embrittlement of metallic materials from the perspectives of mechanics of materials, fracture mechanics, and material strength, including fatigue crack growth, fracture toughness, and mechanical testing in high-pressure hydrogen environments. The seminar will also highlight emerging data-driven approaches that integrate experimental databases, mechanistic knowledge, and machine learning to support materials selection and the prediction of material performance. In addition, the role of industry-academia collaboration, shared research infrastructure, international partnerships, and contributions to codes and standards will be discussed. By integrating mechanics-based understanding of deformation, fatigue, and fracture with data utilization and collaborative research, the division aims to accelerate the development and implementation of safe, economical, and sustainable hydrogen delivery and storage technologies.