

Workshop for Digital Twin and AI-Integrated Design for Mechanical Systems Part III : Carbon-neutral Thermal Power Systems

Aug. 22, 2025 (Room 101, 60th Anniversary Memorial Hall, Inha Univ.)

Organizers: Seoksu MOON, Sangseung LEE, Hyunchul JU (INHA Univ.)

This workshop aims to exchange information and establish a network among leading researchers worldwide in the field of carbon-neutral thermal power systems, such as internal combustion engines and gas turbines. The recent research trends and digital twin-assisted development technologies for carbon-neutral thermal power systems will be introduced and discussed.

13:00-13:10: Opening

Session 1: Carbon-neutral Engines - I

13:10-13:50 Research on Hydrogen Energy Carriers and Their Applications to Internal Combustion Engines
Taku TSUJIMURA (Fukushima Renewable Energy Institute - AIST, JAPAN)



13:50-14:30 Ammonia Combustion Engine Research from Fundamentals to a Tugboat Application
Tie LI (Shanghai Jiao Tong University, CHINA)



14:30-15:10 Reliable and Affordable Use of Hydrogen in Gasoline and Diesel Engines
Shawn KOOK (University of New South Wales, AUSTRALIA)



Session 2: Carbon-neutral Gas Turbines

15:30-16:10 Research and Development of Gas Turbines Firing Ammonia
Norihiko IKI (AIST, JAPAN)



16:10-16:40 Doosan Enerbility Gas Turbines and Sustainable Future
Minseok KO (Doosan Enerbility, South KOREA)



Session 3: Carbon-neutral Engines - II

16:50-17:20 Innovative HiMSEN Methanol Engine Development Using Meta Model-based Virtual Engine with VPD Technology
Gwanghyeon YU (HD Hyundai Heavy Industries, South KOREA)



17:20-17:50 Paradigm Shift in Combustion Engine Development: The Role and Potential of AI
Joonsik HWANG (KAIST, South KOREA)



17:50 - : Closing

Registration Fee: FREE

Registration Link: [Click Here!](#)

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