

9th InfoSyEnergy Research Workshop for Energy Research

“Decarbonization of Heat and Its Utilization”

November 6, 2025

13:30 Open

Pre-registration required
Free of charge, On-site & Online
Venue: EEI Bldg. Enovation Hall
Language: Japanese

In Japan's final energy consumption, heat demand accounts for a significant portion. Historically, much of this demand has relied on fossil fuels, making it a major source of CO₂ emissions. While decarbonization has progressed in the power sector through the expansion of renewable energy, the decarbonizing heat energy utilization remains a major challenge.

“Decarbonization of heat” refers to the transition of various heat demands—such as industrial heating and building heating—toward sustainable methods that suppress CO₂ emissions. Specific initiatives include:

- Promotion of heat pumps and electric boilers powered by renewable electricity
- Utilization of carbon-free fuels such as hydrogen, ammonia, and synthetic methane for high-temperature heat
- Construction of efficient heat utilization systems combining waste heat recovery and thermal storage technologies
- Integration with thermochemical processes (e.g., hydrogen production and resource recycling)

These technologies not only contribute to CO₂ reduction but also offer secondary benefits such as strengthening industrial competitiveness and realizing decentralized regional energy systems.

This workshop will focus on the decarbonization of heat and its utilization, particularly the energy that drives carbon circulation such as CO₂ capture, storage, and utilization. The aim is to share the latest research findings and clarify future directions

Program

13:45 Opening greetings

Mutsuko HATANO Executive Vice President for Research and Industry-Academia-Government Collaboration, Science Tokyo

13:50 Outline of Workshop

Teruoki TAGO Professor, School of Materials and Chemical Technology, Science Tokyo

14:00 Activity of InfoSyEnergy Consortium

Manabu IHARA Head of consortium; Director of Academy for Energy and Informatics; Professor, School of Materials and Chemical Technology, Science Tokyo

14:10 Lecture 1: “Contribution of Thermal Energy Storage to Carbon-Neutral Industry” (Tentative)

Yukitaka KATO Director of the Laboratory for Zero-Carbon Energy, Science Tokyo

14:40 Lecture 2: (TBD)

15:10 Lecture 3: “Development of Latent Heat Storage Technology for Heat Decarbonization and Its Application Prospects in Broad Thermal Management”

Takahiro NOMURA Professor, Research Center for Energy-Material Integration, Faculty of Engineering, Hokkaido University

15:40 Break

15:50 Panel Discussion “Decarbonization of Heat and Its Utilization”

Moderator: Manabu IHARA
Panelists : Yukitaka KATO, Takahiro NOMURA, others TBD

16:50 Closing Remarks

Manabu IHARA

For students, faculty of Science Tokyo and ISE consortium members only

Registration
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Deadline: October 30

