

International Symposium on Thermal Energy Storage Science and Engineering 2022 (TESSE 2022)

～Frontiers of Thermal Storage Technology as Energy Storage Technology～

Organized by : The Heat Transfer Society of Japan



Co-organized by : Faculty of Engineering, Hokkaido University/JST COI-NEXT



Supported by: The Japan Society of Mechanical Engineers

Society of Chemical Engineers, Japan, Division of Energy Engineering

Society of Chemical Engineers, Japan, Division of Thermal Engineering

Purpose of the Symposium

Thermal energy storage is one of the energy storage technologies, and its new value is found toward the spread of renewable energy. Hokkaido is one of the world's leading renewable energy frontiers. Therefore, the symposium TESSE2022 (Online/Onsite event) will be held in Hokkaido with the main topic of thermal energy storage technology as energy storage technology, Carnot Batteries. We will discuss the vision of implementation by taking up cutting-edge research and development cases in Japan and overseas regarding the science and technology of thermal storage.

Date (Tentative)

September 5, 2022 15:00-19:15 (JST), 8:00-12:15 (CET)

Language

English/Japanese (Simultaneous translation)

Onsite Venue

Open Hall, Building B1, Faculty of Engineering, Hokkaido University

<https://www.eng.hokudai.ac.jp/graduate/about/building/openhall/>

Online System

Using Zoom (The link will be announced at least 3 days prior to the symposium)

Registration/ Payment Methods

Please register and pay the registration fee (5,000 JPY) from the following link within **August 26, 2022**.

<https://ec-convention.com/tesse2022/>



Contact

Secretariat of TESSE 2022

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Program

15:00-15:14 **Opening Remarks**
○Hiroshi TAKAMATSU
President, The Heat Transfer Society of Japan

About TESSE 2022
○Takahiro NOMURA
Faculty of Engineering, Hokkaido University

15:14-16:50

Session 1 Invited Lectures

Recent Advance on Thermal Energy Storage Technology in Japan

“Electric Thermal Energy Storage for Economic de-Carbonized Society”

○Toru OKAZAKI
The Institute of Applied Energy

“Contribution of Thermal Energy Storage to Establishment of Carbon Neutrality”

○Yukitaka KATO
Director, Prof., Laboratory for Zero-Carbon Energy Institute of Innovative Research, Tokyo Institute of Technology

“Development of the High-Energy Density Thermochemical Storage System”

○Hiroshi KAMIYA
AICHI STEEL CORPORATION

“Development of h-MEPCM Latent Heat Storage Material for High Temperature and its Application to Carnot Batteries”

○Takahiro NOMURA
Faculty of Engineering, Hokkaido University

“Conceptual Design of Large-Scale Latent Heat Thermal Energy Storage System Utilizing Surplus Renewable Energy for Steam Power Generation”

○Takahiro YAMANA
Heat Transfer Research Department, Research & Innovation Center, Mitsubishi Heavy Industries, LTD.

“Demonstration of Packed Rock Bed Thermal Energy Storage System”

○Chikako IWAKI
Toshiba Energy Systems & Solutions Corporation Energy Systems Research and Development Center

16:50-17:00 **Break**

17:00-18:30

Session 2 Keynote Lectures

**Ongoing Projects Related to Carnot Battery in Europe and
Mega-Trends in Thermal Energy Storage Technology Development**

“Carnot-Batteries and the decarbonization of coal fired power plants”

○André THESS

Director, German Aerospace Center (DLR), Institute of Engineering Thermodynamics
Professor, Stuttgart University

***“Development and Demonstration of Large-scale Thermochemical Energy Storage
Systems”***

○Corey BLACKMAN

PhD, SaltX Technology, Stockholm, Sweden

“Circular Techno-Economic Aspects of Thermal Energy Storage”

○Justin NW CHIU

Assoc. Prof., KTH Royal Institute of Technology

“The Role of Thermal Energy Storage in Future Energy Systems”

○Andreas HAUER

Chairman of the Board, Bavarian Center for Applied energy Research, ZAE Bayern

18:30-19:15

Session 3 Q&A and Panel Discussion

19:15~

Closing Remarks

○Kazuei ISHII

Faculty of Engineering, Hokkaido University