# Energy Informatics.Academy Conference 2025

**3-6 December 2025, Universiti Tenaga Nasional (UNITEN), Kuala Lumpur, Malaysia**

## EI.A 2025 Special Session on

## Thermal Storage and Flexibility in Buildings: Digitalization, Control, and Market Integration of Activated Building Mass

### Overview

As the global energy transition accelerates, buildings are emerging not only as energy consumers but also as active storage and flexibility assets. This special session focuses on the role of thermal component activation, using structural building mass (e.g., concrete, wood, clay) as a form of integrated thermal storage, for enabling load shifting, demand-side management, and sector coupling in future renewable-based energy systems.

The special session will explore how digital systems, smart controls, predictive models, and standardized design approaches are transforming buildings into distributed energy resources. It invites contributions on simulation tools, control algorithms, energy market participation strategies, business models, and regulatory enablers for thermal activated building mass (TAB). Of special interest are system integration strategies, real-world demonstrations, and scalable innovations that unlock the full potential of building mass for heating, cooling, and grid flexibility.

This special session is organized by IEA ES Standardized Use of Building Mass as Storage for Renewables and Grid Flexibility. The special session is part of Energy Informatics.Academy Conference 2025 (EI.A 2025), to be held on 3–5 December 2025 at Universiti Tenaga Nasional (UNITEN), Kuala Lumpur, Malaysia.

### Topics

Topics of interest include, but are not limited to:

- Digital modeling, simulation, and predictive control for TAB
- Integration of TAB with smart grids and local energy systems
- Flexibility quantification and KPIs for energy markets
- Interfacing and interoperability of TAB systems with IoT and BMS
- Demand-side management using building mass as thermal storage
- Sector coupling using power-to-heat and hybrid storage concepts
- End-user behavior, comfort, and data privacy in control systems
- Business models and incentive frameworks for TAB deployment
- Regulatory and policy enablers/barriers for storage-based buildings
- Standardization efforts for market uptake of TAB technologies
- Use cases from new construction, retrofitting, and repurposed buildings
- TAB in multi-purpose, residential, or public building settings

### Organizing Committee

Christoph Rohringer (AEE INTEC, Austria)
Alireza Afshari (Aalborg University, Denmark)
Daniel Muschick (BEST - Bioenergy and Sustainable Technologies GmbH, Germany)
Zheng Grace Ma (University of Southern Denmark, Denmark)
Bo Nørregaard Jørgensen (University of Southern Denmark, Denmark)

### Important Dates

- Paper submission deadline: **31 August 2025**
- Notification of acceptance: 15 September 2025
- Camera-ready paper due: 15 October 2025
- Registration deadline: 15 October 2025
- Conference dates: 3-5 December 2025

### Paper submission

EI.A 2025 special session accepts three types of submissions:

- Long papers (12-15 pages excluding references)
- Short papers (6-12 pages including references)
- Abstracts (max. 250 words excluding references)

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Please check the conference webpage for the details: https://www.energyinformatics.academy/2025-eia-conference-submission