

2026 AI FOR ENERGY WORKSHOP



4.20. MON – 4.21. TUE
09:30 - 16:30

Korea Institute of Energy Research (KIER),
Daejeon Headquarters



With AI emerging as a key driver for the energy transition, this workshop is planned as a follow-up activity to the 7th RD20 “AI for Energy” session.

Hosted by



Organized by



Supported by



4.20 DAY 1

OPENING CEREMONY

- 1 Opening Remarks
Hohyeon Lee (Vice Minister, Ministry of Climate, Energy and Environment)
- 2 Welcome Remarks
Yeungshik Kim (Chairperson of NST)
- 3 Congratulatory Remarks
Chang-Keun Yi (President of KIER)

PLENARY TALKS

- 1 AI for Accelerating Materials Discovery, Synthesis and Characterization
Anthony Burrell (NLR, USA)
- 2 How AI Will Change the Future of the World: Substitution, Reconfiguration, and New Paradigm
Hyeonmo Ku (Former KT CEO, KAIST Professor, Korea)

TOPIC 1. AI FOR ENERGY

Chairs. Ray Grout^{NLR}, Mincheol Cho^{AIST},
Byunggu Yoo^{OCTR Tech.}

- 1 AI for Energy Systems and Innovation
- Global Grid Intelligence: Democratizing AI for Power Systems through International Collaboration
Ray Grout (NLR, USA)
- 2 From Fluid Dynamics to System-Level Simulation: Toward Green Hydrogen- and Biomass-Based Energy Systems
Keiichi Mochida (RIKEN CSRS, Japan)
- 3 AI Applications in Japanese Home Energy Big Data and Development of External Control Technology for Home Demand-Side Resources
Mincheol Cho, Tomonori Honda (AIST, Japan)
- 4 Physics-Informed Machine Learning for Optimal Operation of Multi-Energy Systems
Mohamed Tahar Mabrouk (CNRS, IMT Atlantique, France)
- 5 AI Based Forecasting for Renewables and Demand-Side
Dogan Gezer (TUBITAK MRC, Türkiye)
- 6 AI-Driven Autonomous Buildings: Redefining Energy Efficiency through Smart Automation
Byunggu Yoo, Hassan Imran (OCTR Technologies, Korea)
- 7 A Study on the Effectiveness of Deep Learning in Time-Series Energy Forecasting
Myeongchan Oh (KIER, Korea)

4.21 DAY 2

TOPIC 2. AI FOR AUTONOMOUS DISCOVERY

Chairs. Jae Yong Lee^{KIER}, Scott Smith^{NRC}

- 1 AI Multi-Agent Driven Energy Facility Operation
Jae Yong Lee (KIER, Korea)
- 2 Integrating Open Source Data with Self-Driving Laboratory Design for AI Driven Materials Discovery or Process Optimization
Scott Smith (NRC, Canada)
- 3 Policy, Regulation and Risks in AI and Digitalisation for Energy
Aidan Rhodes (UKERC/Imperial College London, UK)
- 4 AI-Powered Automated MOF Discovery
Jihan Kim (KAIST, Korea)
- 5 Accelerating Green Energy Electrocatalyst Development through AI-Integrated Multiscale Modeling and Experimental Studies
Min Ho Seo (PKNU, Korea)
- 6 MARK: AI Materials Scientist for Nanomaterials
Sang Soo Han (KIST, Korea)

TOPIC 3. ENERGY FOR AI

Chairs. Taha Selim Ustun^{AIST}, Chi-Young Jung^{KIER}

- 1 Predictive Maintenance in Power Systems for Increased Performance and Reliability
Taha Selim Ustun (AIST, Japan)
- 2 Modeling the Nexus of Generative AI Expansion and Power System Reliability: Quantitative Projections for 2038 Grid Stability
Chang Ki Kim (KIER, Korea)
- 3 Intelligent Buildings: Leveraging AI for Electrification, Operation and Optimization
Saptak Dutta (NRC, Canada)
- 4 Visual AI-Based Defect Diagnosis for PEMFC and PEMWE Electrode
Chi-Young Jung (KIER, Korea)
- 5 AI-Driven Next-Generation EMS in Korea: Recent Advances and Real-Time Node-Level Forecasting of Distributed PV Generation
Jae-Kyeong Kim (KERI, Korea)

JOINT SESSION

Chairs. Anthony Burrell^{NLR}, Hyunkeong Kim^{KETEP}

- 1 Summary of the 3 Sessions
- 2 Further Collaboration Opportunities for International Collaboration
- 3 Future Direction of AI Workshop for RD20