



International Workshop on Energy Conversion 2025 (IWECC2025)
14-16 September 2025, Isparta, Türkiye

IWECC2025 Program

Hilton Garden Inn Isparta
Isparta, Türkiye

<September 14, Sunday>

15:30–18:00 **Registration** at Hilton Garden Inn Isparta

16:00–18:00 IWECC committee meeting

<September 15, Monday>

9:00–9:20 **Opening ceremony** (Chair: Prof. O. Kizilkan)
Prof. Yılmaz Çatal, *Reactor of Isparta University of Applied Sciences*

Session 1: Transportation of Energies and Energy Conversion Systems 1

Chair: Prof. O. Kizilkan

9:20–9:40 **CO₂ Dry Ice for Energy Storage and Power Generation**
H. Yamaguchi^{1, 2, 3*} and S. Wu²
¹*Doshisha University, Japan*
²*Sinocarbo-Energy (Beijing) Technology Co., Ltd., China*
³*Peking University, China*

- 9:40–10:00 **Magnetic Fluid-Assisted Bubble Control for Efficient Water Electrolysis**
Y. Iwamoto*, R. Somiya, and Y. Ido
Nagoya Institute of Technology, Japan
- 10:00–10:20 **A Quantum Computing-based Lattice Boltzmann Method with A Linearized Non-Equilibrium Collision Operator and Modular Circuit for Practical flow Simulation**
X. D. Niu*
Shantou University, China
- 10:20–10:40 Coffee break

Session 2: Energy Conversion and Related Research Topics 1

Chair: Prof. Y. Iwamoto

- 10:40–11:00 **Fuel Conversion of Carbon Dioxide Using Nonthermal Plasma Technique**
H. Yamasaki^{1,2*}
¹*Doshisha University, Japan*
²*Osaka Metropolitan University, Japan*
- 11:00–11:20 **Electrostatic Adsorption of Particulate Matter on Water Surface via DC Voltage for Air Purifying Filter Applications**
T. Ubukata* and T. Kuwahara
Nippon Institute of Technology, Japan
- 11:20–11:40 Coffee break

Session 3 (Online): Transportation of Energies and Energy Conversion Systems 2

Chair: Prof. T. Kuwahara

- 11:40–12:00 **Mass Transfer in CO₂–CO₂ and CO₂–N₂ Jet Mixing Flows near the Supercritical Region**
X. Li*, W. Xi, and L. Chen
Chinese Academy of Sciences, China
- 12:00–12:20 **High-Speed Interferometer Visualization and Statistical Analysis of Turbulent Supercritical CO₂ Boundary Flow in Mini-Channels**
H. Huang*, G. Zeng, and L. Chen

Chinese Academy of Sciences, China

12:20–12:40 **SAF Synthesis by Using Flow Type Microwave Reactor**

N. Zhu*

Shizuoka Institute of Science and Technology, Japan

12:40–12:50 Announcement for the next IWEC

12:50–14:00 Lunch

14:00–19:00 Technical Tour

19:00–21:00 Welcome reception

<September 16, Tuesday>

Session 4: Transportation of Energies and Energy Conversion Systems 3

Chair: Prof. H. Yamasaki

9:20–9:40 **Deep Learning-Based Defect Detection in Photovoltaic Panels for Enhanced Quality Control**

C. Keser and I. S. Uncu*

Isparta University of Applied Sciences, Türkiye

9:40–10:00 **Heat Transport Characteristics of a Heat Transport Device Using a Water-Based Magnetic Fluid with a U-Shaped Heating Section**

K. Matsutani^{1*}, T. Kuwahara¹, K. Kasai², T. Katayama², J. Yabuki², and S. Hayashi²

¹ *Nippon Institute of Technology, Japan*

² *Ichinen Chemicals Co., Ltd, Japan*

10:00–10:20 **Multi-Parameter Optimization for Low-Carbon Emissions in Ammonia-diesel Dual-fuel Engine Based on Orthogonal Experimental Design**

D. Tang*

Jiangsu University, China

10:20–10:40 Coffee break

Session 5: Energy Conversion and Related Research Topics 2

Chair: Prof. Y. Iwamoto

- 10:40–11:00 **Dual Valorization of Hydrogen and Oxygen from Water Electrolysis for Sustainable Energy and Trout Aquaculture**
I. S. Uncu and O. Kizilkan*
Isparta University of Applied Sciences, Türkiye
- 11:00–11:20 **Sterilization Efficiency and Chemical Decomposition in Water Treatment Technology Using Water as a Treatment Medium**
T. Kuwahara*
Nippon Institute of Technology, Japan
- 11:20–11:40 Coffee break

Session 6 (Online): Energy Conversion and Related Research Topics 3

Chair: Prof. H. Yamasaki

- 11:40–12:00 **Hybrid Low-Temperature No-Frost Dehumidification System Technology Based on a Dehumidification Module**
G. Xi*
Nantong Institute of Technology, China
- 12:00–12:20 **Polymer Scission and Flow Dynamics in Microfluidic Systems for Advanced Manufacturing**
G. Yin*
Nantong Institute of Technology, China
- 12:20–12:40 **Numerical Study on the Influence of Free Ends on Vortex-Induced Vibrations**
C. Ma*
Nantong University, China
- 12:40–13:00 **Closing ceremony** (Chair: Prof. O. Kizilkan)
- 13:00–14:00 Lunch

<September 17, Wednesday>

9:00–11:00 IWECC committee meeting

12:20– Excursion