



# icae

International Conference on Applied Energy

**Advancing Energy Solutions  
for a Sustainable Future**

**Sept. 1-5, 2024  
Niigata City • Japan**

- **1 Welcome to ICAE2024**
- **2 Committees**
- **3 Program at a Glance**
- **4 Conf. Proceedings and preprints**
- **5 General Information**
  - Organization
  - Date
  - Time Difference
  - Venue
  - Registration
  - Invitation Letter & Visa application
- **6 Keynote Speakers**
- **7 Panel Sessions**
- **8 Young Scientist Workshop**
- **9 Editorial Board Meeting Notice**
- **10 Oral Presentations**
- **11 Presentation Guide**
- **12 Acknowledgments**
- **13 Useful Information**
  - Registration
  - Meal and Visits
  - Travel
  - Hotel
- **14 About Niigata City**

**icae**  
International Conference on Applied Energy

Niigata City • Japan

Advancing Energy Solutions for a Sustainable Future

**16th** International Conference  
on Applied Energy

Sept. 1-5, 2024

[www.applied-energy.org/icae2024](http://www.applied-energy.org/icae2024)

## **Welcome to the 16th International Conference on Applied Energy (ICAE2024): Advancing Energy Solutions for a Sustainable Future**

Welcome to the 16th International Conference on Applied Energy (ICAE2024)! Following the successful ICAE2023 in Doha, Qatar, we are thrilled to announce that ICAE2024 will take place in Niigata City, Japan, from September 1 to 5, 2024. This year, our theme is 'Advancing Energy Solutions for a Sustainable Future', building upon the previous year's focus on energy transitions towards carbon neutrality. The conference will encompass keynotes, invited speeches, plenary sessions, workshops, oral presentations, and exhibitions.

ICAE2024 aims to tackle the interdisciplinary challenges in the field of applied energy and contribute to the development of sustainable solutions. Our comprehensive range of topics encompasses clean energy conversion technologies, renewable energy sources, mitigation technologies, intelligent energy systems, energy storage, energy sciences, energy management and firm sustainability, policy and regulations, energy economics, and ethics.

If you have proposals for sessions, panels, workshops, or special forums, we encourage you to contact us without hesitation. All submitted papers will undergo a rigorous peer-review process, and accepted papers will be required to be presented orally at the conference. Additionally, all presented papers will be published in the Scopus-indexed 'Energy Proceedings' ([www.energy-proceedings.org](http://www.energy-proceedings.org)). Furthermore, selected papers from ICAE2024 will be recommended for publication consideration in renowned journals such as Applied Energy, Advances in Applied Energy, and Energy 360.

We eagerly anticipate your participation at ICAE2024 in Niigata City, Japan, where scientists, researchers, industry professionals, and policymakers from across the globe will gather to exchange knowledge and ideas, fostering innovation and progress in the field of applied energy!

# Committees

## CONFERENCE CHAIRS

Prof. Yoshiki Yamagata (Co-Chair)

Prof. Kunio Yoshikawa (Co-Chair)

Prof. Jerry Yan (Co-Chair)

## ORGANIZING COMMITTEE

Prof. Tielong Shen

Mr. Shuai Peng

Prof. Yuntian Chen

Mr. Shibo Zhu

Dr. Ying Du

Mr. Yuxiao Hu

Miss. Yan Liang

Dr. Junwei Liu

Prof. Haoran Zhang

Mr. Dayin Chen

Dr. Mingkun Jiang

Mr. Guotao Wang

Dr. Zhiling Guo

Prof. Hailong Li

Mr. Junxiang Zhang

Dr. Xiaodan Shi

Miss. Hongjun Tan

Dr. Zhenjia Lin

Miss. Yifan Zhou

## SECRETARY

Dr. X. Shi

Dr. Y. Du

Miss. Y. Liang

## SCIENTIFIC COMMITTEE

Prof. Jinyue YAN (Chair), Editor-in-Chief, Applied Energy

Prof. Jianzhong WU (Co-Chair), Co-Editor-in-Chief, Applied Energy

Prof. Zita VALE (Co-Chair), Co-Editor-in-Chief, Applied Energy

Prof. Siaw-Kiang CHOU (Co-Chair), Senior Editor, Applied Energy

Prof. Umberto DESIDERI (Co-Chair), Senior Editor, Applied Energy

A. K. Gupta USA

A. P. Roskilly, UK

D. Chiaramonti, Italy

D. K. Zhang, Australia

F. C. Sun, China

H. B. Sun, China

H. M. Xu, UK

J. Whalen, Canada

K. Yoshikawa, Japan

M. Kraft, UK

N. Hedin, Sweden

P. Lund, Finland

R. Span, Germany

S. T. Tu, China

X. H. Xia, South Africa

Y. Yamagata, Japan

C. H. Pang, Malaysia

E. Lester, UK

E. M. A. Saad, Qatar

S. Fikry, Qatar

A. Massardo, Italy

C. D. Rakopoulos, Greece

D. Guan, UK

E. Dahlquist, Sweden

G. Hammond, UK

H. G. Jin, China

J. Hetland, Norway

J. Z. Wu, UK

L. Kazmerski, USA

P. Yang, USA

N. Zhou, USA

P. Yang, USA

S. A. Kalogirou, Cyprus

T. Shamim, USA

Y. L. He, China

Z. Y. Luo, China

X. Gao, China

G. Zhu, Chin

S. Ghani, Qatar

A. Sleiti, Qatar

A. Meier, USA

C. S. Wang, Singapore

D. J. Lee, Taiwan

E. Martelli, Italy

G. Strbac, UK

H. L. Li, Sweden

J. Milewski, Poland

K. Hubacek, The Netherlands

M. K. H. Leung, Hong Kong

M. Sorrentino, Italy

O. Veneri, Italy

R. Madlener, Germany

S. Garimella, USA

X. G. Li, Canada

Y. M. Wei, China

T. Wu, China

F. C. Wang, China

L. Chen, China

H. Li, Sweden

S. Deng, Qatar



# ICAE2024, Sept 1-5, 2024

## Program at Glance

<b>Tokyo Time</b>	<b>Day 0: Sept 1</b>
13:00-17:00	Registration and Reception (Venue: International Conference Room)

<b>Tokyo Time</b>	<b>Day 1: Sept 2</b>						
09:00-09:30	Opening and Welcome speech (Venue: International Conference Room)						
09:30-10:00	<b>Keynote 1 (Venue: International Conference Room)</b> Geospatial Approaches to Modeling and Simulating Urban Building Energy Efficiency and Mitigation Measures <b>Prof. Qihao Weng</b>						
10:00-10:20	Tea/Coffee break (Venue: Corridor, 4F)						
10:20-10:50	<b>Keynote 2 (Venue: International Conference Room)</b> Transport of CO <sub>2</sub> and Hydrogen – Two Mostly Underestimated Aspects of Sustainable Energy- and Process-Technologies <b>Prof. Roland Span</b>						
10:50-11:00	Photo Session						
<b>Session Room</b>	<b>302A</b>	<b>302B</b>	<b>303</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>307</b>
<b>Session Code</b>	1-A1	1-B1	1-C1	1-D1	1-E1	1-F1	1-G1
11:00-11:15	68	209	187	225	25	144	115
11:15-11:30	73	48	65	30	196	51	21
11:30-11:45	290	139	334	268	55	140	90
11:45-12:00	87	368	275	235	109	141	210
12:00-13:30	Lunch Break (Venue: International Conference Room and 301)						
13:30-17:00	<b>Young Scientist Workshop (Venue: 302)</b> Advancing Integrated Industrial Energy Systems for Decarbonization: From Research to Real-world Implementation <b>Session Chair: Prof. Zhigang Li</b>						
<b>Session Room</b>	<b>302A</b>	<b>302B</b>	<b>303</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>307</b>
<b>Session Code</b>	1-A2	1-B2	1-C2	1-D2	1-E2	1-F2	1-G21
13:30-13:45			442	74	95	47	409
13:45-14:00			215	214	342	13	91
14:00-14:15			274	265	102	368	173
14:15-14:30			322	323	157	125	92
14:30-14:45			208	150	281	183	278
14:45-15:00			392	23	332	122	195
15:00-15:30	Tea/Coffee break (Venue: Corridor, 3F)						
<b>Session Room</b>	<b>302A</b>	<b>302B</b>	<b>303</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>307</b>
<b>Session Code</b>	1-A3	1-B3	1-C3	1-D3	1-E3	1-F3	1-G23
15:30-15:45			262	352	327	440	121
15:45-16:00			359	172	44	414	341
16:00-16:15			221	264	388	76	66
16:15-16:30			243	361	175	212	4
16:30-16:45			250	52	258	229	118
16:45-17:00			120	395	280	190	179
18:00-21:00	Banquet (Venue: International Conference Room)						

<b>Tokyo Time</b>	<b>Day 2: Sept 3</b>
-------------------	----------------------

09:00-09:30	<b>Keynote 3 (Venue: International Conference Room)</b> Development of solar photovoltaic vacuum glass insulation layer of buildings <b>Prof. Hongxing Yang</b>						
09:30-10:00	<b>Keynote 4 (Venue: International Conference Room)</b> The Cost Saving, Climate, and Health Effects of Global Solar PV Supply Chains <b>Dr. Gang He</b>						
10:00-10:30	Tea/Coffee break (Venue: Corridor, 4F)						
<b>Session Room</b>	<b>302A</b>	<b>302B</b>	<b>303</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>307</b>
<b>Session Code</b>	2-A1	2-B1	2-C1	2-D1	2-E1	2-F1	2-G1
10:30-10:45	188	137	178	130	105	228	149
10:45-11:00	181	90	107	384	331	63	336
11:00-11:15	203	193	83	182	211	42	79
11:15-11:30	356	177	49	370	127	231	89
11:30-11:45	200	300	67	148	169	84	69
11:45-12:00	34	116	337	205	258	129	321
12:00-13:30	Lunch Break (Venue: International Conference Room and 301)						
14:00-15:00	<b>Panel 1 (Venue: 301)</b> Integrated Simulation System using Urban Digital Twin for Smart Energy Management <b>Prof. Yoshiki Yamagata</b>						
<b>Session Room</b>	<b>302A</b>	<b>302B</b>	<b>303</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>307</b>
<b>Session Code</b>	2-A1	2-A2	2-C2	2-D2	2-E2	2-F2	2-G2
13:30-13:45	252	73	107	27	133	259	314
13:45-14:00	82	135	301	205	54	15	88
14:00-14:15	29	346	334	106	1	306	194
14:15-14:30	171	351	254	273	138	71	192
14:30-14:45	358	390	272	450	97	270	343
14:45-15:00	128	438	437	207	9	400	86
15:00-15:30	Tea/Coffee break (Venue: Corridor, 3F)						
15:30-16:30	<b>Panel 2 (Venue: 301)</b> Research on Human-Source-Load-Carbon Synergy Optimization Technology for Carbon-Neutral City Energy System Driven by Population Trajectory Big Data <b>Prof. Jie Yan</b>						
<b>Session Room</b>	<b>302A</b>	<b>302B</b>	<b>303</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>307</b>
<b>Session Code</b>	2-A3	2-A3	2-C3	2-D3	2-E3	2-F3	2-G3
15:30-15:45	132	80	345	56	319	365	253
15:45-16:00	75	85	107	269	223	204	31
16:00-16:15	373	119	218	384	153	237	421
16:15-16:30	386	123	394	482	133	455	311
16:30-16:45	348	232	345	77	158	62	146
16:45-17:00	124	226	163	443	155	20	199

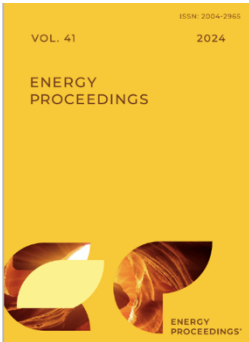
<b>Tokyo Time</b>	<b>Day 3: Sept 4</b>						
<b>Session Room</b>	<b>302A</b>	<b>302B</b>	<b>303</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>307</b>
<b>Session Code</b>	3-A1	3-B1	3-C1	3-D1	3-E1	3-F1	3-G1
09:00-09:15	288	246	345	213	166	271	371
09:15-09:30	46	37	326	174	133	26	219
09:30-09:45	136	39	60	242	404	316	439
09:45-10:00	289	285	99	152	43	24	

10:00-10:30	Tea/Coffee break (Venue: Corridor, 3F)						
<b>Session Room</b>	<b>302A</b>	<b>302B</b>	<b>303</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>307</b>
<b>Session Code</b>	3-A2	3-B2	3-C2	3-D2	3-E2	3-F2	3-G2
10:30-10:45	36	8	250	269	112	170	259
10:45-11:00	189	206	504	495	28	513	103
11:00-11:15	376	94	126	277	257	241	57
11:15-11:30	185	375	429	249	387	20	427
11:30-11:45	317	348	236	485	7	14	493
11:45-12:00	432	131	487	448	303	403	497
12:00-13:30	Lunch Break (Venue: International Conference Room and 301)						
13:30-15:30	Editorial Board Meeting (Venue: 301)						
<b>Session Room</b>	<b>302A</b>	<b>302B</b>	<b>303</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>307</b>
<b>Session Code</b>	3-A3	3-B3	3-C3	3-D3	3-E3	3-F3	3-G3
13:30-13:45	92	452	484	494	350		
13:45-14:00	507	406		476	436		
14:00-14:15	416	451		434	186		
14:15-14:30	408	407		473			
14:15-14:45	409	458					

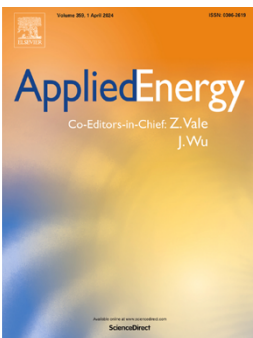
1 Renewable Energy
2 Clean Energy Conversion Technologies
3 Intelligent & Flexible System
4 Energy Management, Policy, Economics and Sustainability
5 Mitigation Technologies
6 Energy Science
7 Energy Storage
8 Hydrogen Energy

# Conf. proceedings and preprints

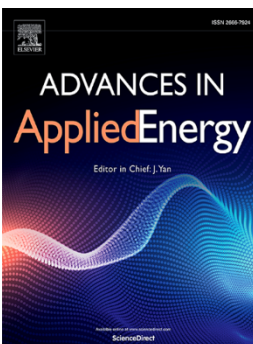
All presented papers will be published in Scopus-Indexed Energy Proceedings. Selected papers will be recommended for the further consideration of special issues in Applied Energy, Advances in Applied Energy and Energy360.



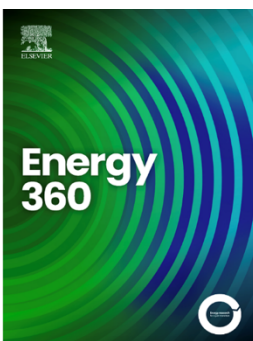
**Energy Proceedings** is a peer-reviewed, open-access high-quality serial publication with bimonthly/quarterly releases, currently 5-6 volumes annually. Energy Proceedings covers a broad field of multidisciplinary subjects in energy sciences and technologies. This includes energy-related economics and social sciences, as well as policy and legal studies.



**Applied Energy** provides a forum for information on research, innovation, development, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, analysis and optimization of energy processes, multi-energy systems, mitigation of environmental ...



**Advances in Applied Energy** is an open access journal that publishes cutting-edge applied research on all aspects of energy innovation that bridge the gaps between research, development, and implementation. The journal is a companion journal to the highly regarded journal Applied Energy.



**Energy 360** is a forward-looking journal dedicated to disseminating high-quality and transformative research in the energy field. It serves as a platform for publishing and nurturing new ideas from the next generation of energy scholars. The journal seeks submissions that not only advance the field but also offer novel perspectives and constructive evaluations, reflecting the innovative spirit of young researchers.

# General Information

## Organized by

Applied Energy Innovation Institute (AEii)

## Co-organized by

Keio University

Tokyo Institute of Technology

## Supported by the international journals

Applied Energy

Advances in Applied Energy

## Date

September 1-5, 2024

## Time Difference

UTC/GMT +09:00

## Time Zone Converter

City Location	Time				
Tokyo, Conf. Time	09:00	10:00	11:00	12:00	13:00
Sydney, Australia	10:00	11:00	12:00	13:00	14:00
Dhaka, Bangladesh	06:00	07:00	08:00	09:00	10:00
Ottawa, Canada	20:00(-1)	21:00(-1)	22:00(-1)	23:00(-1)	00:00
Beijing, China	08:00	09:00	10:00	11:00	12:00
Copenhagen, Denmark	02:00	03:00	04:00	05:00	06:00
Helsinki, Finland	03:00	04:00	05:00	06:00	07:00
Berlin, Germany	02:00	03:00	04:00	05:00	06:00
New Delhi, India	05:30	06:30	07:30	08:30	09:30
Rome, Italy	02:00	03:00	04:00	05:00	06:00
Luxembourg, Luxembourg	02:00	03:00	04:00	05:00	06:00
Amsterdam, Netherlands	02:00	03:00	04:00	05:00	06:00
Oslo, Norway	02:00	03:00	04:00	05:00	06:00
Islamabad, Pakistan	05:00	06:00	07:00	08:00	09:00
Warsaw, Poland	02:00	03:00	04:00	05:00	06:00
Riyadh, Saudi Arabia	03:00	04:00	05:00	06:00	07:00
Pretoria, South Africa	02:00	03:00	04:00	05:00	06:00
Stockholm, Sweden	02:00	03:00	04:00	05:00	06:00
Dubai, United Arab Emirates	04:00	05:00	06:00	07:00	08:00
London, United Kingdom	01:00	02:00	03:00	04:00	05:00
New York, United States	20:00(-1)	21:00(-1)	22:00(-1)	23:00(-1)	00:00

# General Information

## Venue

Toki Messe (Niigata Convention Centre)

[Address] 6-1 Bandaijima, Chuo-ku, Niigata City, Niigata 950-0078 Japan

[Access] 10min from Niigata Station by taxi, 20min from Niigata Airport by taxi



\*For detailed information see Useful information - Travel

## Registration

### Official Registration Time

Date	Registration Venue	Tokyo Time
Sept. 1, 2024 (Sunday)	International Conference Room	13:00-17:00

\*Note that the registration is always open during the conference, The above is the official centralized registration time Please contact Email ([icae2024@applied-energy.org](mailto:icae2024@applied-energy.org)) for registration outside of the official registration time.

# General Information

## Invitation Letter & Visa application

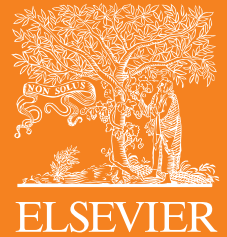
The Conference Organizers will gladly assist you during the Visa application process and provide a visa invitation letter to those delegates who have registered and paid to attend the Conference. Please note the following when applying for a visa invitation letter: Delegates must fully register and pay to be able to apply for a visa invitation letter. The Organizers cannot provide a visa invitation letter to accompanying persons or family if they are not registered to attend the conference. The visa invitation letter will help you during the application for a visa permit to authorities and is NOT intended to substitute this official document and/or process.

To request a visa invitation letter or conference invitation letter, you must fill in the form <https://forms.office.com/r/QMmUTRPmiG> firstly and then send your detailed request to [icae2024@applied-energy.org](mailto:icae2024@applied-energy.org) with subject "invitation letter". The conference invoice received after completing the registration payment must be attached in your request email. The letter can be issued only after your payment is complete. For more information, please contact us. The visa invitation letter needs at least 5 working days to process.

- Full Name
- Date of Birth
- Gender
- Nationality
- Institution
- Position
- Passport Number
- Date of Expiry
- Postal Address
- Telephone Number
- Conference Registration Number
- Paper ID
- Paper Title



# Applied Energy



*Applied Energy* covers a broad range of subjects from innovative technologies and systems of both fossil and renewable energy to the economic industrial and domestic use of energy.

## Reasons why you should publish in *Applied Energy*

### Speed

As an online only journal, there are no print delays, so once accepted your article will be made available online and fully citable quickly

### Visibility

*Applied Energy* is available via ScienceDirect, one of the biggest academic publishing platforms, so your article will be accessible by more than 12 million researchers, scientists, students and professionals from around the world.

### Impact

*Applied Energy* has a Journal Impact Factor of **10.1\*** and a CiteScore **21.2\*\***

### Value

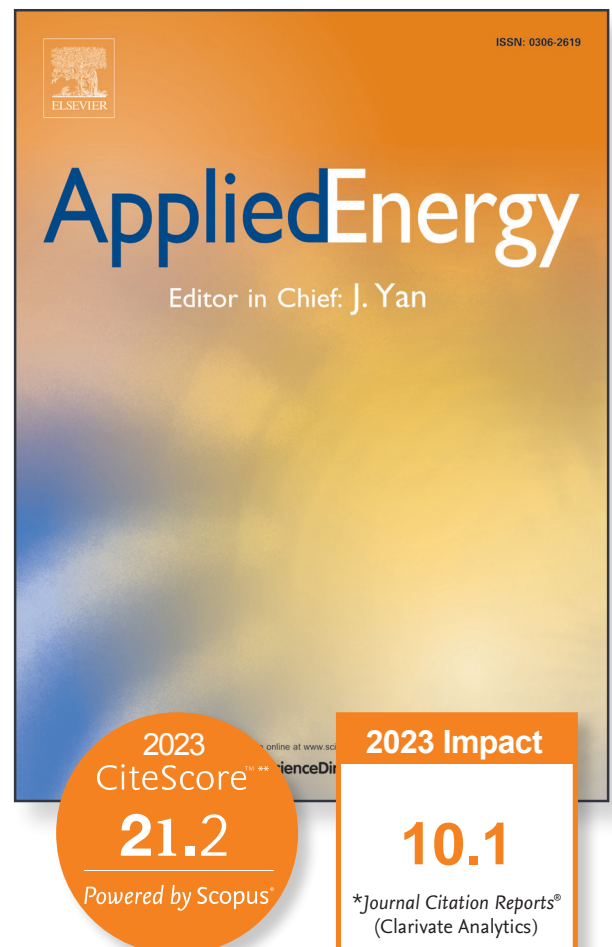
When you submit a manuscript to *Applied Energy* there are no submission fee, page charges or online colour costs

### Openness

*Applied Energy* supports open access, so you can choose to make your research freely available

### Reach

When your article has been published online, you will be sent a ShareLink which offers 50 days of complimentary online access to your article



\*\*CiteScore is an indicator of journal citation impact based on Scopus data. It measures the average number of citations in a given year from documents published in 5 previous calendar years. See journalmetrics.scopus.com for more information on CiteScore™ metrics.

Submit your manuscript today: <http://bit.ly/ApEnergy>

# Keynote Speakers



**Prof. Qihao Weng**

Department of Land Surveying  
and Geo-Informatics of The  
Hong Kong Polytechnic  
University

**Moderator:**

**Eva Thorin**

Mälardalen University Future  
Energy Center

**Sept 2nd, 2024**

**09:30-10:00**

**International Conference Room**

## ***Geospatial Approaches to Modeling and Simulating Urban***

### ***Building Energy Efficiency and Mitigation Measures***

#### **Abstract**

There is widespread agreement that geospatial AI, remote sensing, and geographic information system (GIS) play an increasingly important role in estimating, modeling and predicting carbon emissions and sinks. Due to its long-term availability, high resolution, repetitive and wide coverage, satellite image data has been widely utilized to track building energy consumption and carbon emissions in response to global climate change. This presentation will briefly discuss how geospatial methods have been applied in studying building energy use and carbon emission in global cities, focusing primarily on the themes of building energy consumption and mitigation measures for its reduction. This talk will present a GIS-based approach to combine climate modeling, building energy simulation, and inventory of building characteristics to quantify climate change's effect on building energy use in selected cities. Then, the potential of green and cool roofs in reducing pedestrian-level urban temperature and decreasing building energy consumption in different urban contexts will be assessed. Finally, future research directions for effective use of geospatial AI methods in carbon-neutrality research will be discussed.

#### **Bio**

Prof. Weng is a Chair Professor of Geomatics and Artificial Intelligence and a Global STEM Professor at the Hong Kong Polytechnic University, where he directs Jockey Club STEM Lab of Earth Observations and Research Centre for Artificial Intelligence in Geomatics. Before that, he worked as the Director of the Center for Urban and Environmental Change and a Professor at Indiana State University, USA, 2001-2021. He currently serves as an Editor-in-Chief of ISPRS Journal of Photogrammetry and Remote Sensing, and Lead of GEO's Global Urban Observation and Information Initiative. Prof. Weng is a Foreign Member of Academia Europaea (The Academy of Europe), and an elected Fellow of IEEE, AAAS, AAG, ASPRS, and AAIA. He has been honored with distinguished career awards that include NASA senior fellowship, AAG Distinguished Scholarship Honors Award, Taylor & Francis Lifetime Achievements Award, Japan Society for the Promotion of Science (Short-term S[E]) Fellowship, and AAG Remote Sensing Specialty Group Lifetime Achievement Award. Weng's research focuses on remote sensing and geospatial AI applications to urban environmental and ecological systems, urbanization impacts, urban climate and sustainability.

# Keynote Speakers



**Prof. Roland Span**

Dept. of Industrial Economics &  
Technology  
Management (NTNU Trondheim)  
RWTH Aachen University

**Moderator:**

**Eva Thorin**

Mälardalen University Future  
Energy Center

**Sept 2nd, 2024**

**10:20-10:50**

**International Conference Room**

## ***Transport of CO<sub>2</sub> and Hydrogen – Two Mostly Underestimated***

### ***Aspects of Sustainable Energy- and Process-Technologies***

#### **Abstract**

Carbon Capture (Utilization) and Storage – CCS or CCUS – and hydrogen-based technologies are two cornerstones of the developments of energy- and process-technologies without atmospheric CO<sub>2</sub>-emissions. Although both technologies are mostly discussed independently of each other, they are connected in multiple ways. A rapid implementation of hydrogen technologies will likely have to rely on blue hydrogen until sufficient green hydrogen becomes available. And the utilization of captured CO<sub>2</sub> requires green hydrogen as the second main component in sustainable organic chemistry. Another similarity is that both chemicals need to be transported at large scale. And it turns out that this aspect becomes an important cost driver that can decide about the economic viability of process chains. In part, the challenges related to the development of multimodal transport-networks for CO<sub>2</sub> and hydrogen are related to shortcomings regarding thermophysical property models for the involved fluids. This talk will highlight current efforts to overcome such limitations, how this work is reflected in the development of international standards, and where there are still open research questions.

#### **Bio**

Roland Span studied mechanical engineering at Ruhr-University Bochum (RUB) from 1983 to 1988. In 1992, he completed his Ph.D. with a thesis introducing a new reference equation of state for carbon dioxide, which is still considered the international standard for thermodynamic properties of carbon dioxide. In 1999, he completed his habilitation. At ALSTOM Power Technologies in Switzerland, he worked on gas-turbine related topics. In 2002, he became chair of Thermodynamics and Energy Technologies at University of Paderborn. Since 2006, he is chair of Thermodynamics at RUB. Prof. Span published numerous journal articles and monographs, including highly cited scientific papers dealing mostly with experimental and theoretical work on thermodynamic properties and the application of corresponding models to process simulations in energy technologies. Prof. Span and his scientific co-workers received several national and international awards; examples for recent ones are the NTNU & SINTEF CCS Award 2019 and an ERC Advanced Grant dealing with thermodynamic properties of hydrogen in 2022. In 2023, Prof. Span was awarded an honorary doctorate by the Norwegian University of Science and Technology (NTNU). Prof. Span is member of several scientific committees, including editorial boards and advisory boards in energy technology. As member of the management board of the JP CCS of the European Energy Research Alliance, Prof. Span is coordinating activities on CO<sub>2</sub> transport. He is member of the European Academy of Sciences and Arts and chair of the International Advisory Board of the Institute of Thermomechanics of the Czech Academy of Science.

# Keynote Speakers



**Prof. Hongxing Yang**

Department of Building  
Environment and Energy  
Engineering of The Hong Kong  
Polytechnic University

**Moderator**

**Yoshiki Yamagata**

Graduate School of System  
Design and Management, Keio  
University

**Sept 3rd, 2024**

**09:00-09:30**

**International Conference Room**

## ***Development of solar photovoltaic vacuum glass insulation***

### ***layer of buildings***

#### **Abstract**

Insulation of exterior walls of buildings plays an important role for energy saving of buildings, especially in cold weather areas. For traditional insulation material, insulation board is easily damaged and fire accident happen as some materials are flammable. This presentation is to show a novel solar photovoltaic vacuum insulation building wall that integrates power generation, insulation, noise reduction and fire prevention functions. The vacuum glazing and low-emissivity (Low-e) coating in the insulation layer can significantly weaken convective and radiative heat transfers through the glass panel. As a result, the special wall has a very low comprehensive heat transfer coefficient (U-value) of 0.23 W/(m<sup>2</sup>K), which is 70.8% less than that of traditional insulated walls (0.79 W/(m<sup>2</sup>K)). The special insulation layer can also be used in Hong Kong for saving cooling load. Taking into account the reduction in electricity consumption for air conditioning and the amount of photovoltaic power generation, one square metre insulation-wall can generate economic benefits of about HK\$290 per year and reduce CO<sub>2</sub> emissions by about 120 kg.

#### **Bio**

Prof. Yang is now working in Department of Building Environment and Energy Engineering of The Hong Kong Polytechnic University, Senior Editor of the International Journal of Applied Energy, and Senior Fellow of the Hong Kong Institution of Engineers. He is mainly engaged in the teaching and research of cutting-edge topics in renewable energy utilization and energy saving in buildings, including solar photovoltaic integration in building, solar air conditioning, wind energy development technologies. He has won the second prize of Science and Technology of the Higher Education Research Outstanding Achievement Award from Ministry of Education of the People's Republic of China and several Gold Medals from Geneva Invention Exhibitions. He and his group members have more than 330 SCI journal papers and 7 professional books published. He was on the list of the 2016-2020 Clarivate Analytics Highly Cited Scholars and has been the "Top 2% Global Top Scientists" in the field of "energy" announced by Stanford University since 2022.

# Keynote Speakers



**Dr. Gang He**

Baruch College of City University  
of New York

**Moderator**

**Yoshiki Yamagata**

Graduate School of System  
Design and Management, Keio  
University

**Sept 3rd, 2024**

**09:30-10:00**

**International Conference Room**

## ***The Cost Saving, Climate, and Health Effects of Global Solar PV***

### ***Supply Chains***

#### **Bio**

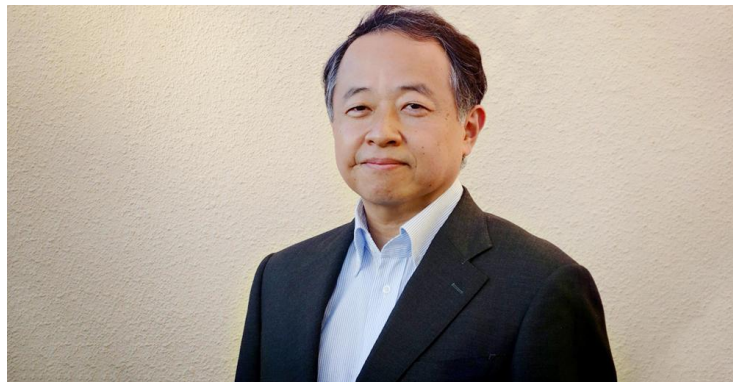
Dr. Gang He's work focuses on energy systems, energy policy, and energy transition. His work has appeared in high-impact journals such as Nature, Nature Communications, Nature Energy, Applied Energy, One Earth, and Environmental Science & Technology. His research has been reported by Nature, Scientific American, National Geographic, E&E News, among others. He testified for the New York State Climate Leadership and Community Protection Act and has advised the New York State Climate Action Scoping Plan. He has also involved in the U.S.-China collaboration on energy and climate change. He received his Ph.D. in Energy and Resources from University of California, Berkeley.

## Integrated Simulation System using Urban Digital Twin for Smart Energy Management

**Date:** September 1st, 2024

**Time:** 14:00 pm-15:00 pm

**Venue:** Room 301



**Prof. Yoshiki Yamagata**

Future Co- Creation Lab

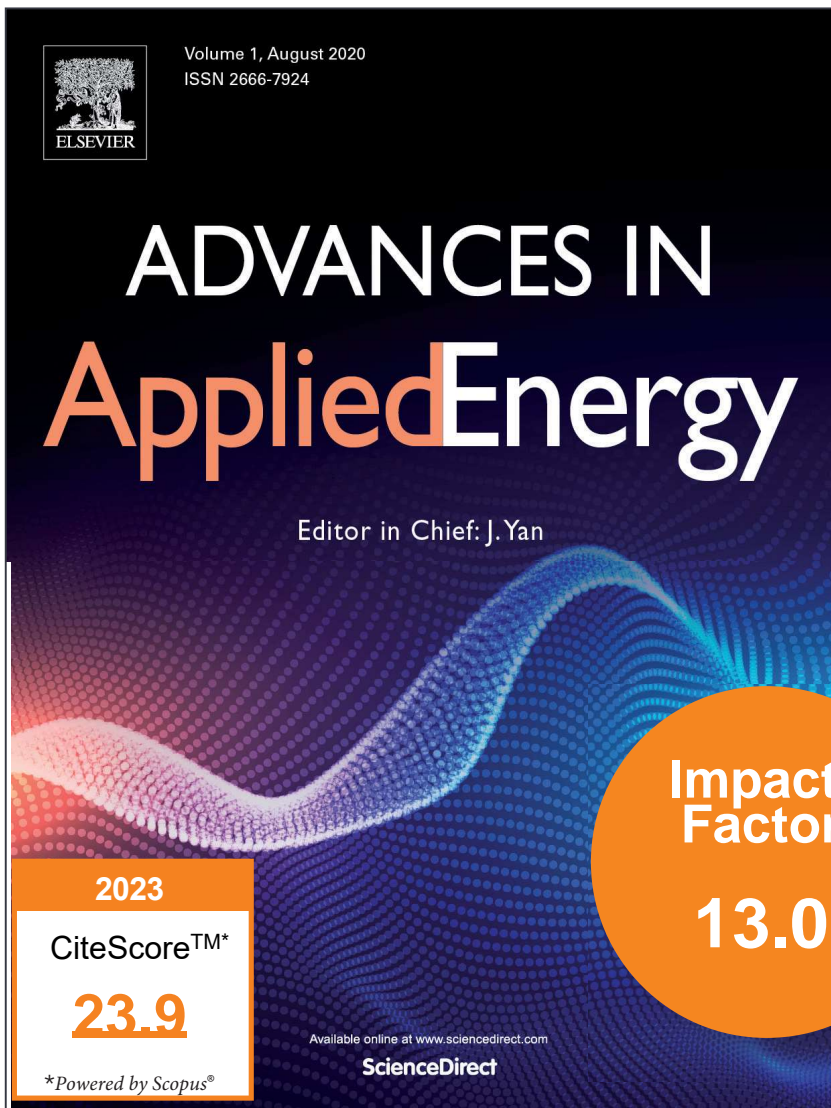
Graduate School of System Design and Management, Keio University

**Description:** We developed an integrated simulation method for smart energy management toward urban decarbonization in 2050, assuming a scenario of a future city where smart technologies related to buildings and transportation (net positive buildings, self-driving EVs, drones, flying cars, etc.) and digitalization of economic activities. Simulation method for future society include:

- Integrated simulation of energy supply and demand in buildings and transportation
- Next-generation GIS method for integrated analysis and visualization of Bigdata
- Carbon accounting and sustainability assessment for urban activities
- On-demand Energy Management Methodology.
- Gaming methods to promote behavior change.



# Advances in Applied Energy



A brand new,  
peer-reviewed  
open access  
journal.

Editor-in-Chief:

**Jinyue Yan**

*Royal Institute of Technology and  
Mälardalen University, Sweden*

 @ElsevierEnergy

 Elsevier Energy



Find out more and submit  
your manuscript online:  
**[elsevier.com/locate/adapen](http://elsevier.com/locate/adapen)**





# Young Scientist Workshop

## **Advancing Integrated Industrial Energy Systems for Decarbonization: From Research to Real-world Implementation**

**Date:** September 2nd, 2024

**Time:** 13:30 pm-17:00 pm

**Venue:** Room 302

**Session Chair:** Prof. Zhigang Li, The Chinese University of Hong Kong – Shenzhen, China

**Panelists:** Prof. Shuai Lu, Southeast University, China

Prof. Weiqi Hua, University of Birmingham, UK

Prof. Xinwei Shen, Tsinghua University, China

Prof. Hongxun Hui, University of Macau, Macao SAR of China

Dr. Tong Zhang, University of Leeds, UK

Dr. Shuai Yao, Cardiff University, UK

Prof. Yixun Xue, Taiyuan University of Technology, China

### **Description:**

The energy sector, responsible for the largest share of carbon emissions in human activities, plays a pivotal role in industrial decarbonization. This necessitates the adoption of clean energy production, efficient energy conversion, resilient energy transmission, and flexible energy consumption. Consequently, the interconnection and interaction among various energy systems, such as electricity, heating, cooling, and gas, are becoming increasingly intertwined, leading to the emergence of integrated energy systems (IESs) in the industry sector. In recent years, there has been a surge in research efforts within the academic community to develop fundamental methodologies for IES. Many of these methodologies have transitioned from theory to practical implementation in industrial projects, highlighting the significant potential of IES in decarbonization efforts. This panel aims to present the latest advancements in research and industrial practices of IESs, offering valuable insights for the ongoing development of the energy sector.

# Young Scientist Workshop

## Agenda:

5 minutes	<b>Prof. Zhigang Li</b> Introduction to the panel and setting the scene.
15 minutes	<b>Prof. Shuai Lu</b> <b>Title:</b> Physics Informed Data-Driven Modeling and Simulations of Multi-Energy Systems
15 minutes	<b>Prof. Weiqi Hua</b> <b>Title:</b> Digital Technologies Enabling Energy System
15 minutes	<b>Prof. Xinwei Shen</b> <b>Title:</b> Large-scale Integrated Energy System Planning with Decarbonization Policies and Technologies
15 minutes	<b>Prof. Hongxun Hui</b> <b>Title:</b> Data Valuation-Based Coordinated Optimization of Integrated Energy Systems With Large-scale Flexible Resources
15 minutes	<b>Dr. Tong Zhang</b> <b>Title:</b> Modelling challenges and prospects in renewable-based energy systems with hydrogen integration
15 minutes	<b>Dr. Shuai Yao</b> <b>Title:</b> Heat decarbonisation in South Wales Industrial Cluster: Techno-economic analysis of potential alternatives and its policy implications
15 minutes	<b>Prof. Yixun Xue</b> <b>Title:</b> Integrated Energy Systems with Near-Zero Carbon Emission: Exploration and Demonstration in the Antarctic
10 minutes	<b>Structured Q&amp;A</b>

# Young Scientist Workshop

## Speakers' Bio:



**Session Chair:**

**Zhigang LI**

Assistant Professor,  
The Chinese  
University of Hong  
Kong, Shenzhen

Zhigang Li is an Assistant Professor with the School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen. He obtained the B.E. and Ph.D. degrees both in electrical engineering from Tsinghua University in 2011 and 2016, respectively. From 2016 to 2024, he was an Associate Professor with the School of Electric Power Engineering, South China University of Technology. He also served as a Visiting Scientist with the Illinois Institute of Technology and Argonne National Laboratory. He is a Senior Member of both IEEE and CSEE. He received the Best Paper Award of the 2020 IEEE PES General Meeting. He serves as an Associate Editor for the IEEE Transactions on Sustainable Energy, and the CSEE Journal of Power and Energy Systems. In 2022 and 2023, he was marked as one of the Most Cited Chinese Researchers by Elsevier, and was listed among the World's Top 2% Scientists by Stanford University. His research focus includes energy internet, low-carbon smart grid, renewable energy resource management, and optimization theory.



**Panelist 1:**

**Shuai LU**

Associate  
Professor,  
Southeast  
University, China

Shuai Lu is a Lecturer at the School of Electrical Engineering, Southeast University, Nanjing, China. He received his B.S. degree in Smart Grid Information Engineering from Nanjing University of Science and Technology, Nanjing, China, in 2016 and his Ph.D. in Electrical Engineering from Southeast University, Nanjing, China, in 2021. From 2018 to 2019, he was a visiting scholar at the University of New South Wales, Sydney, Australia. He is a Young Editorial Board Member of Applied Energy and Electric Power Automation Equipment. His research interests include integrated energy systems, operations research, and data-driven techniques in power systems.

# Young Scientist Workshop



**Panelist 2:**

**Weiqi HUA**

Assistant Professor,  
University of  
Birmingham, UK

Dr Weiqi Hua is an Assistant Professor in Energy Systems at the University of Birmingham since 2023. He took postdoctoral positions at the University of Oxford and Cardiff University and received his Ph.D. degree from the University of Durham in 2021. Dr Hua is the founder of Energy Digits, and recognised as the Forbes 100 Most Influential Chinese in 2023. His research interests include: i) energy system modelling and optimisation, ii) digitalisation, digital twin, and machine learning for energy system analytics, and iii) Local energy markets and peer-to-peer energy trading, which has been funded by EPSRC, the Royal Society, British Academy, UK Government, Horizon 2020, and UK Network Innovation Allowance . Dr Hua is an Editorial Board Member of Applied Energy, IET Smart Grid, and Oxford Open Energy.



**Panelist 3:**

**Xinwei SHEN**

Assistant Professor,  
Tsinghua University

Dr. Xinwei Shen is an Assistant Professor at Shenzhen International Graduate School (SIGS), Tsinghua University. He graduated from Dept. of Electrical Eng., Tsinghua Univ. with B. Eng. and Ph. D., and used to be a visiting scholar at Illinois Institute of Tech., U. C. Berkeley and Univ. of Macau. His research interests include power system / integrated energy system / offshore renewable energy optimization. He is the PI for several NSFC/National Key R&D of China/industry-sponsored research projects. He is a senior member of IEEE, the young editorial board member of CSEE JPES/Applied Energy, and technical program co-chair of IEEE PES Energy Internet Coordinating Committee. He is also the winner of IEEE PES Technical Council Young Professionals Award (in 2023, the first recipient in Asia-pacific region) and “Young Elite Scientists Sponsorship Program” by CSEE, Best Paper Award at IEEE PES GM (2019/2020/2024), China Southern Grid/Guangdong Power Tech. Progress Award 1st Prize, et al.

# Young Scientist Workshop



**Panelist 4:**

**Hongxun HUI**

Assistant Professor,  
University of  
Macau, Macao  
SAR, China

Hongxun Hui is an Assistant Professor with the State Key Laboratory of Internet of Things for Smart City, University of Macau. Previously, he received a B. Eng. degree in 2015 and Ph.D. degree in 2020 both from the College of Electrical Engineering in Zhejiang University. From 2018 to 2019, he was a visiting scholar at the Advanced Research Institute in Virginia Tech and CURENT Center in University of Tennessee. His research interests are in the Internet of Things technologies for smart energy, optimization of integrated energy systems, control of flexible resources, and energy economics. He has authored/co-authored 1 international book, more than 80 papers (including more than 40 SCI journal papers), and 16 issued patents. One of the papers was selected as the ESI Highly Cited Papers (Top 1%). Dr. Hongxun Hui is Young Editorial Board Member and Guest Editor of high-level journals, including Applied Energy, Protection and Control of Modern Power Systems, Engineering Reports, etc. He got the Best Paper Award of IEEE iSPEC-2021, the First Prize and the Best Innovation Award of the 2021 National AI Application Competition in Power Dispatching, the Best Paper Award of IEEE E12-2023.



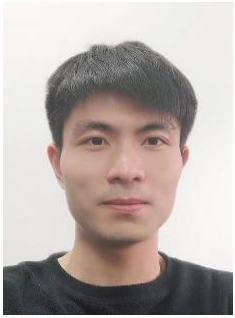
**Panelist 5:**

**Tong ZHANG**

Lecturer,  
University of Leeds,  
UK

Tong Zhang is now a research associate in the Centre for Integrated Renewable Energy Generation and Supply, Cardiff University and will join University of Leeds this August as a lecturer in smart energy system and future transport. She received a B.E. degree in Electrical Engineering in 2016, and a Ph.D. degree in Power System and its Automation in 2021, both from South China University of Technology, China. She is a member of the young editorial board of Clean Energy Science and Technology. She was the deputy champion of early career researcher affairs for Hydrogen Integration for Accelerated Energy Transitions Hub in UK and now an early career committee member of Supergen Energy Networks Hub. Her main research interests include the modelling, simulation and optimisation of integrated energy systems, as well as the system integration and flexibility provision of clean energy technologies, including hydrogen and tidal range energy.

# Young Scientist Workshop



**Panelist 6:**

**Dr. Shuai YAO**

Research  
Associate, Cardiff  
University, UK

Shuai Yao obtained his Ph.D. degree in electrical engineering from Southeast University in 2022. Since then, he has been working as a Postdoctoral Research Associate with School of Engineering, Cardiff University. His research focuses on analysing multi-energy flows / optimal energy flows in interconnected energy systems, maximising flexibility provision through energy systems integration, and exploring viable solutions for heat decarbonisation in different regions and assessing their impacts on electric power infra-structures. He was one of the recipients of the 2021 China Electric Power Science and Technology Progress Award (first prize) and the Best Paper Award of the 2017 EI2. He serves as a young editorial board member of Energy Efficiency First and a guest editor of Frontiers in Energy Research.



**Panelist 7:**

Yixun Xue

Associate  
Professor, Taiyuan  
University of  
Technology, China

Yixun Xue received the B.S. degree from Xi'an Jiaotong University in 2016, and received Ph.D. degrees from Tsinghua University, in 2021. In 2021, he joined Taiyuan University of Technology, Taiyuan, China, where he is currently an Associate Professor. His research interests include coordinated planning and optimization, and resilience enhancement in integrated energy systems.

# Editorial Board Meeting Notice

This notice is intended for the members of the AE/APEN Editorial Board

Dear Member of the Editorial Board,

We are pleased to announce the upcoming ICAE2024-Editorial Board Meeting scheduled as follows:

	Information
Topic	ICAE2024-Editorial Board Meeting
Time	Sept 4th 13:30-15:30
Location	Room 301

We look forward to your valuable participation in the meeting.

Best Regards,

ICAE committee



# Advances in Applied Energy

*Advances in Applied Energy* is a new, open access journal for publishing cutting-edge research in the field of applied energy. This new, fully peer-reviewed journal is a companion journal to the highly regarded journal *Applied Energy*.

With an expert editorial team, led by Editor-in-Chief Professor Jinyue Yan (Royal Institute of Technology and Mälardalen University, Sweden) this exciting new journal aims to provide authors and the community with a quality open access outlet for significant and impactful research.

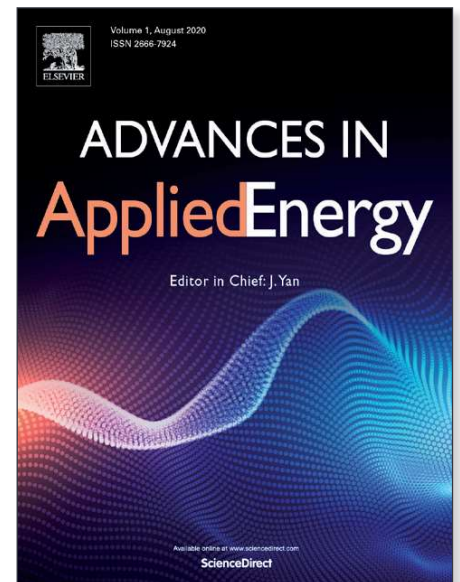
Covering a broad scope of topics, *Advances in Applied Energy* will publish applied research on all aspects of energy innovation that bridge the gaps between research, development, and implementation. Topics include, but are not limited to:

- New development trends: advances in cutting-edge applied energy areas, including renewable energy, clean energy conversion and utilization, smart and flexible system integration and optimization, energy storage, climate change mitigation, and energy sustainability;
- Systems characteristics: integrated energy systems such as industry, transport, and buildings; renewable energy; advanced conversion technologies; energy storage; emission mitigations; smart grids and mini/micro grids; distributed energy systems; e-mobility; and sustainability of energy systems;
- Energy nexus and synergy with other critical global issues: energy-water, energy-emissions, power-to-x, waste-to-energy, flexibility of renewable energy systems.

The journal considers full length articles, reviews, letters, commentaries, perspectives, forums and news & views for publication.



Read the full Aims & Scope:  
[elsevier.com/locate/adapen](https://www.elsevier.com/locate/adapen)



@ElsevierEnergy



Elsevier Energy



# Day 1: Sept. 2

9:00-09:30	<p align="center"><b>Openning and Welcome speech</b> Venue: International Conference Room</p>			
09:30-10:00	<p align="center"><b>Keynote 1</b> Prof. Qihao Weng <b>Geospatial Approaches to Modeling and Simulating Urban Building Energy Efficiency and Mitigation Measures</b> Venue: International Conference Room</p>			
10:00-10:30	<p align="center"><b>Tea/Coffee Break</b> Corridor, 4F</p>			
10:30-11:00	<p align="center"><b>Keynote 2</b> Prof. Roland Span <b>Transport of CO2 and Hydrogen – Two Mostly Underestimated Aspects of Sustainable Energy- and Process-Technologies</b> Venue: International Conference Room</p>			
<p align="center">Session Room: 302A Track 1 Renewable Energy</p>				
Time	Paper ID	Author	Paper Title	Code
11:00-11:15	68	Hind AlObeidli, Sameh Al-Shihabi, Zafar Said	Framework for Assessing Asset Performance Indicators for Solar Photovoltaic Power Plants	302A-1-A1-68
11:15-11:30	73	Ratu Keni Atika, Takuro Kobashi	Adoption of PV+EV Integration for Deep Decarbonization in Bali, Indonesia...	302A-1-A1-73
11:30-11:45	290	Lingshuang Dong, Jinfeng Xie, Ziwu Song, Yi Zhang	City-Scale Estimation of Actual Available Rooftop Areas for Solar Photovoltaic Using a Two-Stage Neural Network Model	302A-1-A1-290
11:45-12:00	87	Fude Duan, Xiongzhu Bu	An Improved Transient Search Optimizer for Microgrid Energy Management and Optimization Incorporating Multi-energy and Storage System and Demand Response	302A-1-A1-87
12:00-13:30	<p align="center"><b>Lunch Break</b> Venue: International Conference Room</p>			
13:30-17:00	<p align="center"><b>Young Scientist Workshop</b> <b>Advancing Integrated Industrial Energy Systems for Decarbonization: From Research to Real-world Implementation</b> Session Chair: Prof. Zhigang Li</p>			
<p align="center">Session Room: 302B Track 2 Clean Energy Conversion Technologie</p>				
Time	Paper ID	Author	Paper Title	Code
11:00-11:15	209	Shijie Bai, Shilong Li, Xingyu Liang, Kun Wang	Explore converging curves for enhancing shock waves in chemical shock tubes	302B-1-B1-209
11:15-11:30	48	Liqing Liu, Yi Chen, Huaxia Yan, Qiuhua Tao	Experimental Study on Seawater-based Dew Point Indirect Evaporative Cooling...	302B-1-B1-48
11:30-11:45	139	Yanbing Dai, Xiaoqu Han, Xuanhua Guo, Junjie Yan	Off-design characteristics of an intercooled and recuperative gas turbine integrated with transcritical organic Rankine cycle	302B-1-B1-139
11:45-12:00	368	Karpilov I, Papkov V, Pashchenko D	Ammonia-Fed Combined Cycle Plant with Chemically Recuperated Gas Turbine	302B-1-B1-368
12:00-13:30	<p align="center"><b>Lunch Break</b> Venue: International Conference Room</p>			
13:30-17:00	<p align="center"><b>Young Scientist Workshop</b> <b>Advancing Integrated Industrial Energy Systems for Decarbonization: From Research to Real-world Implementation</b> Session Chair: Prof. Zhigang Li</p>			
18:00-21:00	<p align="center"><b>Banquet</b> Venue: International Conference Room</p>			

# Day 1: Sept. 2

Session Room: 303				
Track 3 Intelligent & Flexible System				
Time	Paper ID	Author	Paper Title	Code
11:00-11:15	187	Raviteja Chemudupaty, Ivan Pavić	Electric vehicle scheduling strategies to reduce the imbalances due to user uncertainties	303-1-C1-187
11:15-11:30	65	Zhengrong Li, Qianru Chen, Heyu Wang, Chenliang Ma	Study on the Influence of Non-Uniform Surface Temperature on the Wind-Thermal Environment of the Building Complex	303-1-C1-65
11:30-11:45	334	Zeyu Tian, Zhaoyang Sha, Zhu Wang, Daotong Chong, Junjie Yan	Research on coordinated control strategy of a virtual power plant in response to random variations in renewable energy sources	303-1-C1-334
11:45-12:00	275	NGUYEN Quoc Viet, Sergio POTENCIANO MENCI, Joaquin DELGADO FERNANDEZ	Literature review for large-scale load forecasting with large volume of smart-meter data.	303-1-C1-275
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room</b>			
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	442	Jiaming Wang	A Unified Approach for Integrating Data-Driven Device Models in EMT Simulation of Microgrids	303-1-C2-442
13:45-14:00	215	Fang Guo, Lei Wang	Secure Finite-Time Event-based Control for Networked Power Systems under Cyber-Attacks	303-1-C2-215
14:00-14:15	274	Naoki Hanaoka, Yuji Higuchi, Naruto Arai, Kazuya Akiyama	Protection Coordination of Semiconductor Circuit Breakers in Ring-Type 380 VDC Microgrid	303-C2-274
14:15-14:30	322	Yujiro HIRANO, Takahiro YOSHIDA, Yoshiki YAMAGATA, Yukiko YOSHIDA	Energy Management Simulation for a Local Energy Supply System	303-C2-322
14:30-14:45	208	Yukai Jin, Ayyoob Sharifi	Predicting long-term building energy consumption using multiple feature clustering and machine learning: applications in Shanghai, China	303-C2-208
14:45-15:00	392	Qingshuang Jin, Yongchao Xue, Xiangyu Ren, Aile Zheng, Xiaobiao Wang	An Integrated Method of Data-driven and Water-drive Mechanism for Oil Production Forecast in high water cut reservoir	303-C2-392
15:00-15:30	<b>Tea/Coffee Break</b> <b>Corridor, 3F</b>			
Time	Paper ID	Author	Paper Title	Code
15:30-15:45	262	Chi-Jyun Ko, Kuo-Ching Chen	Analyzing the optimal voltage range for detecting internal short circuits in lithium-ion batteries	303-1-C3-68
15:45-16:00	359	Zonghan Li, Chunyan Wang, Yi Liu	Grounding Generative AI for Nudging Campus Energy and Water Conservation Behaviors	303-1-C3-359
16:00-16:15	221	Zexuan LI, Hui Ye, Haidong Deng, Fei Wu	Flying to transportation electrification: The role of ride-hailing services	303-1-C3-221
16:15-16:30	243	Shufan Zhang, Nan Zhou, Jinyue Yan, Minda Ma	GLOBUS: Global building renovation potential by 2070	303-1-C3-243
16:30-16:45	250	Masashi Matsubara, Masahiro Mae, Ryuji Matsuhashi	Evaluation of cost effectiveness of residential PV/BESS systems in Japan considering outage mitigation and battery degradation	303-1-C3-250
16:45-17:00	120	Yoshihide Suwa, Kenji Yonezawa, Yoshiyuki Ono, Hiroshi Hirata, Chisato Tambara, Yuichi Tabata, Hiroya Hagio	Safe application of high-pressure hydrogen gas	303-1-C3-120
18:00-21:00	<b>Banquet</b> <b>Venue: International Conference Room</b>			
Session Room: 304				
Track 4 Energy Management, Policy, Economics and Sustainability				
Time	Paper ID	Author	Paper Title	Code
11:00-11:15	225	Anindhita, Joko Santosa, Koji Tokimatsu"	Evaluating the Long-Term Effects of Carbon Capture and Storage Technologies on Indonesia's Power Sector	304-1-D1-225
11:15-11:30	30	Tomohiro Akutsu, Yoshiki Yamagata	Empirical Evaluation of Negotiation Behavior Using P2P Energy Trading Game	304-1-D1-30

# Day 1: Sept. 2

11:30-11:45	268	Aravinda De Chinnu Arul Babu, Venkatasailanathan Ramadesigan, Rangan Banerjee, Manajit Sengupta	Impacts of climate change on the generation potential of solar and wind energy systems in India	304-1-D1-268
11:45-12:00	235	Anisah Andika Fajar, Koji Tokimatsu	Cost Analysis Comparison of Reference and Near-Zero Energy Office Building Design in Indonesia: A Life Cycle Approach and Its Sensitivity Analysis	304-1-D1-235
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room</b>			
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	74	Hu Fanshuai, Qingyuan Zhu, Dequn Zhou	The Interaction Effects of Renewable Portfolio Standards and Carbon Emission Trading: Overlapping or Non-overlapping incentive?	304-1-D2-74
13:45-14:00	214	Jiajing GAO, Jialin Wu, Yi Zhang	Use behavior Analysis of home electric device based on panel study in Shenzhen, China	304-1-D2-214
14:00-14:15	265	Juan C. González Palencia, Aya Ichikawa, Yuto Ogura, Kazuki Yanaoka, Mikiya Araki	Techno-Economic Assessment of the impact of CO2 Emissions Constraints on the Design of Hydrogen Production Systems	304-1-D2-265
14:15-14:30	323	Chaeyeon Han, Subhrajit Guhathakurta, Eric Hittinger, Kun Liu, Sinoun Phoung, Eric Williams	Is Increased Teleworking Linked to Higher Residential Energy Consumption?	304-1-D2-323
14:30-14:45	150	Kasuni Guruvita, Eva Thorin, Anders Avelin, Fredrik Wallin	Assessment of sport area electricity system using a resilience energy system framework	304-1-D2-150
14:45-15:00	23	Jiangpeng Hu, Pin Jia, Binyu Wang, Quanyu Pan	A new method for clarifying the water breakthrough rule of horizontal wells in the bottom-water oil reservoir and field application	304-1-D2-23
15:00-15:30	<b>Tea/Coffee Break</b> <b>Corridor, 3F</b>			
Time	Paper ID	Author	Paper Title	Code
15:30-15:45	352	Qi He	The impact of manufacturing servitization on carbon emission intensity in the context of global value chains: An empirical analysis based on the WIOD dataset	304-1-D3-352
15:45-16:00	172	Yoshiyuki Kimura, Yoshiki Yamagata	Sustainable Urban Development: Balancing Decarbonisation and Well-being Using GIS Scenario Analysis	304-1-D3-172
16:00-16:15	264	Jiawei LIU, Dan Wang, Hongjie Jia, Yizhe Li	Method for Entropy State Analysis of Integrated Energy Cyber-Physical Systems Under Information Attacks	304-1-D3-264
16:15-16:30	361	Xiang Chen, Guangcai Gong, Mingfa Zhang, Xing Shi, Jinchun Tang	Simulation analysis of the air source heat pump performance with distributed defrosting device under frost conditions	304-1-D3-361
16:30-16:45	52	Jinbao Liu, Linsong Cheng, Pin Jia, Zheng Zhang, Jiangpeng Hu, Cong Peng	Classification of Well Test Models and Characterization of Opening Pressure for Water-Induced Fractures	304-1-D3-52
16:45-17:00	395	S.Y. Liu, P. Zhou, M. Wang	Stylized agent-based modeling on the power industry and carbon emission trading system: from the perspective of Chinese power enterprises	304-1-D3-395
18:00-21:00	<b>Banquet</b> <b>Venue: International Conference Room</b>			
<b>Session Room: 305</b>				
<b>Track 6 Energy Science</b>				
Time	Paper ID	Author	Paper Title	Code
11:00-11:15	25	Jinxin Cao, Yiqiang Li, Yuling Zhang, Yaqian Zhang, Yifei Cai, Qihang Li, Xuechen Tang, Tao Song, Zheyu Liu	Imbibition Distance and Influencing Factors of Surfactant in Tight Reservoir : An Experimental Study	305-1-E1-25
11:15-11:30	196	Huan Chen, Zhiming Wang, Pengyin Yan, Ying Yang	Experimental investigation of fracture conductivity in shales considering proppant embedment and crushing	305-1-E1-196
11:30-11:45	55	Anna Dai, Zhiming Wang, Tianhao Huang, Xianlu Cai	Production Prediction and Optimization Combination in Multilayer Commingled CBM System in Eastern Yunnan and Western Guizhou	305-1-E1-55
11:45-12:00	109	Yuanxun Ding, Hua Tian, Gequn Shu, Hongfei Zhang, Ping Yuan, Jiabao Chen	Parametric Study of Soot Particle Deposition and Heat Transfer Properties of Exhaust Heat Exchange Tube Bundles	305-1-E1-109
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room</b>			
Time	Paper ID	Author	Paper Title	Code

# Day 1: Sept. 2

13:30-13:45	95	Liwei Dong, Jintao Niu, Jing Li	Experimental study of condensation and drainage characteristics between vertical double surfaces with different wettability	305-1-E2-95
13:45-14:00	342	Xinkang Fu, Zhongwei Huang, Luhai Wang, Huaizhong Shi, Guodong Ji	Characteristics of axial percussive force of two-cutter PDC bit on carbonate rock	305-1-E2-342
14:00-14:15	102	Yan Gao, Tao Fang	Gram-scale synthesis of 1T-MoS <sub>2</sub> as excellent electrocatalytic catalyst for hydrogen evolution	305-1-E2-102
14:15-14:30	157	Sihan Hao	Experimental Study on Frost Characteristics of Variable Pitch Finned-Tube Heat Exchangers	305-1-E2-157
14:30-14:45	281	Hafiz Muhammad Adeel Hassan, Mohammad Taher Ghalandari, Alalea Kia	Investigating the thermal performance of novel permeable concrete pavements through numerical modelling	305-1-E2-281
14:45-15:00	332	Yitong Fu , Dong Liu , Haoyu He , Tian Song , Lin Ding	Influence of the Near-Wall Distance of a Single Cylinder on Flow-Induced Vibration and Heat Transfer Characteristics	305-1-E2-332
15:00-15:30	<b>Tea/Coffee Break</b> <b>Corridor, 3F</b>			
Time	Paper ID	Author	Paper Title	Code
15:30-15:45	327	Zhuantao He, Chunmei Wu, Wei Zhang, Rong Li You	Phase transitions and kinetics of vapour adsorption on mesoporous silica	305-1-E3-327
15:45-16:00	44	Zhenghui Hou, Chaofan Yang, Haijun Wang	Optimizing Supercritical Fluid Heat Exchangers: A Study on Entrance Effect and Multi-Stage Heating Approach	305-1-E3-44
16:00-16:15	388	Hou Junsheng, Hao Nanjing	Acoustic-enabled compact heat exchanger for two-phase cooling	305-1-E3-388
16:15-16:30	175	Kunteng Huang, Chen Ruihua, Weicong Xu, Shuai Deng, Li Zhao	Novel Graphical Expression Method of Thermodynamic Process Parameters: Methodology and Case Study	305-1-E3-175
16:30-16:45	258	Ruixin Ma, Zekun Jiang, Chenyi Qian, Binbin Yu, Junye Shi, Jiangping Chen	Thermal Management Performance Analysis of Combined Immersion Cooling and Water-cooled Plate Solutions in Large-scale Battery Pack	305-1-E3-258
16:45-17:00	280	Alalea Kia, Hafiz Muhammad Adeel Hassan	A parametric study to investigate the effect of pore size and number on the thermal energy storage potential of a novel permeable concrete pavement	305-1-E3-280
18:00-21:00	<b>Banquet</b> <b>Venue: International Conference Room</b>			
<b>Session Room: 306</b>				
<b>Track 2 Clean Energy Conversion Technologies</b>				
Time	Paper ID	Author	Paper Title	Code
11:00-11:15	144	Yakun Huang, Pengfei Zhu, Zhen Wu, Zaoxiao Zhang	Quantifying SOFC anode degradation performance at mesoscale	306-1-F1-144
11:15-11:30	51	Yang Lv, Shangsi, Feng, Lan Li, Qiuyu Liu, Jing Luo, Zhe Kang	Effect of Passive Pre-chamber and Direct Water Injection on Performance and Efficiency Improvement within a Gasoline Engine	306-1-F1-51
11:30-11:45	140	Mingyu Lou, Rui Lin	Investigation of the proton exchange membrane fuel cell performances by optimization of the hot-pressing process for membrane electrode assembly fabrication	306-1-F1-140
11:45-12:00	141	Kai Lu, Rui Lin	Effect on the binder morphology on stochastic reconstruction of gas diffusion layer in PEMFC	306-1-F1-141
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room</b>			
<b>Session Room: 306</b>				
<b>Track 2 Clean Energy Conversion Technologies</b>				
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	47	Jarek Milewski, Arkadiusz Szczesniak, Aliaksandr Martsinchyk, Olaf Dybinski, Katsiaryna Martsinchyk, Lukasz Szablowski	Feasibility study of a Molten Carbonate Fuel Cell as a CO <sub>2</sub> separator for various industrial exhaust emissions	306-1-F2-47
13:45-14:00	13	Mohamed Hamdy, Medhat A. Nemitallah	Numerical study of the effect of flow/mixture stratification on the combustion of a dual swirl oxymethane flames for gas turbine model	306-1-F2-13
14:00-14:15	368	Karpilov I, Papkov V, Pashchenko D	Ammonia-Fed Combined Cycle Plant with Chemically Recuperated Gas Turbine	306-1-F2-368

# Day 1: Sept. 2

14:15-14:30	125	Xiang Qiu, Jingyang Hua, Chenyi Qian, Jiakuan Wang, Binbin Yu, Junye Shi, Jiangping Chen"	Energy, exergy, economic and environmental (4E) assessment of vapor compression refrigeration cycle system based on small-scale, oil-free gas-bearing centrifugal compressors	306-1-F2-125
14:30-14:45	183	Jingjing Wang, Yuanwu Xu, Chenyang Hu, Zhonghua Deng, Xiaowei Fu, Xi Li	Investigation of SOFC Afterburner Stability by Image Processing Method	306-1-F2-183
14:45-15:00	122	Ziyang Wang, Masahiro Mae, Ryuji Matsuhashi	Pilot study on a low-energy wearable cooler based on a novel water-electricity hybrid energy system	306-1-F2-122
15:00-15:30	<b>Tea/Coffee Break</b> <b>Corridor, 3F</b>			
Time	Paper ID	Author	Paper Title	Code
15:30-15:45	440	Haonan Xie, Hui Sun, Dongdong Zhang, Shen Yuong Wong, Hui Hwang Goh	The Integration of Supercritical and Reheating Rankine Cycles in Advanced Thermal Energy Systems for Extreme Weather Adaptation	306-1-F3-440
15:45-16:00	414	Yange Yang, Yan Xiao, Zhenpu Shi, Hongyun Yue, Yanhong Yin, Shuting Yang	Bridge the duty and accelerated degradation of proton exchange membrane fuel cells gas diffusion layer	306-1-F3-414
16:00-16:15	76	Guoyin Yu, Yuting Zhuo, Shuyue Li, Yansong Shen	Collaborative Modelling of Gas-Solid Reacting Flow in a Fuel Reactor Equipped with Process Controllers in Chemical Looping Combustion/Conversion	306-1-F3-76
16:15-16:30	212	Xianyu Zeng, Hua Tian, Qiyao Zuo, Ligeng Li, Gequn Shu"	Reducing parameter fluctuation of a CO2 transcritical power cycle via double split ratio control	306-1-F3-212
16:30-16:45	229	Shunmin Zhu	A preliminary experimental study on a free-piston engine generator prototype	306-1-F3-229
16:45-17:00	190	Yecheng Song, Shilong Li, Shijie Bai, Minglei Wang, Kun Wang	HyChem Modeling of Polycyclic Aromatic Hydrocarbon (PAH) Kinetics in High Energy Density Fuel JP-10	306-1-F3-190
18:00-21:00	<b>Banquet</b> <b>Venue: International Conference Room</b>			
<b>Session Room: 307</b>				
<b>Track 5 Mitigation Technologies</b>				
Time	Paper ID	Author	Paper Title	Code
11:00-11:15	115	Lufei Bi, Jing Li, Fuhao Guo, Shuyi Zhou	Characteristics and Key Controlling Factors of Impure CO2 Huff-n-Puff and Storage in Shale Oil Reservoirs with Complex Fracture Networks	307-1-G1-115
11:15-11:30	21	Peizhai Cheng, Pingchuan Dong, Youheng Zhang	Surface Gravity Response of CO2 Storage in the Johansen Deep Saline Aquifer	307-1-G1-21
11:30-11:45	90	Ying Dai, Biying Yu	Industrial risks assessment for the large-scale development of electric arc furnace steelmaking technology.	307-1-G1-90
11:45-12:00	210	Rajat Dehury, Jitendra S. Sangwai	Pore-Scale Heterogeneity and Salinity Impacts on CO2 Storage in Deep Saline Aquifers: A Microfluidic and Computational Investigation	307-1-G1-210
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room</b>			
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	409	Jing-Chun Feng, Xiaonan Wu	Impact of Microplastics on the Gene Abundance of ANME-1 Methane Metabolism	307-1-G2-409
13:45-14:00	91	Jiahao Fu, Biying Yu	Policy simulation for driving the diffusion of CCS technology in the cement industry	307-1-G2-91
14:00-14:15	173	Zhixin Huang, Kunteng Huang, Jiaqi Zhang, Ruikai Zhao, Shuai Deng	Active Temperature Control Strategy in Adsorption-based Carbon Capture Process for Minimum Exergy Loss	307-1-G2-173
14:15-14:30	92	Dingyi Jiang, Shouzhuang Li, Mika Järvinen	Optimizing Sorbent Flow and Parameters in Calcium Looping Project integrated with CaO reactivation	307-1-G2-92
14:30-14:45	278	Fanbei Kong, Baisheng Nie	Modification engineering of palladium-platinum based catalysts for lean methane combustion	307-1-G2-278
14:45-15:00	195	Yogendra Kumar, Jitendra Sangwai	From Lab to Industrial Scale: Nano-Enhanced Formulations for Cost-Effective and efficient Carbon Capture	307-1-G2-195
15:00-15:30	<b>Tea/Coffee Break</b> <b>Corridor, 3F</b>			
Time	Paper ID	Author	Paper Title	Code
15:30-15:45	121	Zhongwei Li; Xingyu Yang; Qiang Song	Study on the desorption characteristics and regeneration performance of activated carbon for the co-adsorption of SO2 and NO	307-1-G3-121



# Day 1: Sept. 2

15:45-16:00	341	You Li, Weisheng Zhou	Scenario analysis for Energy Transition integrating Global and Local Perspectives	307-1-G3-341
16:00-16:15	66	Haifan Liao, Zhicheng Liang, Hongfei Hu, Haijun Wang	Utilizing Transfer Learning for Enhanced Prediction of Supercritical CO <sub>2</sub> Critical Flows	307-1-G3-66
16:15-16:30	4	Xin Meng, Qiang Li, Xuemei Chen	A Hierarchically Designed Superhydrophobic SiO <sub>2</sub> /PVDF-HFP Nanofibrous Membrane for All-day Radiative Cooling	307-1-G3-4
16:30-16:45	118	Matthias Sadlowski	Techno-Economic Evaluation of Different Scenarios for Carbon Capture and Utilization Concepts for Steel Mill Off-Gases	307-1-G3-118
16:45-17:00	179	Tao Song	Flue Gas-Assisted Steam Flooding in Heavy Oil Reservoirs: Experimental Study and Numerical Simulation	307-1-G3-179
18:00-21:00	<b>Banquet</b> <b>Venue: International Conference Room</b>			



# Day 2: Sept. 3

9:00-09:30	<p align="center"><b>Keynote 3</b></p> <p align="center"><b>Development of solar photovoltaic vacuum glass insulation layer of buildings</b></p> <p align="center"><b>Prof. Hongxing Yang</b></p> <p align="center"><b>Venue: International Conference Room</b></p>			
09:30-10:00	<p align="center"><b>Keynote 4</b></p> <p align="center"><b>The Cost Saving, Climate, and Health Effects of Global Solar PV Supply Chains</b></p> <p align="center"><b>Dr. Gang He</b></p> <p align="center"><b>Venue: International Conference Room</b></p>			
10:00-10:30	<p align="center"><b>Tea/Coffee Break</b></p> <p align="center"><b>Corridor, 4F</b></p>			
<p align="center"><b>Session Room: 302A</b></p> <p align="center"><b>Track 5 Mitigation Technologies</b></p>				
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	188	Sun Yu 1,2, Li Yiqiang 1,2*, Qi Huan1,2, Cao Jinxin1,2, Tang Xuechen1,2	Synergistic mechanism analysis of CO <sub>2</sub> -gravity displacement based on microfluidic and NMR experiments	302A-2-A1-188
10:45-11:00	181	Zuozhou Tang, Qiang Song	Concentration of Sulfuric Acid-Water Binary Condensation Film on Flue Gas Heat Exchange Tubes	302A-2-A1-181
11:00-11:15	203	Shengyan Wang, Zichu Wang, Yaowei Huang, Shuai Deng, Meng Lin	Optimizing Hydroxide-Functionalized Carbon Dioxide Adsorbents: Impact of Pore Structure on Adsorption Performance	302A-2-A1-203
11:15-11:30	356	Xiaowen Wang, Fei Ma, Haiqiao Wei	H-Assisted CO <sub>2</sub> Dissociation on PdPt(4-n)/In <sub>2</sub> O <sub>3</sub> Catalysts: A Density Functional Theory Study	302A-2-A1-356
11:30-11:45	200	Huifeng Fan, Yuanhao Mao, Sayd Sultan, Xiaomei Wu*, Yunsong Yu, Zaoxiao Zhang*	Identifying thermal effects in an innovative renewable electricity and low-grade waste heat assisted electrochemically mediated amine regeneration CO <sub>2</sub> capture system	302A-2-A1-200
11:45-12:00	34	Zepeng Yang, Xinwei Liao, Peng Dong, Lingfeng Zhang	Rapid Prediction of CO <sub>2</sub> Flooding Attribute Distribution in 3D Heterogeneous Reservoirs Using Fourier Neural Operator	302A-2-A1-34
12:00-13:30	<p align="center"><b>Lunch Break</b></p> <p align="center"><b>Venue: International Conference Room and 301</b></p>			
14:00-15:00	<p align="center"><b>Panel 1 (Venue: 301)</b></p> <p align="center"><b>Integrated Simulation System using Urban Digital Twin</b></p> <p align="center"><b>for Smart Energy Management</b></p> <p align="center"><b>Prof. Yoshiki Yamagata</b></p>			
<p align="center"><b>Session Room: 302A</b></p> <p align="center"><b>Track 1 Renewable Energy</b></p>				
13:30-13:45	252	Linux Farungsang, Alvin Christopher Galang Varquez, Koji TOKIMATSU	Implementation of a GeoAI Model to Detect Ground-mounted Photovoltaic Power Stations in Thailand	302A-2-A2-252
13:45-14:00	82	Xiangjiao Gong, Guidong Yang *	Self-Assembly of Keggin-Type Polyoxometalates with Tetrabutylphosphonium Tetrachloroferrate Ionic Liquid for Enhanced Photocatalytic Nitrogen Fixation	302A-2-A2-82
14:00-14:15	29	Xiaoman He	Perfluorocarbon nanoemulsions as hydrogen carriers to promote the conversion of CO <sub>2</sub> to acetate in microbial electrosynthesis	302A-2-A2-29
14:15-14:30	171	Shuntao Hu	Performance Analysis and Optimization of Hybrid Geothermal and Solar Power Generation Systems	302A-2-A2-171
14:30-14:45	358	Yitao Huang, Chu Wang, Xifeng Zhu, LIANG WANG	Optimizing the gasification characteristics of bio-oil distillation sludge by obtaining co-pyrolysis char with walnut shells: the correlation between carbonaceous structure parameters and gasification indices	302A-2-A2-358

# Day 2: Sept. 3

14:45-15:00	128	Javad Jeddizahed, Tom Hughes, Paul Webley	Investigation of a Novel Net-Zero Polygeneration System for Power, Hydrogen and Ammonia Production	302A-2-A2-128
15:00-15:30	<p style="text-align: center;"><b>Tea/Coffee break</b> Venue: Corridor, 3F</p>			
15:30-16:30	<p style="text-align: center;"><b>Panel 2 (Venue: 301)</b>   <b>Research on Human-Source-Load-Carbon Synergy Optimization Technology for Carbon-Neutral City Energy System Driven by Population Trajectory Big Data</b>   <b>Prof. Jie Yan</b></p>			
15:30-15:45	132	Yanan Liao; Hongguang Zhu; Fulu Lu; Qi Wu	A novel viscosity clustering model for anaerobic fermentation materials and its application for mixing process	302A-2-A3-132
15:45-16:00	75	Sheng-Ting Lin, Wei-Hsin Chen	Thermoelectric generators for waste heat recovery in train braking systems: Performance optimization of heat sink installation using the Taguchi method	302A-2-A3-75
16:00-16:15	373	Jiali Liu; Xinli Lu; Wei Zhang	A Study on Closed-loop Heat Extraction and Power Generation Performance of Hot Dry Rock in Gonghe Basin	302A-2-A3-373
16:15-16:30	386	Dongxi Liu, Haiyan Lei, Chuanshan Dai	Exploring the Maximum Heat Extraction Potential of Super Long Gravity Heat Pipes in Hot Dry Rock Geothermal Reservoirs	302A-2-A3-386
16:30-16:45	348	Qianyu Ma, Haiyun Wang, Xiaochen Su, Jiahui Wu	Short-Term Combination Prediction of Wind Power Considering Meteorological Complexity and Wind Power Volatility	302A-2-A3-348
16:45-17:00	124	Xin Liu, Haiyan Lei, Fuyan Zhao, Dongxi Liu, Shuhuan CHEN, Chuanshan Dai	A critical evaluation on the mathematical models in simulating deep borehole heat exchangers	302A-2-A3-124
<b>Session Room: 302B 5</b>				
<b>Track 5 Mitigation Technologies</b>				
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	137	Xingyu Yang	Study on the adsorption of SO <sub>2</sub> by activated carbon in the low flue gas temperature range	302B-2-B1-137
10:45-11:00	90	Ying Dai, Biying Yu	Industrial risks assessment for the large-scale development of electric arc furnace steelmaking technology	302B-2-B1-90
11:00-11:15	193	Yuanhao Mao, Huifeng Fan, Sayd Sultan, Yunsong Yu, Xiaomei Wu, Zaoxiao Zhang	The effect of gas-liquid behavior on the energy consumption of electrochemical-mediated amine regeneration CO <sub>2</sub> capture process	302B-2-B1-193
11:15-11:30	177	Jiaqi Zhang, Shuai Deng, Ruikai Zhao	Design and numerical analysis of adsorption bed geometry in temperature swing adsorption process for CO <sub>2</sub> capture using waste plastic-based activated carbon	302B-2-B1-177
11:30-11:45	300	Beichen Zhao, Diwu Pengxiang, Yuedong Yao, Chaoxiang Wang, Zheyu Xiao, Hanze Liu, Yafei Wei	Time prediction model of CO <sub>2</sub> channeling for intelligent early warning based on a transfer learning framework	302B-2-B1-300
11:45-12:00	116	Haiwei Zuo, Shenglai Yang	Study on the Effect of CO <sub>2</sub> -Brine-Rock Interactions on Reservoirs during the CO <sub>2</sub> Geological Storage	302B-2-B1-116
12:00-13:30	<p style="text-align: center;"><b>Lunch Break</b> Venue: International Conference Room and 301</p>			
<b>Session Room: 302B</b>				
<b>Track 1 Renewable Energy</b>				
13:30-13:45	73	Ratu Keni Atika, Takuro Kobashi	Adoption of PV+EV Integration for Deep Decarbonization in Bali, Indonesia	302B-2-B2-73
13:45-14:00	135	Longlong Lei, Hang Yuan, Hongguang Zhu*, Fanghui Pan, Fulu Lu	A preliminary study of C@Fe <sub>3</sub> O <sub>4</sub> for gas separation of CH <sub>4</sub> and CO <sub>2</sub>	302B-2-B2-135
14:00-14:15	346	Sinan Li, Yuning Chen, Keqing Duan, Zhenpeng Li, Tao Ma	Techno-economic evaluation of a novel building integrated colored photovoltaic system in Shanghai	302B-2-B2-346
14:15-14:30	351	Jiaze Li, Zhiling Guo, Hongjun Tan, Jinyue Yan	Enhancing Multimodal Solar Energy Data Resolution via Deep Generative Models for Accurate PV Potential Estimation	302B-2-B2-351
14:30-14:45	390	Yongqiang Li, Yongliang Zhao, Ming Liu, Junjie Yan	Thermodynamic analysis and optimization of quality-improving heat pumps coupled with organic Rankine cycle for low-temperature geothermal power generation	302B-2-B2-390
14:45-15:00	438	Zhiwei Liu, Jinli Zhao, Yunpeng Fei, Chiyuan Ma, Dingrui Zhou, Peng Li	Lightweight Probability Prediction and Local Control for Photovoltaic Integrated with Energy Storage in Active Distribution Networks	302B-2-B2-438

# Day 2: Sept. 3

<b>Tea/Coffee break</b> <b>Venue: Corridor, 3F</b>				
15:00-15:30				
15:30-15:45	80	Nguyen Thi Quynh Trang Takuro Kobashi	Stranded asset from city level energy transition in Hanoi, Vietnam	302B-2-B3-80
15:45-16:00	85	Dimitri Pinel Dana Reulein Christian Andresen	Impact of the offshore wind development plans in the North Sea on the decarbonization of the European Energy System	302B-2-B3-85
16:00-16:15	119	Dana Reulein, Carmen Li, Dimitri Pinel, Masood Parvania, Hossein Farahmand, Christian Andresen	Accuracy vs. Complexity: The Aggregation of Wind Time-Series Data in Capacity Expansion Models	302B-2-B3-119
16:15-16:30	123	Mohammadmahdi Rezaei, Younes Noorollahi	Integrative Fuzzy Approach to Optimal Wind Farm Identification	302B-2-B3-123
16:30-16:45	232	Dibyendu Roy, KV Shivaprasad, Jonathan Heslop, Abdullah Malik, Yaodong Wang, Anthony Paul Roskilly	Design and analysis of a biomass gasification facility integrated with methanol production system	302B-2-B3-232
16:45-17:00	226	Tianqi Ruan, Wujun Wang, Bjorn Laumert	Potential of wall-mounted solar panel in Swedish contexts	302B-2-B3-226
<b>Session Room: 303</b> <b>Track 3 Intelligent &amp; Flexible System</b>				
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	178	Zihao Ni, Yi Zhang	Modeling and multi-scenario simulation of a DC-based distributed flexible energy control system in a renewable building	303-2-C1-178
10:45-11:00	107	Baoyu Zhu, Shaojun Ren, Qihang Weng, Yijia Zhang, Fengqi Si	Fault diagnosis for industrial gas turbines based on multi-fidelity data	303-2-C1-107
11:00-11:15	83	Prof. Amir Safari	Realizing Smart Energy Sharing- realSES© Platform	303-2-C1-83
11:15-11:30	49	Sally Shahzad, Hom Bahadur Rijal	Will be uploaded later.	303-2-C1-49
11:30-11:45	67	Nadia Shams Aleena Ahmad Dr. Naveed Arshad	Assessing the Impact of Climate Change on Long Term Load Forecasting for Electric Utilities	303-2-C1-67
11:45-12:00	337	Rahul Kumar Sharma Prof. Dibakar Rakshit Prof. Man Pun Wan	Innovative HVAC Solutions: Impact of Nanoparticles and Fins on PCM incorporated system for Peak Load Management	303-2-C1-337
<b>Lunch Break</b> <b>Venue: International Conference Room and 301</b>				
12:00-13:30				
13:30-13:45	107	Baoyu Zhu, Shaojun Ren, Qihang Weng, Yijia Zhang, Fengqi Si	Fault diagnosis for industrial gas turbines based on multi-fidelity data	303-2-C2-107
13:45-14:00	301	Rifat Al Mamun Rudro, Afroza Nahar, Md. Faruk Abdullah Al, Sohan	SPXAI: Solar Panel Power Production with Explainable AI Technology	303-2-C2-301
14:00-14:15	334	Zeyu Tian, Zhaoyang Sha, Zhu Wang, Daotong Chong, Junjie Yan	Research on coordinated control strategy of a virtual power plant in response to random variations in renewable energy sources	303-2-C2-334
14:15-14:30	254	Ryuta Tsurumi, Takahiro Yoshida	The impact of people flow on summer energy consumption in a Tokyo office building using a state space model	303-2-C2-254
14:30-14:45	272	Jonathan Vieth, Jan Westphal, Arne Speerforck	A GIS-based Co-Planning Approach for District Heating Networks	303-2-C2-272
14:45-15:00	437	Zhicheng Zhang, Hao Yu, Yuntao Bu, Zijian Lei, Yuxin Zheng, Chengshan Wang	Edge Computing-Based Distributed Power Restoration for Active Distribution Networks Considering Switching Sequence	303-2-C2-437
<b>Tea/Coffee break</b> <b>Venue: Corridor, 3F</b>				
15:00-15:30				
15:30-15:45	345	Liqun Xie, Chaoyang Wang, Zefeng Liu, Ming Liu, Junjie Yan	Optimization of the pulverized system of the coal-fired power plant by revising control strategy	303-2-C3-345
15:45-16:00	107	Baoyu Zhu, Shaojun Ren, Qihang Weng, Yijia Zhang, Fengqi Si	Fault diagnosis for industrial gas turbines based on multi-fidelity data	303-2-C3-107
16:00-16:15	218	WU Jialin, GAO Jiajing, ZHANG Yi	A method for day-ahead prediction of household multi-appliance usage trajectory based on Bayesian neural network	303-2-C3-218

# Day 2: Sept. 3

16:15-16:30	394	Ziwei Xiao	Development of a Data-Driven Methodology for Automated Generation Models Based on Different Tasks	303-2-C3-394
16:30-16:45	345	Liqun Xie, Chaoyang Wang, Zefeng Liu, Ming Liu, Junjie Yan	Optimization of the pulverized system of the coal-fired power plant by revising control strategy	303-2-C3-345
16:45-17:00	163	XinJiang Yan, WenKan Sheng, Liang Xue, Yichen Wang, Jifei Yu, Hailong Zhang	Research on the water control strategy of intelligent sliding sleeves in the horizontal well	304-2-C3-163
<b>Session Room: 304</b>				
<b>Track 4 Energy Management, Policy, Economics and Sustainability</b>				
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	130	Fulu Lu , Chuhan Pan, Hongguang Zhu *, Qi Wu, Yanan Liao	Preliminary study of a new CO2 resource utilization system that combines waste heat recovery and cold energy utilization	304-2-D1-130
10:45-11:00	384	Baiqing Ye, Yu Qian, Qinlong Ren, Pengfei Wang	Electrodialysis seawater desalination enhanced by utilizing waste heat of nuclear power thermal discharge	304-2-D1-348
11:00-11:15	182	Haotian Shi, Yingru Zhao	A Method for Estimation of the Energy Consumption of AI Language Models	304-2-D1-182
11:15-11:30	370	Weize Song; Zheng Li; Xiu Yang	Typology of low-carbon development pathways under future uncertainty	304-2-D1-370
11:30-11:45	148	Koji TOKIMATSU, Rieko YASUOKA	The water-energy-mineral-land nexus: interlinked global models of LCIA and IAM applicable to this century	304-2-D1-148
11:45-12:00	205	Hideo Takahashi, Masami Toyokawa, Yoshiyuki Kimura, Yoshiki Yamagata	Achieving Decarbonization and Employee Well-Being in Urban Business Districts: The Nihonbashi Initiative	304-2-D1-205
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room and 301</b>			
13:30-13:45	27	Shigetoshi Tokuoka Yoshiaki Ookami Yoshiki Yamagata	Optimal Power Source of Advanced Air Mobility for Passenger Transport Use Cases	304-2-D2-27
13:45-14:00	205	Hideo Takahashi, Masami Toyokawa, Yoshiyuki Kimura, Yoshiki Yamagata	Achieving Decarbonization and Employee Well-Being in Urban Business Districts: The Nihonbashi Initiative	304-2-D2-205
14:00-14:15	106	Lloyd Corcoran, Carlos E. Ugalde-Loo, Louise King, Christina Demski, Richard Lowes	Analysing the Effects of Common Passive Cooling Strategies in UK Homes	304-2-D2-106
14:15-14:30	273	Nikhil Thejesh Venkataramana, Venkatasailanathan Ramadesigan, Tejal Kanitkar, Rangan Banerjee.	Optimal Power Dispatch with Renewable Energy Integration Using a MILP Model: A Case Study of Western India	304-2-D2-273
14:30-14:45	450	Zhihao Wan, Wandong Zheng	Effects of Farmers' Willingness to Regulate Heat Pumps on Heating Energy Consumption in Northern China	304-2-D2-450
14:45-15:00	207	Huaxia YAN, Xiaona Ma, Yi CHEN, Qihua TAO	Performance enhancement of an air-cooled battery thermal management system with a Wet Pad	304-2-D2-207
15:00-15:30	<b>Tea/Coffee break</b> <b>Venue: Corridor, 3F</b>			
15:30-15:45	56	Shinji Yamamura, Lidia Vitanova , Yoshiki Yamagata , Doan Quang-Van	Development of Comprehensive Analysis of Area CO <sub>2</sub> and Urban Climate Management System for Carbon Neutral and Smartization in Urban Planning	304-2-D3-56
15:45-16:00	269	Shuai Zhang, Dan Wang	Method for Calculating Maximum Carbon Emission Capability of Integrated Energy Systems	304-2-D3-269
16:00-16:15	384	Baiqing Ye, Yu Qian, Qinlong Ren, Pengfei Wang	Electrodialysis seawater desalination enhanced by utilizing waste heat of nuclear power thermal discharge	304-2-D3-384
16:15-16:30	482	Jingyuan Shen, Xi Wang, Abdulrahman H Alorabi, Takahiro Yoshida, Akito Murayama, Perry Yang	Systems-level Methodology for Optimizing Urban Infrastructure Energy Resilience	304-2-D3-482
16:30-16:45	77	Qing Yu, Jian Yuan, Haoran Zhang	Towards energy self-sufficient in megacities: solar energy belts integrating photovoltaic and electric vehicles	304-2-D3-77

# Day 2: Sept. 3

16:45-17:00	443	Yang YU Kui SHAN Shengwei WANG (Corresponding Author)	Global Sensitivity Analysis of Key Parameters for Data Center Power and Energy Systems Considering Reliability	304-2-D3-443
<b>Session Room: 305</b>				
<b>Track5 Energy Science</b>				
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	105	Rui Xue, Haiyan Lei*, Chuanshan Dai, Fei Ma, Qilong Wang, Qianhan Chen	Numerical Simulation of the Temperature Field of Borehole Heat Exchanger Arrays Under Different Arrangement Configurations	305-2-E1-105
10:45-11:00	331	LI Qihang, LI Yiqiang, YAN Zhiqian, WANG Wenxu, CAO Jinxin, ZHANG Yaqian, TANG Xuechen, SONG Tao, LIU Zheyu	The effect of transitioning from water flooding to reduced-oxygen air flooding on oil recovery in low-permeability oil reservoirs	305-2-E1-331
11:00-11:15	211	Xueling Liu, Yunkai Leng, Jia Hao, Jiansheng Wang	Research on the Mechanism and Effect of External Electric Field on Heat Flow Control	305-2-E1-211
11:15-11:30	127	Chuan-Long Ge, Hua-Yang Liu, You-Rong Li	Temperature-jump during Ethanol Evaporation in Cylindrical Pool Heated from Bottom at Low Pressure	305-2-E1-127
11:30-11:45	169	Chiyuan Ma, Chunlu Zhang	Performance Variation of Enhanced Vapor Injection System	305-2-E1-169
11:45-12:00	258	Ruixin Ma; Zekun Jiang; Chenyi Qian; Binbin Yu; Junye Shi; Jiangping Chen	Thermal Management Performance Analysis of Combined Immersion Cooling and Water-cooled Plate Solutions in Large-scale Battery Pack	305-2-E1-258
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room and 301</b>			
13:30-13:45	133	Chenyi Qian, Jiakuan Wang, Xiang Qiu, Ruixin Ma, Binbin Yu, Jiangping Chen	Optimization Design and Heat Transfer investigation of TPMS Compact Heat Exchanger Based on Field Synergy Principle	305-2-E2-133
13:45-14:00	54	Xiaohui Yu*, Qingqin Kong, Sensen Jiang, Hongna Qiao	Numerical study of two-phase flow during evaporation in a microchannel coil evaporator for refrigeration systems	305-2-E2-54
14:00-14:15	1	Yuanzhi Qin, Hanwen Zhang, Le Yu, Jingru Tian, Zhen Wei, Shishi Fei, Xingwen Zhong, Qiyu Huang.	Study on heat transfer characteristics of high water cut crude oil in FRP pipeline	305-2-E2-1
14:15-14:30	138	Yuxi Ren	Mo5+ Sites in Molybdenum Oxide by Lattice stress for Efficient Ammonia Synthesis	305-2-E2-138
14:30-14:45	97	Xuechen Tang, Zihao Li, Jinxin Cao, Xinji Du, Yaqian Zhang, Tao Song, Qihang Li, Yiqiang Li	Visualization Experimental Investigation on Sanding Characteristics and Oil Production Capacity of Unconsolidated Sandstone Reservoirs	305-2-E2-97
14:45-15:00	9	Zhengrong Li, Ruiyang Tao	A thermodynamic analysis of the staged adsorption/desorption with Type-V isotherms	305-2-E2-9
15:00-15:30	<b>Tea/Coffee break</b> <b>Venue: Corridor, 3F</b>			
15:30-16:30	<b>Panel 2 (Venue: 301)</b> <b>Prof. Jie Yan</b>			
15:30-15:45	319	Tareen, M. S. K., Badache, M., & Sasmito, A. P.	Transient behavior of a two-phase-closed geothermal thermosyphon	305-2-E3-319
15:45-16:00	223	Sagar Vashisht, Dibakar Rakshit	Comparative analysis of passive cooling strategies for enhanced li-ion cell thermal management	305-2-E3-223
16:00-16:15	153	Hongxia Wang, Xiaoli Li, Xiaomei Wu, Zhen Wu, Yunsong Yu, Zaoxiao Zhang	Waste heat recovery of intra-plant heat integration with energy complementary pattern among the calcium carbide industry subsystems	305-2-E3-153
16:15-16:30	133	Chenyi Qian, Jiakuan Wang, Xiang Qiu, Ruixin Ma, Binbin Yu, Jiangping Chen	Optimization Design and Heat Transfer investigation of TPMS Compact Heat Exchanger Based on Field Synergy Principle	305-2-E3-133
16:30-16:45	158	Zhiyu Wang, Jiahao Cheng, Chunlu Zhang	A new design framework for air-cooled condensing unit	305-2-E3-158

# Day 2: Sept. 3

16:45-17:00	155	Wenjng Xing, Zhengrong Li, Heyu Wang	The impact of layered surface of 3D printed structure on heat transfer process	304-2-E3-155
<b>Session Room: 306</b>				
<b>Track 7 Energy Storage</b>				
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	228	Behrooz Elahi, Mohammad Mehrali	Enhancing Heat Storage Efficiency: Evaluating Carnallite's Stability and Performance in Thermochemical Applications	306-2-F1-228
10:45-11:00	63	Junfei Guo, Ze Li, Yuan Xie, Xiaohu Yang	Melting performance for solid-liquid phase change under continuous ultrasonic with different power	306-2-F1-63
11:00-11:15	42	Dandan Han, Chen Lin	Phase field simulation of liquid lithium batteries: Formation and accumulation of dead lithium during cycling and its impact on battery performance	306-2-F1-42
11:15-11:30	231	Susmita Koley, Zhiwei Ma	Evaluating design criteria of silica gel based open bed reactor to meet domestic heating demand	306-2-F1-231
11:30-11:45	84	Sitong Li, Zhuqing Li, Yu Chen, Hua Tian, Gequn Shu	Numerical Analysis on Desorption Process of K <sub>2</sub> CO <sub>3</sub> for Thermochemical Heat Storage	306-2-F1-84
11:45-12:00	129	Jinyu Li; Junlei Wang; Shilong Li; Guohui Chen; Kun Wang	One-Step Preparation of Multi-element Doped High Voltage Long Cycle Cobalt-Free Nickel-Rich Cathode Material by Flame-Assisted Spray Pyrolysis	306-2-F1-129
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room and 301</b>			
<b>Session Room: 306</b>				
<b>Track 8 Hydrogen Energy</b>				
13:30-13:45	259	Azaria Haykal Ahmad, Muhammad Aziz	Thermodynamic Analysis of Decarbonization of Natural Gas Combine Cycle Through Integrated Biomass Direct Chemical Looping Hydrogen Generation and Ammonia Synthesis	306-2-F2-259
13:45-14:00	15	Ziwei Bai, Wenzhuo Yao, Gendi Li, Jie Song, Guizhi Xu, Yuting Zhu, Jianguo Liu, Zhenlan Dou, Chunyan Zhang	The effect of channel height on the performance of PEM electrolyzer	306-2-F2-15
14:00-14:15	306	Francesco Battistella, Luca Mastropasqua, Alessandro Donazzi, Gianluca Valenti	Numerical analysis of NO <sub>x</sub> production within a hydrogen catalytic combustor	306-2-F2-306
14:15-14:30	71	Javiera Cepeda Kato Takuro Kobashi	Green Hydrogen and Solar EV City Concept in Santiago-Chile	306-2-F2-71
14:30-14:45	270	Huijin Guo, Julong Zhou, Jinghui Zhao, Tiancai Ma, Ruitao Li	Degradation Prediction Model based on CEEMDAN-LSTM Hybrid Method Considering Reversible Degradation of Proton Exchange Membrane Fuel Cell	306-2-F2-270
14:45-15:00	400	Zheng Hongxiang	Modeling of high-temperature PEM fuel cell incorporating the combined effects of assembly pressure and gas diffusion layer thickness	306-2-F2-400
15:00-15:30	<b>Tea/Coffee break</b> <b>Venue: Corridor, 3F</b>			
15:30-15:45	365	Tiancai Ma, Beiming Huang, Chongjiu Li, Ziheng Gu	Modeling and Analysis of the Hydrogen Circulation Structure of PEMFC System	306-2-F3-365
15:45-16:00	204	Xiang Kang, Zekun Liu, Yuan Lv, Yun Li	Energy Consumption Analysis of Ionic Liquid Compressors via Lumped Parameter Model	306-2-F3-204
16:00-16:15	237	Luthfan Adhy Lesmana, Muhammad Aziz	Optimization of Octet-Reinforced Metal Hydride Canister for Hydrogen Storage	306-2-F3-237
16:15-16:30	455	Pengcheng Zhu, Masahiro Mae, Ryuji Matsuhashi	Optimal Dispatching for Hybrid Hydrogen Production System Considering Hydrogen Demand	306-2-F3-204
16:30-16:45	62	Pin-Chun Liang, Guo-Jun Yu, Wei-Hsin Chen	Using the Taguchi Method and life Cycle Analysis to design optimal AEM operating parameters	306-2-F3-62
16:45-17:00	20	Ruoxuan Zhao, Qiming Yang, Gengfeng Li*, Minghao Li, Chenlin Ji, Dafu Liu, Ziwen Xu, Jiaju Shi, Zhaohong Bie	System Dynamics Analysis of Interaction Behaviors and Pricing Mechanisms in Grid-Hydrogen-Vehicle System	306-2-F3-20
<b>Session Room: 307</b>				
<b>Track 8 Hydrogen Energy</b>				
Time	Paper ID	Author	Paper Title	CodG
10:30-10:45	149	Yuanji Li, Xiaohu Yang	Coupled response surface analysis and computational fluid optimization for structure of Nickel foam heat storage tank	307-2-G1-149
10:45-11:00	336	Chang Liu, Chaoyang Wang, Ming Liu, Junjie Yan	Dynamic simulation of PTG energy storage system based on solid oxide electrolysis cell	307-2-G1-336



# Day 2: Sept. 3

11:00-11:15	79	Lv Xinrong	Facile construction of ZnNi <sub>2</sub> O <sub>4</sub> materials as high-performance anode for lithium-ion capacitors	307-2-G1-79
11:15-11:30	89	Manjunath L Nilugal, Venkatasailanathan, Ramadesigan	A techno-economic assessment of sodium-ion pouch and coin cells for commercial applications	307-2-G1-89
11:30-11:45	69	Nan Qin, Liming Jin, Jim P. Zheng	Sustainable and high-energy pre-sodiation cathode using Na <sub>2</sub> C <sub>2</sub> O <sub>4</sub> and dry-processing method for sodium-ion batteries	307-2-G1-69
11:45-12:00	321	Ben Shang, Yilong He, Lei Wang, Zeyu Sun, Jianwei Shao, Constantina Lekakou, Jing Zhao, Youping Fan	Ageing-Aware Deep Reinforcement Learning for Adaptive Fast Charging of Li-ion Battery Considering Coupled Degradation mechanisms	307-2-G1-321
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room and 301</b>			
13:30-13:45	314	Delaram Salehzadeh, Johan E. ten Elshof, Mohammad Mehrli	Boosting Thermochemical Energy Storage in Porous Potassium Carbonate Granules with Graphene Nanoplatelets	307-2-G2-314
13:45-14:00	88	Guangliang Wang, Jun Zhao, Jing Wang, Lei Gu, Juan Song, Jintao Niu	Investigation on Collaborative Optimization Strategy based on PCM-Air Composite Cooling Battery Thermal Management System	307-2-G2-88
14:00-14:15	194	Bo Wang, Chen Ruihua, Weicong Xu, Shuai Deng, Li Zhao	A novel high-efficient integrated system combining thermally regenerative electrochemical cycle and flow battery	307-2-G2-194
14:15-14:30	192	Junlei Wang, Guohui Chen, Jinyu Li, Shilong Li, Kun Wang	Effects of Lithium Sources on the Preparation of Nickel-rich Cathode Materials for Lithium-ion Batteries by Flame-assisted Spray Pyrolysis	307-2-G2-192
14:30-14:45	343	Peng Wang, Chaoyang Wang, Ming Liu, Junjie Yan	Enhancing the frequency regulation performance of coal-fired power plants under deep peak shaving conditions by coupling external heat into the regenerative system	307-2-G2-343
14:45-15:00	86	Yujie Xie, Zhengrong Li, Han Zhu	Assessment of the potential of rooftop photovoltaic battery systems in industrial parks in Shanghai considering energy storage degradation	307-2-G2-86
15:00-15:30	<b>Tea/Coffee break</b> <b>Venue: Corridor, 3F</b>			
15:30-15:45	253	Yikun Yang, Zhen Wu, Xianchun Huang, Xiaodong Chen, Zaoxiao Zhang	Integrated property prediction and multi-objective optimization model of metal hydride material selection in thermal energy storage application	307-2-G3-253
15:45-16:00	31	Hongna Qiao, Xiaohui Yu	Design and selection of working fluid for Rankine-based Carnot battery based on the group contribution method	307-2-G3-31
16:00-16:15	421	Yunfei Zhang, Jun Shen, Jian Li, Mingzhe Yu, Xu Chen, Danyang Liu	Identifications of key thermodynamic parameters for Carnot battery based on SHAP model	307-2-G3-421
16:15-16:30	311	Chunyang Zhao, Xin Jin, Bugra Kayaalp, Chao Liu, Magnus Klintström, Frank Alan Hauer, Shi You, Chresten Træholt	Lab-field multi-energy platform: electrolyzer, redox flow battery, and lithium-ion battery energy storage system	307-2-G3-311
16:30-16:45	146	Wanfang Zhao, Jinqing Peng	Design of Air-conditioning System integrated with Chilled Water Storage for Demand-side Management	307-2-G3-146
16:45-17:00	199	Qinyue Zheng, Lanping Zhao, Zhigang Yang	Enhancing electric vehicle thermal management with water loop heat pump coupled phase change thermal storage	304-2-G3-199



# Day 3: Sept. 4

## Session Room: 302A

### Track 1 Renewable Energy

Time	Paper ID	Author	Paper Title	Code
09:00-09:15	288	Hao Xu	Investigation into steam explosion of biomass: effect of temperature on the structural evolution, pyrolysis behavior, and kinetics	302A-3-A1-288
09:15-09:30	46	Weicong Xu	Precise control of CO <sub>2</sub> electroreduction pathways over copper foil through regulating the microenvironment between morphology and crystal plane	302A-3-A1-46
09:30-09:45	136	Baorong Xu, Guidong Yang	Recognition of Optimum Doping on Cobalt-Incorporated ZnIn <sub>2</sub> S <sub>4</sub> Nanosheets for Boosting Photocatalytic Hydrogen Evolution	302A-3-A1-136
09:45-10:00	289	Pu Yang, M Ismail Bagus Setyawan, Yamsomphong Kanokwan, Fumitake Takahashi, Vinayak Gupta, Hao Xu	Effect of modified coal fly ash on pyrolysis of biomass for soil amendment	302A-3-A1-289

10:00-10:30

### Tea/Coffee Break Corridor, 3F

Time	Paper ID	Author	Paper Title	Code
10:30-10:45	36	Zhendong Zhang, Huichao Dai, Qing Zhang	Wind speed ensemble forecasting framework based on deep neural network and dropout mechanism	302A-3-A2-36
10:45-11:00	189	Li Zhang, Lei Wang	Wind Turbine Full Power Controller Model Based on Preset Time Control	302A-3-A2-189
11:00-11:15	376	Qiangzhi Zhang, Jinqing Peng, Yimo Luo	A novel power generation model of bifacial photovoltaic modules considering self-shading and mutual shading	302A-3-A2-376
11:15-11:30	185	Cheng Zhao, Lei Wang	Coordinated Optimization of Wind Turbine Mechanical Loads and Power with Model Predictive Strategy	302A-3-A2-185
11:30-11:45	317	Tekai Eddine Khalil Zidane, Sebastian Zainali, Silvia Ma Lu, Sultan Tekie, Mohammed Guezgouz, Pietro Elia Campana	Agrivoltaic systems modelling and key performance indicators	302A-3-A2-317
11:45-12:00	432	Liurong Liu	Economic and environmental benefit analysis for retrofitted biomass-coal co-firing power plant at a national level	302A-3-A2-432

12:00-13:30

### Lunch Break

Venue: International Conference Room and 301

## Session Room: 302B

### Track 1 Renewable Energy

Time	Paper ID	Author	Paper Title	Code
09:00-09:15	246	M Ismail Bagus Setyawan, Hao Xu, Pu Yang, Yamsomphong Kanokwan, Vinayak Gupta, Fumitake Takahashi	Uncertainty Analysis of Biomass Pyrolysis and Gasification for Syngas Production	302B-3-B1-246
09:15-09:30	37	Dishant Sharma and Rahul Goyal	Numerical Investigation of Deep Dynamic Stall on 2 Bladed H-Rotor VAWT using Scaled Resolved Turbulence Models	302B-3-B1-37
09:30-09:45	39	Wenchao Shi, Xiaochen Ma, Hongxing Yang	Towards carbon neutrality: A solar-powered natural cooling solution for data centers in hot and humid regions	302B-3-B1-39
09:45-10:00	285	Yutaro Shimada	An energy-saving performance of commercial-scale ground source heat pumps in Tokyo, Japan, based on dynamic simulation under future climate scenarios	302B-3-B1-285

10:00-10:30

### Tea/Coffee Break Corridor, 3F

10:30-10:45	8	Dessalegn Abera Waktole, Boru Jia, Wei Wang, Zhengxing Zuo, Hejia Wang	Enhancing the power output of a Thermoelectric Generator through Flexible Composite Substrates and by improving the Structural Design of a Heteromorphic Electrode	302B-3-B2-8
10:45-11:00	206	Ziheng Wang, Na Li, Zongli Xie	A Super-Crosslinked Lamellar Graphene Oxide Membrane for Efficient Alcohol Dehydration	302B-3-B2-206
11:00-11:15	94	Yazhe Wang, Hanming Yang, Nora Meling Eriksen, Viktorija Tomkute, Sophia Peters, Martin Walderhaug, Aekjuthon Phounglamcheik, Weihong Yang	Chemical and Toxicological Study of Different Phases of Bio-Oil	302B-3-B2-94

# Day 3: Sept. 4

11:15-11:30	375	Shuhao Wang	Assessment of solar irradiance based on sky image capturing and near-ground meteorology measurements	302B-3-B2-375
11:30-11:45	348	Haiyun Wang	Short-Term Combination Prediction of Wind Power Considering Meteorological Complexity and Wind Power Volatility	302B-3-B2-348
11:45-12:00	131	Qi Wu, Hongguang Zhu, Fanghui Pan, Fulu Lu, Yanan Liao	A composite electrode plate applied in microbial electrolytic cell for improvement of methanogenesis and microbial community	302B-3-B2-131
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room and 301</b>			
<b>Session Room: 303</b>				
<b>Track 3-Intelligent &amp; Flexible System</b>				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	345	Liqun Xie, Chaoyang Wang, Zefeng Liu, Ming Liu, Junjie Yan	Optimization of the pulverized system of the coal-fired power plant by revising control strategy	303-3-C1-345
09:15-09:30	326	Yao Yao, Wenchao Shi, Yongting Shen, Zhicheng Shen, Yukfan Wong, Hongxing Yang	Optimizing Energy Efficiency and Performance in AHUs: Study on Performance of EC Fan with Spiral Guide Vane	303-3-C1-326
09:30-09:45	60	Yin Yi, Yun Zhou, Ning Ma, Donghan Feng, Yuanhao Feng, Wenhong Yin	Stability analysis of a multi-terminal DC system considering the stochastic state of electric vehicles	303-3-C1-60
09:45-10:00	99	Qiyao Zuo, Rui Wang	Machine-Learning-based Sensor Fault Diagnosis of ORC System	303-3-C1-99
10:00-10:30	<b>Tea/Coffee Break</b> <b>Corridor, 3F</b>			
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	250	Masashi Matsubara, Masahiro Mae, Ryuji Matsuhashi	Evaluation of cost effectiveness of residential PV/BESS systems in Japan considering outage mitigation and battery degradation	303-3-C2-250
10:45-11:00	504	Gang Yu, Xianming Ye, Bo Wang	Optimal Electricity Procurement Plan for Charging Service Providers	303-3-C2-504
11:00-11:15	126	Hang Xiao	B Modulation of the D-band center of FeS <sub>2</sub> enhances nitrogen activation for electrocatalytic ammonia synthesis	303-3-C2-126
<b>Session Room: 303</b>				
<b>Track 1-Renewable Energy</b>				
Time	Paper ID	Author	Paper Title	Code
11:15-11:30	429	Hongjun Tan, Zhiling Guo, Zhengyuan Lin, Yuntian Chen, Haoran Zhang, Jinyue Yan	Enhancing Urban PV Potential Assessment through General Generative AI-based Remote Sensing Image Synthesis	303-3-C2-429
11:30-11:45	236	Yutaro Torikoshi, Takeshi Ishihara, Akira Tomigashi, Naoaki Shibasaki	Development of hydrogeological information for strategic dissemination of GSHP system -Example of the Inawashiro Plain, Fukushima Prefecture, Japan-	303-3-C2-236
11:45-12:00	487	Jia Zhang	Environmental impact forecasting for solar photovoltaic plants using interpretable machine learning	303-3-C2-487
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room and 301</b>			
<b>Session Room: 304</b>				
<b>Track 4-Energy Management, Policy, Economics and Sustainability</b>				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	213	Zheng Zhang, Linsong Cheng, Renyi Cao, Jinbao Liu, Langyu Niu	Application of Grey Correlation-multivariate Classification in Comprehensive Classification and Evaluation of Low Permeability Reservoirs with Different Geological Genesis	304-3-D1-213
09:15-09:30	174	Chengcheng Zhao, Qi Wang, Husain Baaqel, Leiliang Zheng Kobayashi, S. Mani Sarathy	Performance and Life Cycle Assessment of e-Methanol Production with Various Electrolyzer Technologies and CO <sub>2</sub> Sources: A Case Study in Saudi Arabia	304-3-D1-174
09:30-09:45	242	Tianshuo Zhou, Dan Wang, Hongjie Jia	The Exergy Supply Capacity of Integrated Energy Systems	304-3-D1-242
09:45-10:00	152	Xianyang Zhou	Power generation investment portfolio optimization under production and price uncertainties	304-3-D1-152

# Day 3: Sept. 4

10:00-10:30	<b>Tea/Coffee Break</b> <b>Corridor, 3F</b>			
10:30-10:45	269	Shuai Zhang, Dan Wang	Method for Calculating Maximum Carbon Emission Capability of Integrated Energy Systems	304-3-D2-269
10:45-11:00	495	Adair Garrett, Katherine Ginensky, Xi Wang, Hina Ahmed, Jingyuan Shen, Takahiro Yoshida, Akito Murayama, Perry Pei-Ju Yang	Leveraging Digital Twin Interface for Multimodal Transportation Resilience, Connectivity, and Equity – A Case Study of Toyosu, Tokyo	304-3-D2-495
11:00-11:15	277	Yukiko Yoshida, Yujiro Hirano	Towards Green Transformation to Achieve Hitachi Zero-Carbon City Vision for 2050	304-3-D2-277
11:15-11:30	249	Hamad AL-ALI, Koji TOKIMATSU	Integrating Desalination and Wastewater Treatment in Hydrogen Production: A Lifecycle Perspective on Water Sustainability	304-3-D2-249
<b>Session Room: 304</b>				
<b>Track 5-Mitigation Technologies</b>				
11:30-11:45	485	Mengqiu Deng, Xiao Peng	A Belief-desire-intention Agent Model for Modeling End-user Decision-Making under Demand Response	304-3-D2-485
11:45-12:00	448	Genghong Lu, Siqi Bu	Intelligent Fault Diagnosis for Overhead Lines with Covered Conductors: Using Large Language Model	303-3-D2-448
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room and 301</b>			
<b>Session Room: 305</b> <b>Track5-Energy Science</b>				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	166	Hanping Xiong	Engineering Symmetry Breaking in MoS <sub>2</sub> -MoSe <sub>2</sub> Heterostructures for Optimal Thermoelectric Performance	305-3-E1-166
09:15-09:30	133	Chenyi Qian, Jiaxuan Wang, Xiang Qiu, Ruixin Ma, Binbin Yu, Jiangping Chen	Optimization Design and Heat Transfer investigation of TPMS Compact Heat Exchanger Based on Field Synergy Principle	305-3-E1-133
09:30-09:45	404	Weiyu Yuan	Numerical Investigation into the Production Characteristics and Methane Leakage from the Hydrate Reservoir with Underlying Free Gas in Horizontal Well System	305-3-E1-404
09:45-10:00	43	Kuang Yang	Data-driven dimensional analysis of flow boiling critical heat flux in microgravity	305-3-E1-43
10:00-10:30	<b>Tea/Coffee Break</b> <b>Corridor, 3F</b>			
10:30-10:45	112	Ping Yuan, Hua Tian, Fengying Yan, Xuanang Zhang, Gequn Shu	An Active Design Method for Adaptive Printed Circuit Heat Exchanger Channel Structure	305-3-E2-112
10:45-11:00	28	Yaqian Zhang, Chuanhui Miao, Shilin Zeng, Yiqiang Li, Jinxin Cao, Xuechen Tang, Zheyu Liu, Qihang Li, Tao Song	Study on Distribution Patterns of Displacement Pressure Gradients and Regulation Effectiveness of Chemical Flooding in Strong Heterogeneity Reservoir	305-3-E2-28
11:00-11:15	257	Hanxiao Zhao, Li,Zhao , Weicong Xu , Shuai Deng	3D Analysis and Optimization of Kalina Cycle System with High-Temperature Heat Recovery	305-3-E2-257
11:15-11:30	387	Xiong Zhao, Nanjing Hao	Microfluidic one-step and large-scale production of nanofluids for efficient phase-change cooling of power electronic devices	305-3-E2-387
11:30-11:45	7	Bingtao Yang	Numerical Simulation of Pore-Scale Supercritical CO <sub>2</sub> Enhanced Oil Recovery Based on Digital Sandstone Core	305-3-E2-7
11:45-12:00	303	Zhiqiang Wang, Anqi He, Mengqi Ma, Miao Zhang, Hanqiao Jiang	The Study On Microscopic Mechanism of Asphalt Particle	305-3-E2-303
12:00-13:30	<b>Lunch Break</b> <b>Venue: International Conference Room and 301</b>			
<b>Session Room: 307</b> <b>Track 8 Hydrogen Energy</b>				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	271	Xing Lu	Hydrogen supply chain uncertainty: a systematic literature review	306-3-F1-271
09:15-09:30	26	Fangtao Lyu, Zhengfu Ning, Ying Kang, Zejiang Jia	Molecular simulation on H <sub>2</sub> adsorption in shale kerogen nanopores and implications for underground hydrogen storage	306-3-F1-26

# Day 3: Sept. 4

09:30-09:45	316	Marco Maggini, Giacomo Falucci, Andrea Luigi Facci, Stefano Ubertini	Enhancing Metal Hydride – Phase Change Material Hydrogen Storage Systems Efficiency with Expanded Graphite	306-3-F1-316
09:45-10:00	24	Hanan Mohamed Mohsin, Yuting Zhuo, Yansong Shen	Effect of Flow Channel Configuration on Electrolyser Performance: a Computational Fluid Dynamics Study	306-3-F1-24
10:00-10:30	<b>Tea/Coffee Break Corridor, 3F</b>			
10:30-10:45	170	Hang Yuan, Hongguang Zhu, Longlong Lei	Cost-Effective Hydrogen Storage Materials: Utilizing Biogas Slurry to Synthesize High-Performance Hollow porous Carbon Spheres	306-3-F2-170
10:45-11:00	513	Shuaishuai Yuan	Simulation of hydrogen elimination using wire mesh coated by Pt/Al <sub>2</sub> O <sub>3</sub>	306-3-F2-513
11:00-11:15	241	Tianhong Zhang, Masahiro Mae, Ryuji Matsuhashi	Exploring Japan's Domestic Green Hydrogen Production Strategy in the 2030s	306-3-F2-241
11:15-11:30	20	Ruoxuan Zhao, Qiming Yang, Gengfeng Li, Minghao Li, Chenlin Ji, Dafu Liu, Ziwen Xu, Jiaju Shi, Zhaohong Bie	System Dynamics Analysis of Interaction Behaviors and Pricing Mechanisms in Grid-Hydrogen-Vehicle System	306-3-F2-20
11:30-11:45	14	Yiming Zhou	Enhancing the support hydrogen spillover by W doping for the efficient hydrogenation of dibenzyltoluene	306-3-F2-14
11:45-12:00	403	Ruhang Zhang	Design and optimization of segmented reformer based on NSGA-II optimization algorithms	306-3-F2-403
12:00-13:30	<b>Lunch Break Venue: International Conference Room and 301</b>			
<b>Session Room: 307</b>				
<b>Track 7 Energy Storag</b>				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	371	Zegang Zheng, Yongliang Zhao, Ming Liu, Zhu Wang, Junjie Yan	Off-design performance analysis of a Joule-Brayton Carnot battery system at different power input/output demand	307-3-G1-371
09:15-09:30	219	Shun Chen	Internal Microstructural Changes and Side Reactions Induced by Copper Impurity Particles in Lithium-Ion Batteries	307-3-G1-219
09:30-09:45	439	Junwei Yang, Lun Ye, Nana Li, Bing Sun, Zheng Zhang	The Optimal Operation Method of Integrated Solar Energy Storage and Charging Power Station Considering Multiple Benefits of Energy Storage	307-3-G1-219
09:45-10:00				
10:00-10:30	<b>Tea/Coffee Break Corridor, 3F</b>			
<b>Session Room: 307</b>				
<b>Track 8 Hydrogen Energy</b>				
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	259	Azaria Haykal Ahmad, Muhammad Aziz	Thermodynamic Analysis of Decarbonization of Natural Gas Combine Cycle Through Integrated Biomass Direct Chemical Looping Hydrogen Generation and Ammonia Synthesis	307-3-G2-259
10:45-11:00	103	Shiyuan Wang	Ultra-high activity catalysts based on Ni-Al layered double hydroxides for N-Ethylcarbazole hydrogenation	307-3-G2-103
11:00-11:15	57	Yan Xiao, Zhou Xiangyang, Bing Li, Pingwen Ming, Cunman Zhang	Enhancing proton exchange membrane fuel cell lifespan method through anode-cathode catalyst layer synergy based on CexZr1-xO <sub>2</sub> radical quencher	307-3-G2-57
11:15-11:30	427	Bin Gao, Yuekuan Zhou	A Sizing Approach on an Integrative PV-Electrolyzer-Battery-SOFC-Absorption Chiller CCHP System under Integral System Degradation	307-3-G2-427
11:30-11:45	493	Zhipeng Hou, Fengxiang Chen, Yafeng Guo, Huitao Zhang, Su Zhou	Development of a Hydrogen-based Microgrid Test Bench with Level of Hydrogen Estimator	307-3-G2-493
11:45-12:00	497	Haowen Shen, Fengxiang Chen	Model predictive control of PEMFC air supply system based on Kalman state estimation of unmeasurable parameters	307-3-G2-497
12:00-13:30	<b>Lunch Break Venue: International Conference Room and 301</b>			
<b>Session Room: 302A</b>				
<b>Track 5 Mitigation Technologies</b>				
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	92	Dingyi Jiang, Shouzhuang Li, Mika Järvinen	Optimizing Sorbent Flow and Parameters in Calcium Looping Project integrated with CaO reactivation	302A-3-A3-92

# Day 3: Sept. 4

13:45-14:00	507	Yihe Zhang	Feasibility Study and Parameter Optimization of CO <sub>2</sub> Injection Technology in Heavy Oil Field	302A-3-A3-507
14:00-14:15	416	Jidong Kang, Chenyi Cai, Yuming Fu, Pieter Herthogs	How Do Land Use Regulations Impact Distributed Energy System? An Integration of Digital Urban Regulatory and Energy System Optimization models	302A-3-A3-416
14:15-14:30	408	Jing-Chun Feng, Cai Chaofeng	A negligible contribution in terms of dissolved inorganic carbon from "Haima" cold seep in the South China Sea	302A-3-A3-408
14:30-14:45	409	Jing-Chun Fen	Impact of Microplastics on the Gene Abundance of ANME-1 Methane Metabolism	302A-3-A3-409
<b>Session Room: 302B</b>				
<b>Track 6 Energy Science</b>				
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	452	Boying Li, Xinwei Liao, Dongzhi Yan, Zhonghao Li	A physics-based data-driven simulation method coupling the time-varying properties and high-speed non-Darcy flow under waterflooding	302B-3-B3-452
13:45-14:00	406	WEIYU YUAN	Effects of various ionic solutions on the methane hydrate formation kinetics in deep-sea cold seep environments	302B-3-B3-406
14:00-14:15	451	WEIYU YUAN	Effect of Ca-MMT with different water content on methane hydrate kinetics in sandy environments	302B-3-B3-451
14:15-14:30	407	song zhong	The kinetics of methane hydrate formation study in different sediments based on the "Haima" cold seep environment	302B-3-B3-407
14:30-14:45	458	Junzheng Zhang, Lei Pan, Xiao Wu, Junli Zhang	A Multifactorial Lifetime Estimation Method for Boiler Components of Coal-Fired Power Plant During Flexible Operations	302B-3-B3-458
<b>Session Room: 303</b>				
<b>Track 2- Clean Energy Conversion Technologies</b>				
<b>Session Chair: xxx</b>				
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	484	ALISHA DAIMARI, Atul Sharma, Shyamprasad Karagadde, Shyamkumar P I	Effect of Novel Ribs in Parallel Channel Low Temperature PEMFC Performance	303-3-C3-484
<b>Session Room: 304</b>				
<b>Track 3 Intelligent &amp; Flexible System</b>				
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	494	Huitao Zhang, Fengxiang Chen, Yaowang Pei	Research on Vehicle Thermal Management Control Strategy for Fuel Cell Vehicles under High-temperature Conditions Based on Model Predictive Control	304-3-D3-494
13:45-14:00	476	Hairun Li, Yunfei Mu	Characterization of flexible region of multisource district heating system for the electrical power system	304-3-D3-476
14:00-14:15	434	Yaoyu Guo	Research on liquid level reconstruction of sloshing pressurizer based on POD method	304-3-D3-434
14:15-14:30	473	Xinpei Yang, Jiong Shen, Honghai Niu, Yiguo Li, Junli Zhang	Adaptive Scheduling Strategies for Integrated Energy Systems Under Renewable Energy Uncertainties	304-3-D3-473
<b>Session Room: 305</b>				
<b>Track 4 Energy Ethics, Management, Policy, Economics and Sustainability</b>				
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	350	Yuriko Iida	Plastic-Free Beverage Distribution: A Data-Driven Approach to CO <sub>2</sub> Reduction and Environmental Scoring	305-3-E3-350
13:45-14:00	436	Laura Andolf, Boris Ortega	Smart Choices: The Influence of Energy Literacy on Energy Technology Adoption	305-3-E3-436
14:00-14:15	186	YANG ZHENYU	Assessing Urban Transportation Resilience to Snowstorms Using Mobile GPS Data and Machine Learning Models	305-3-E3-186

# Presentation Guide

## Presentation

ICAE2024 will be held on-site. All accepted papers will be oral presentations.

Speakers are required to copy your slides to the computer of the conference room in advance.

Your presentation should be in accordance with your allocated time. **It is 15mins for each paper, including a 12mins presentation and a 3mins Q&A.**

Please always refer to the latest conference program, which can be downloaded from the conference website:

[ICAE 2024 \(applied-energy.org\)](https://www.applied-energy.org), for actual presentation time.



# Nexus

A Cell Press partner journal

A brand new open access journal,  
now open for submissions

Nexus, to be published jointly by **Cell Press** and the **PolyU Press**, covers all subjects in the areas of applied sciences, engineering, technology, and inter- and multi-disciplinary fields. The journal will publish original research, review articles, and commentary on innovations that aim to improve lives, protect the planet, and contribute to the UN Sustainable Development Goals.

Nexus is Cell Press's first partner journal to be issued in collaboration with a university.

Editor-in-chief  
**Jerry Yan, Professor of Energy and Buildings**



For details at

<https://www.cell.com/nexus/home>

To contact the editor-in-chief or for inquiries about the journal, email [nexus.polyu@polyu.edu.hk](mailto:nexus.polyu@polyu.edu.hk).

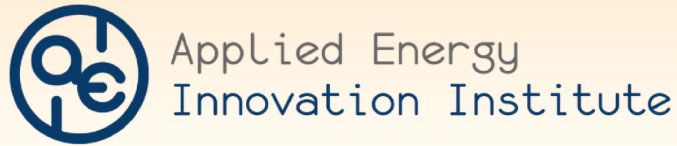


THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學





# Acknowledgements



**UNILAB**  
An international virtual lab of collective  
intelligence in Applied Energy.



**RESEARCH &  
INNOVATION  
WITHOUT BORDERS**

Nexus



# Useful Information - Registration

## Registration

### WhatsApp/WeChat Group (important info)

Please scan and join our ICAE2024 WhatsApp group chat or WeChat group chat for the latest updates and announcements.



**WhatsApp Group Chat**

群聊: ICAE2024 Participants



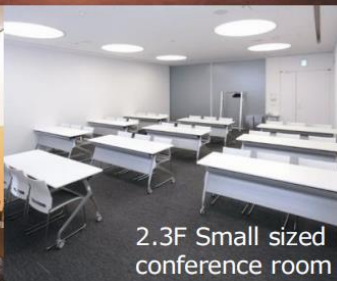
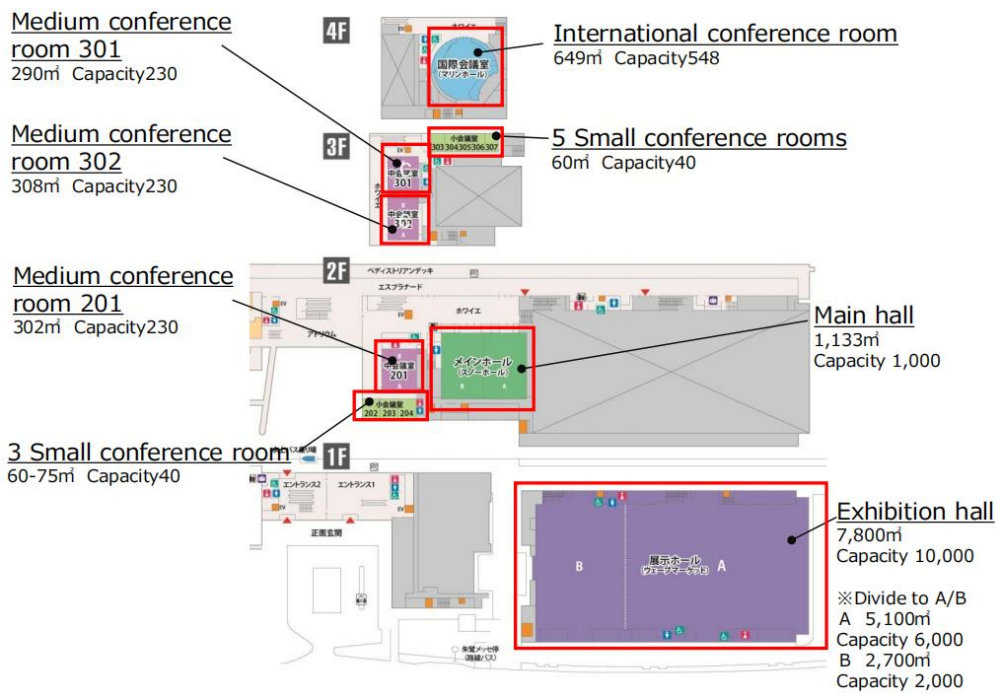
该二维码7天内(8月18日前)有效, 重新进入将更新

**WeChat Group Chat**

# Useful Information – Meal and Visits

## Meal and Banquet arrangement

	Sept 2	Sept 3	Sept 4
Tea/Coffee Break	Corridor, 4F (a.m.) Corridor, 3F (p.m.)	Corridor, 4F (a.m.) Corridor, 3F (p.m.)	Corridor, 3F
Lunch	International Conference Room and 301	International Conference Room and 301	International Conference Room and 301
Banquet	International Conference Room	N/A	N/A



# Useful Information – Meal and Visits

## Visit

**\*No group visits will be organized for this meeting. Participants may explore Niigata City on their own.**

The following are the recommended sites available.

### Northern Culture Museum

A wealthy farmer's mansion built over a period of eight years in the residence of Ito Bunkichi, a large landowner in Echigo. The huge 65-room former estate of the Ito landowning clan. Perhaps most interesting is the large (100-tatami-mat) banquet hall, used exclusively for family-related ceremonies. The lovely garden outside the hall has appeared as a location in many Japanese movies.

<https://hoppou-bunka.com/english/>



### Imayotsukasa Sake Brewery

Sake brewery Niigata prefecture is Japan's first large scale sake producing area. Niigata's sake is known all over Japan for its crisp, dry flavor and refreshing taste. The rice, water, weather and landscape of Niigata are perfect for brewing sake with the prefecture boasting the most breweries in Japan. Niigata's sake is such high quality that no matter what brand you drink, you're sure to love it.





# Useful Information – Meal and Visits

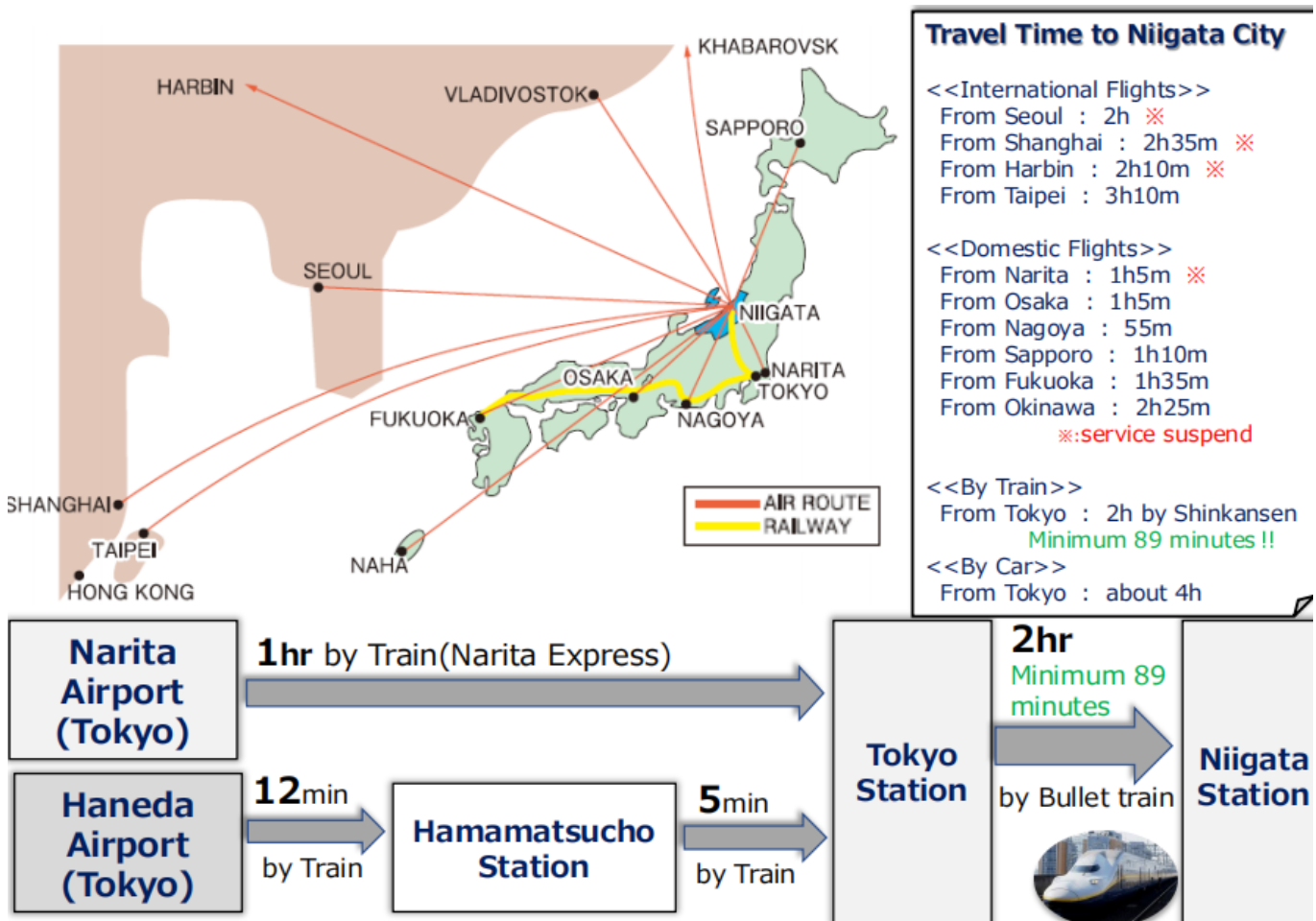
## Tsubame-Sanjo

<https://www.japan.travel/en/spot/2063/>



# Useful Information - Travel

## Access to Niigata

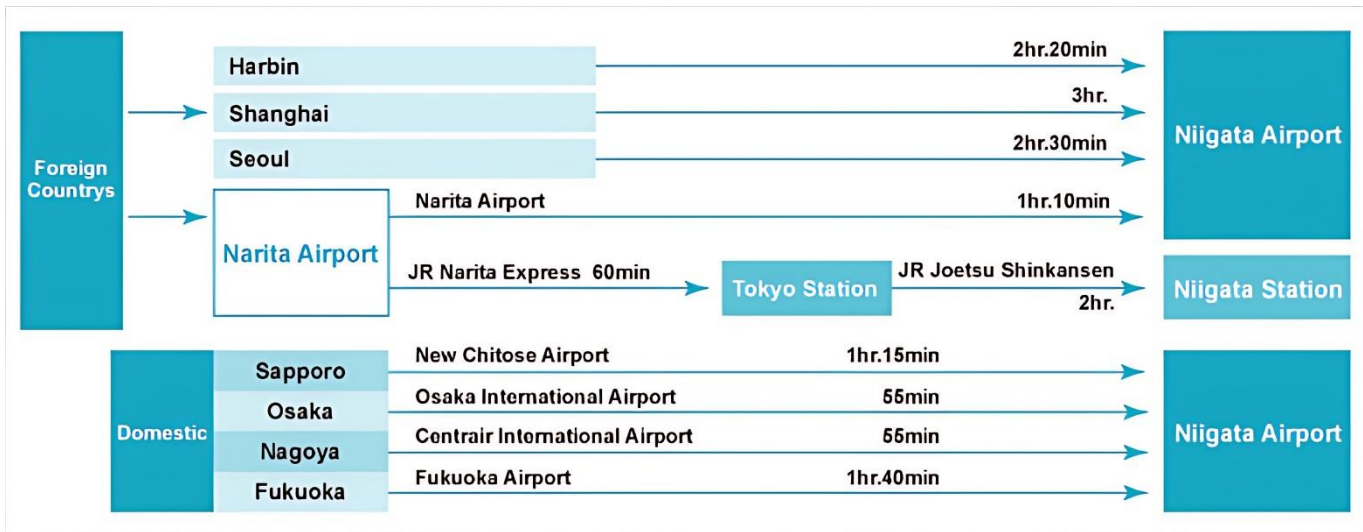


Niigata City is located on the northwest coast of Honshu, Japan's largest island, facing the Japan Sea. The two main ways of reaching the city are by plane into Niigata International Airport, and by train into JR Niigata Station. Direct international flights fly to and from Seoul, Shanghai, and Harbin. Domestic flights fly to and from many major cities, including Tokyo (Narita), Osaka, Kobe, Nagoya, Fukuoka, Okinawa and Sapporo. The JR Joetsu shinkansen (bullet train) can take you from Tokyo Station to JR Niigata Station in about 2 hours.

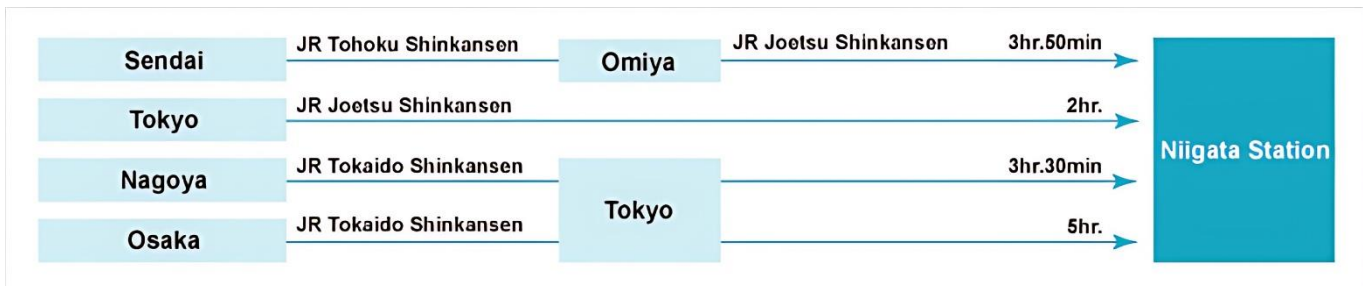
For more information, please refer to Niigata official travel guide <https://www.nvcb.or.jp/multilingual/access>.

# Useful Information - Travel

## Travel by air



## Travel by Rail



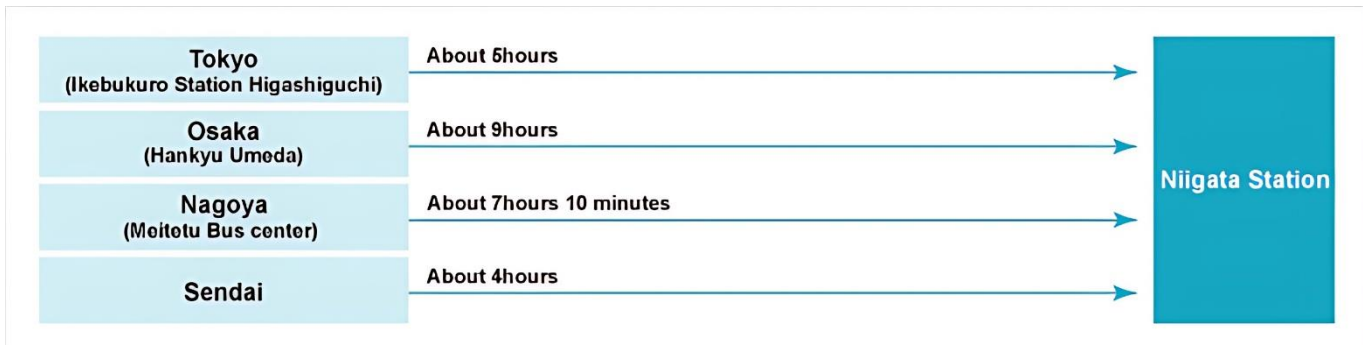
## Travel by Car





# Useful Information - Travel

## Travel by Bus

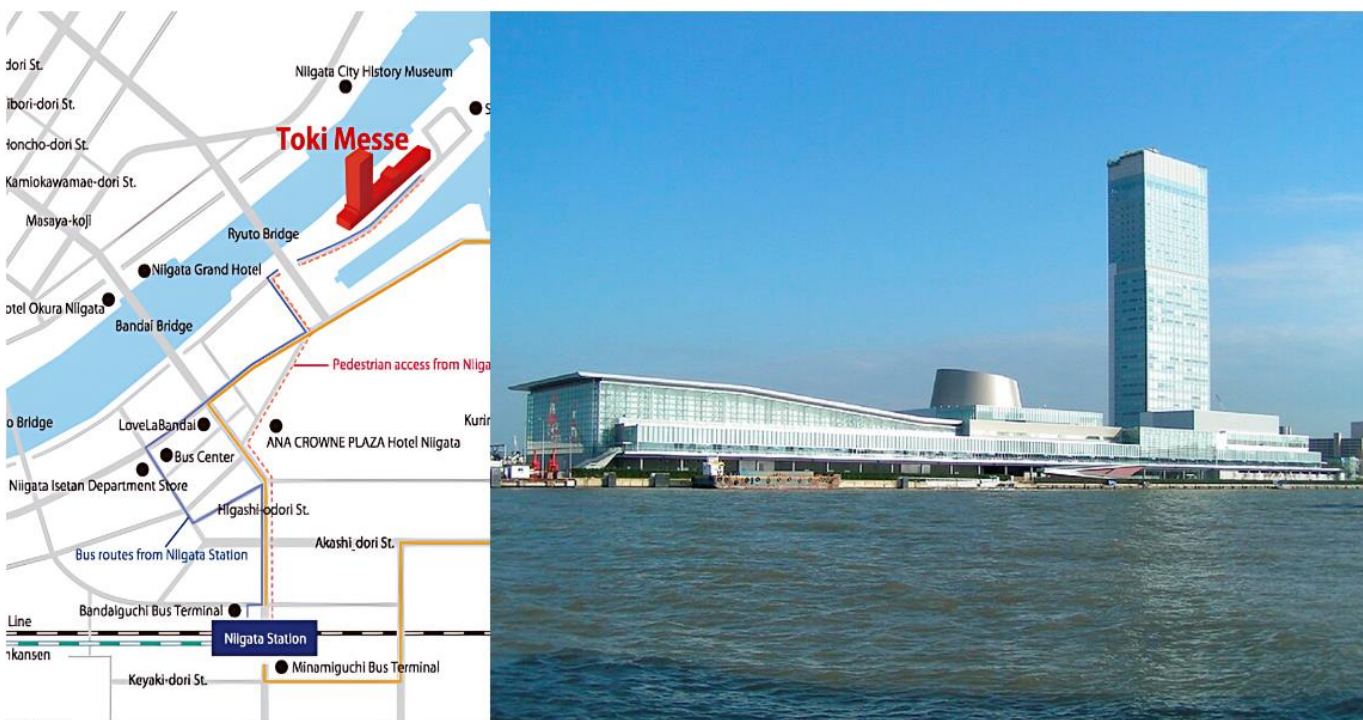


## Access to Toki-Messe

### Address

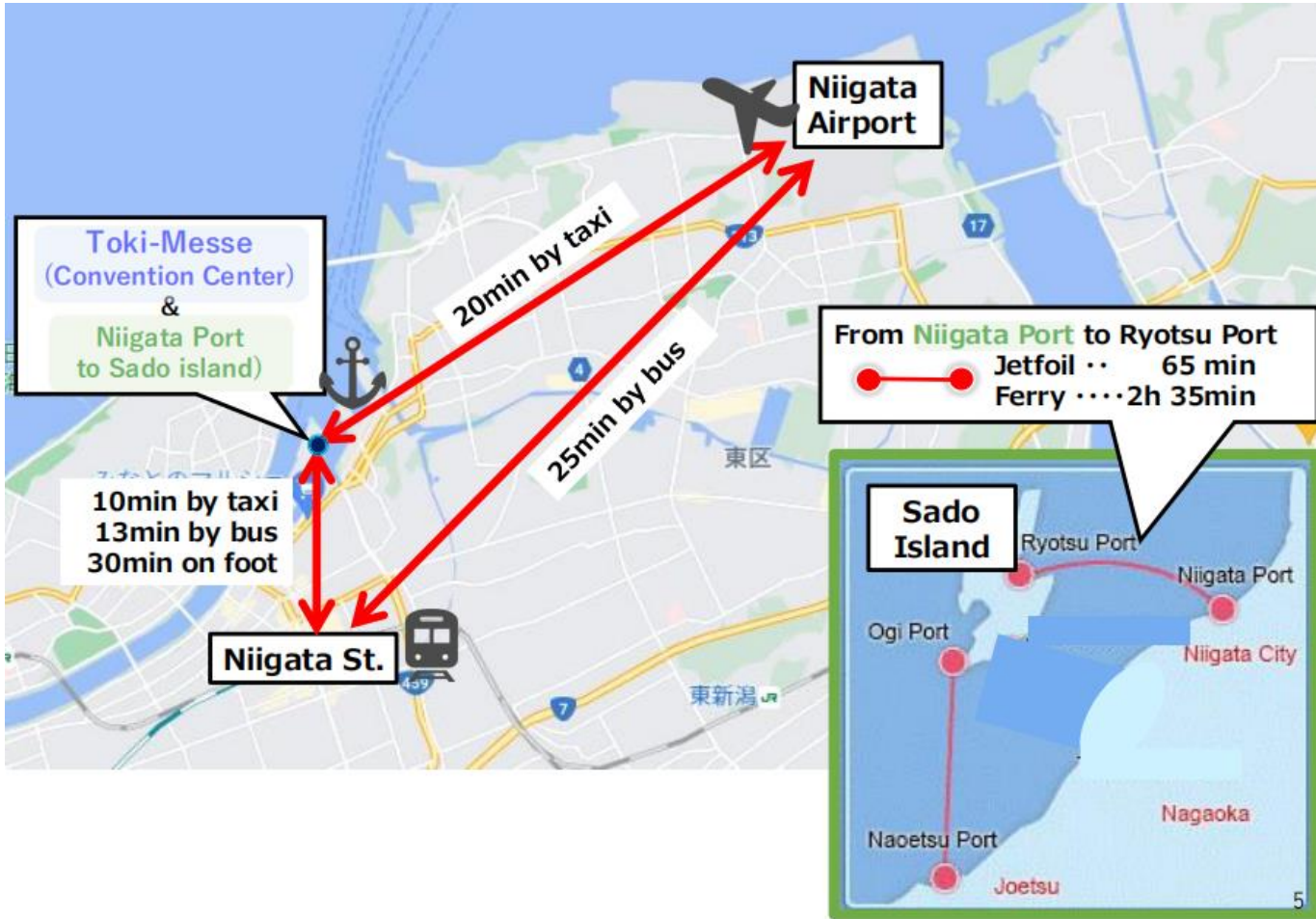
TOKI MESSE is Located at the mouth of Shinano-River, in the heart of Niigata city, TOKI MESSE is opened in 2003. A conference, a party and accommodation, everything comes into only one space.

[Address] 6-1 Bandaijima, Chuo-ku, Niigata City, Niigata 950-0078 Japan

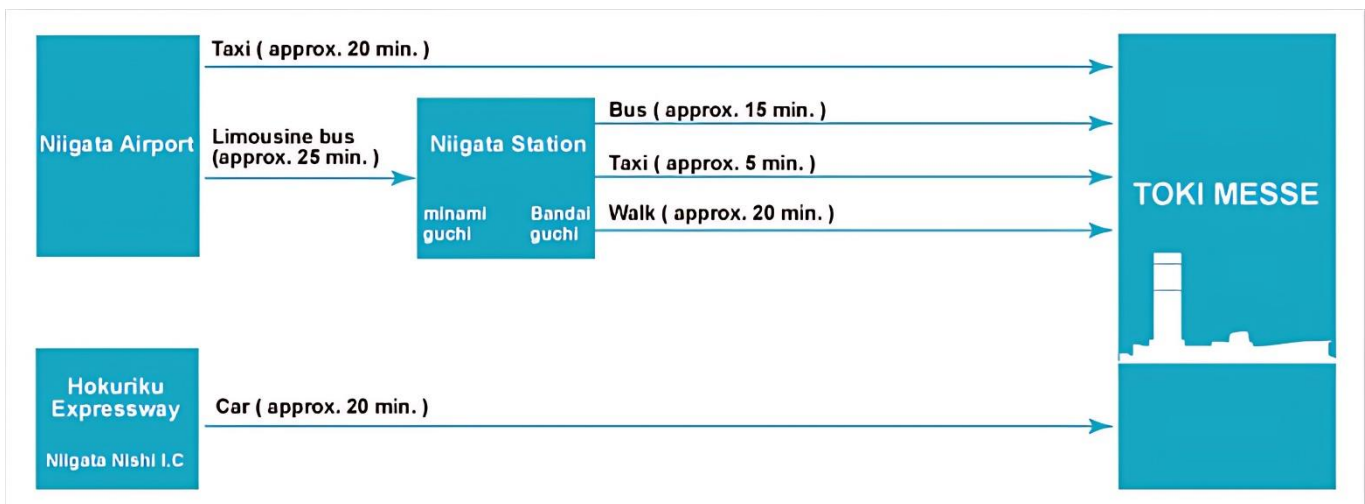


# Useful Information - Travel

## Travel to Toki-Messe



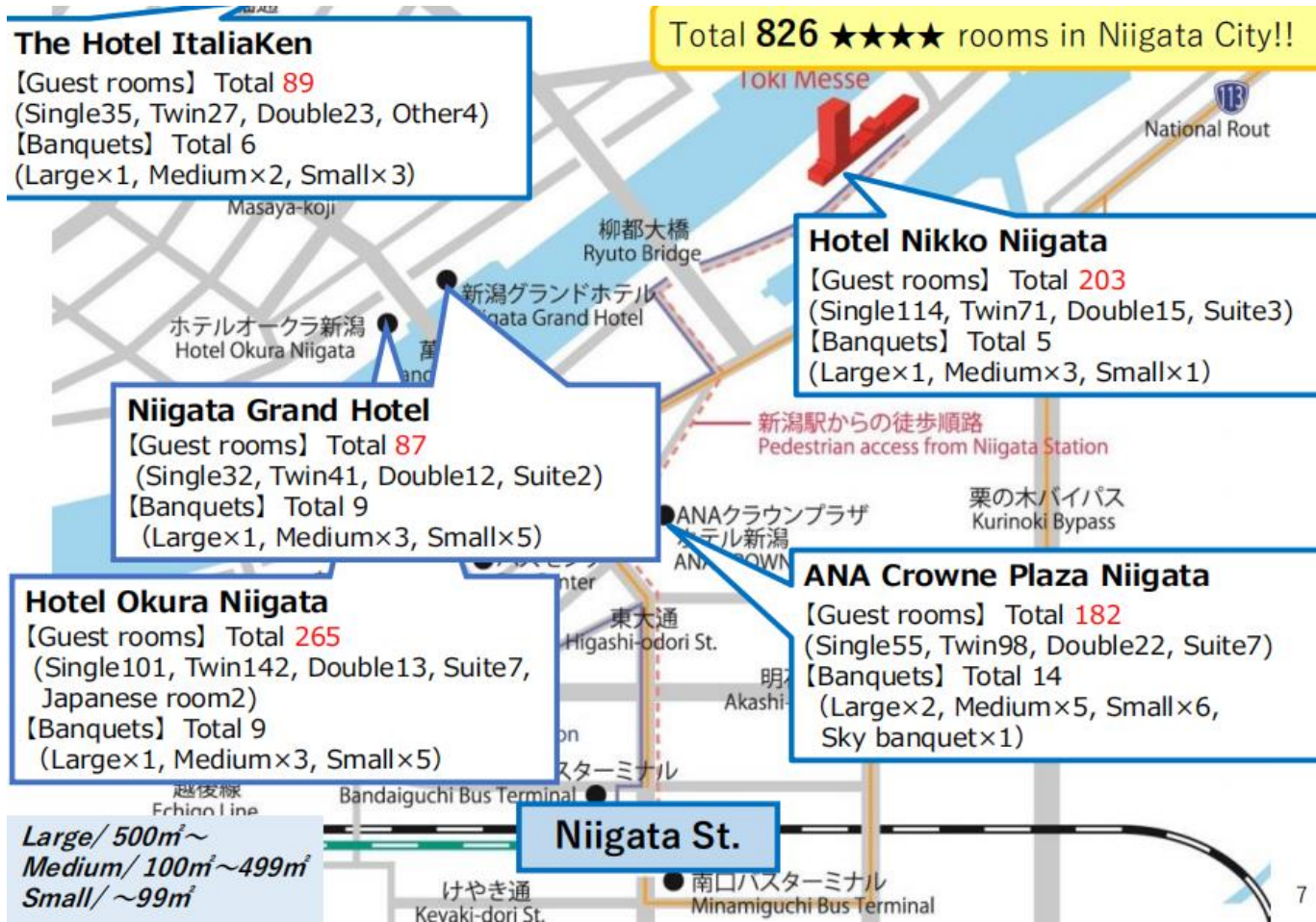
From Niigata station to TOKI MESSE, you may take bus (15min), take taxi (5min) or walk (20min).





# Useful Information - Hotel

## Main Hotels in Niigata City



## Hotel reservations

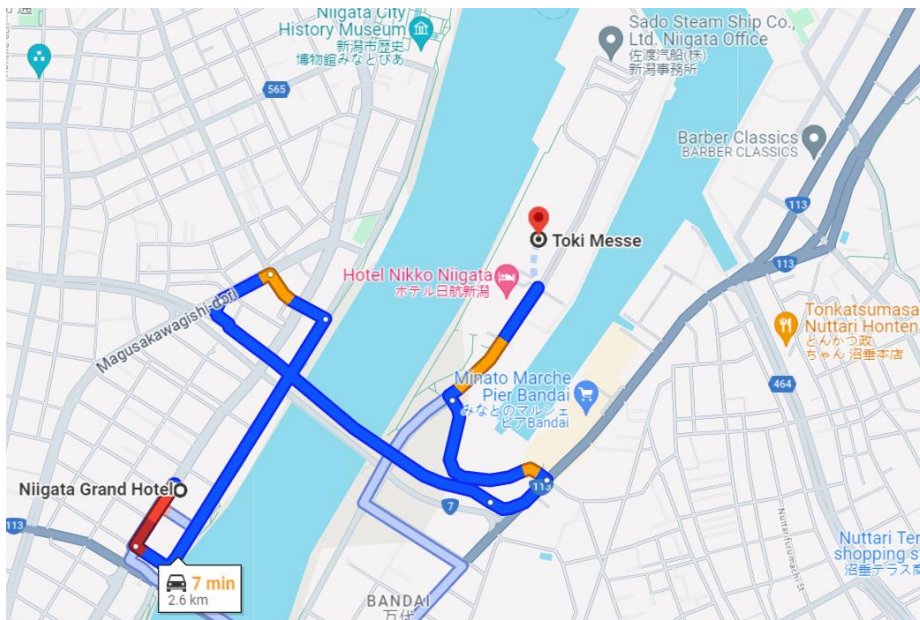
1. Hotel Nikko Niigata, 5-1 Bandaijima, Chuo Ward, Niigata, 950-00782.



# Useful Information - Hotel



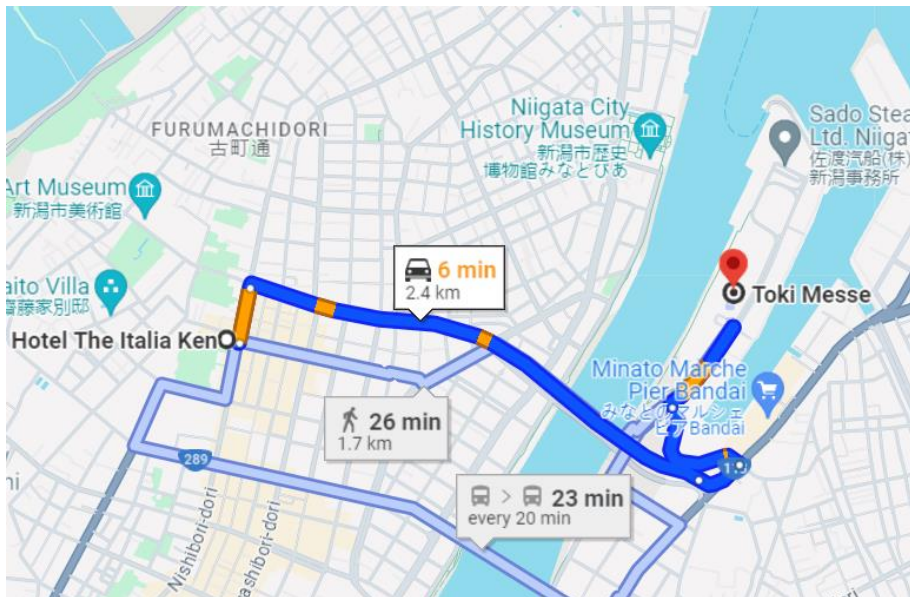
## 2. Niigata Grand Hotel, Chuo Ward, Shimookawamaedori, Niigata, 951-8052





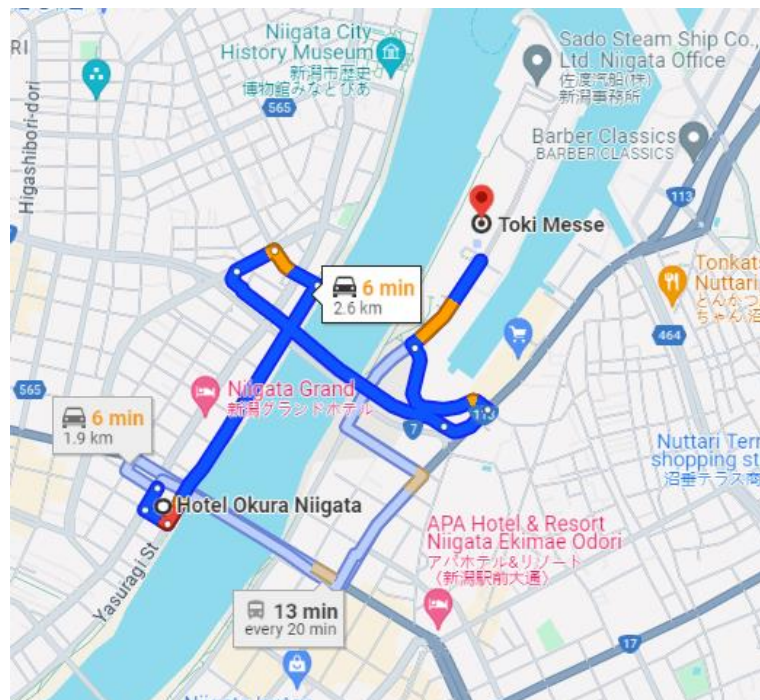
# Useful Information - Hotel

## 3. The hotel Itallaken, 7 Bancho-1574 Nishiboridori, Chuo Ward, Niigata, 951-8061



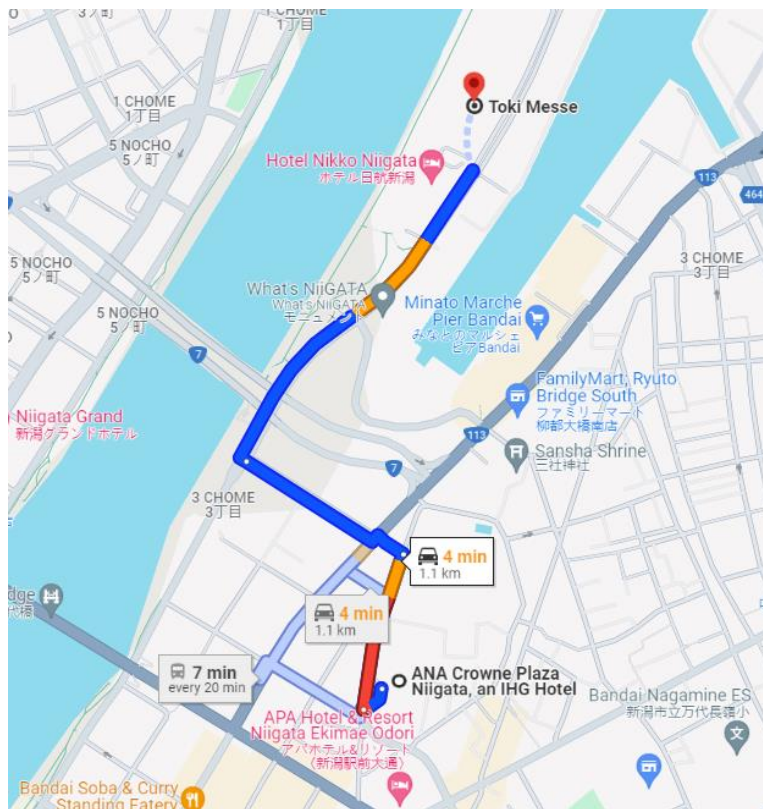
# Useful Information - Hotel

## 4. Hotel Okura Niigata, 6 Chome-53, Chuo Ward, Kawabatacho, Niigata, 951-8053



# Useful Information - Hotel

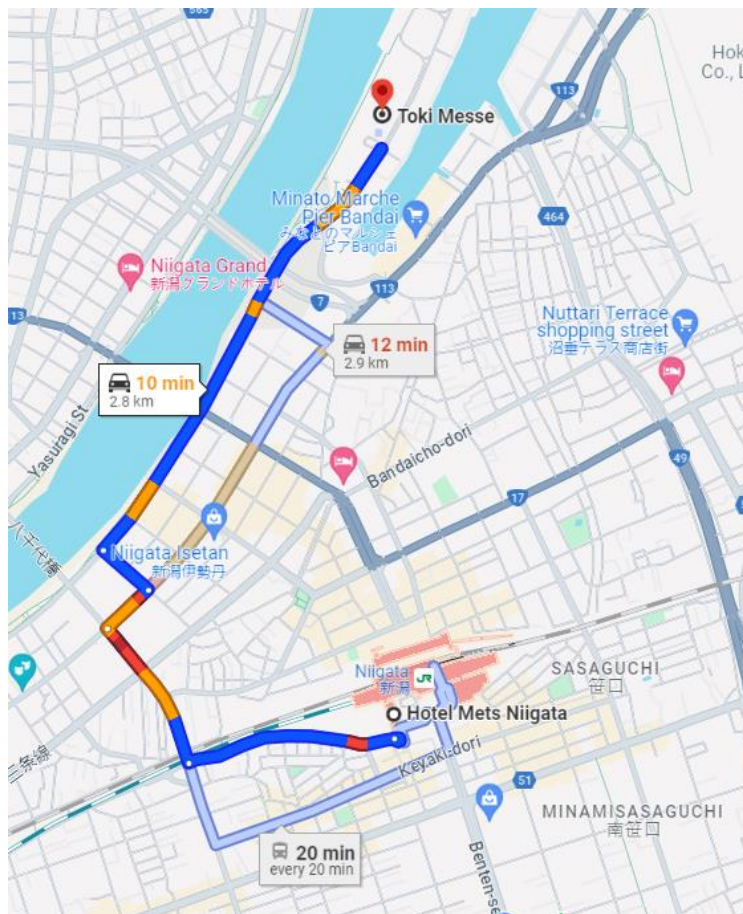
## 5. ANA Crowne Plaza Niigata, 5 Chome-11-20 Bandai, Niigata, 950-8531





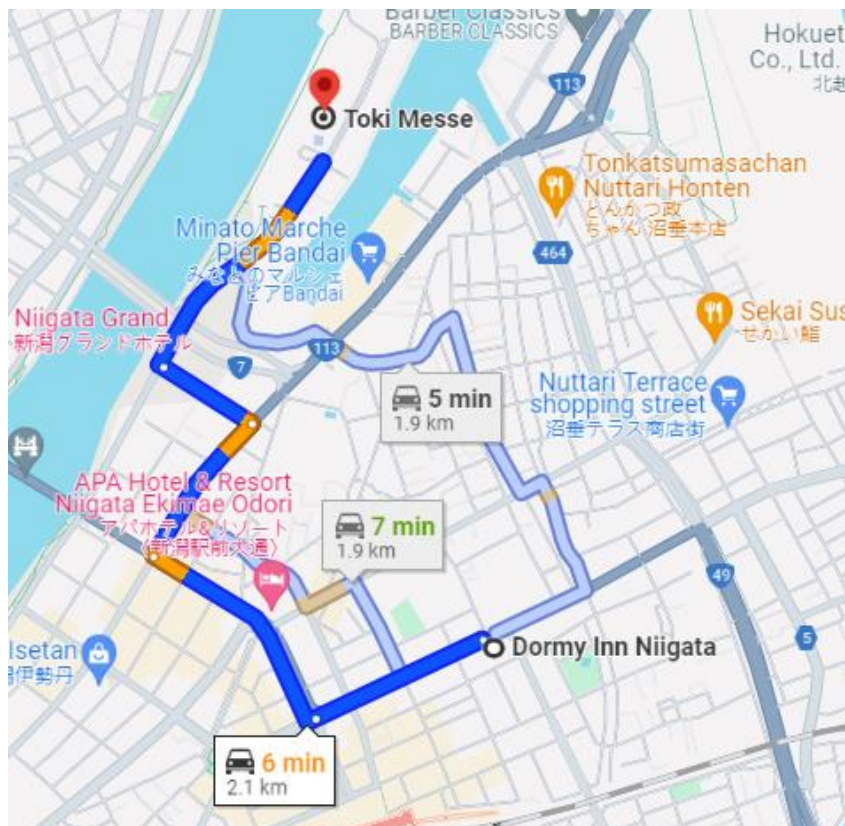
# Useful Information - Hotel

## 6. Jr-East Hotel Mets Niigata, Chuo-ku Hanazono 1-96-47, Niigata, 950-0086



# Useful Information - Hotel

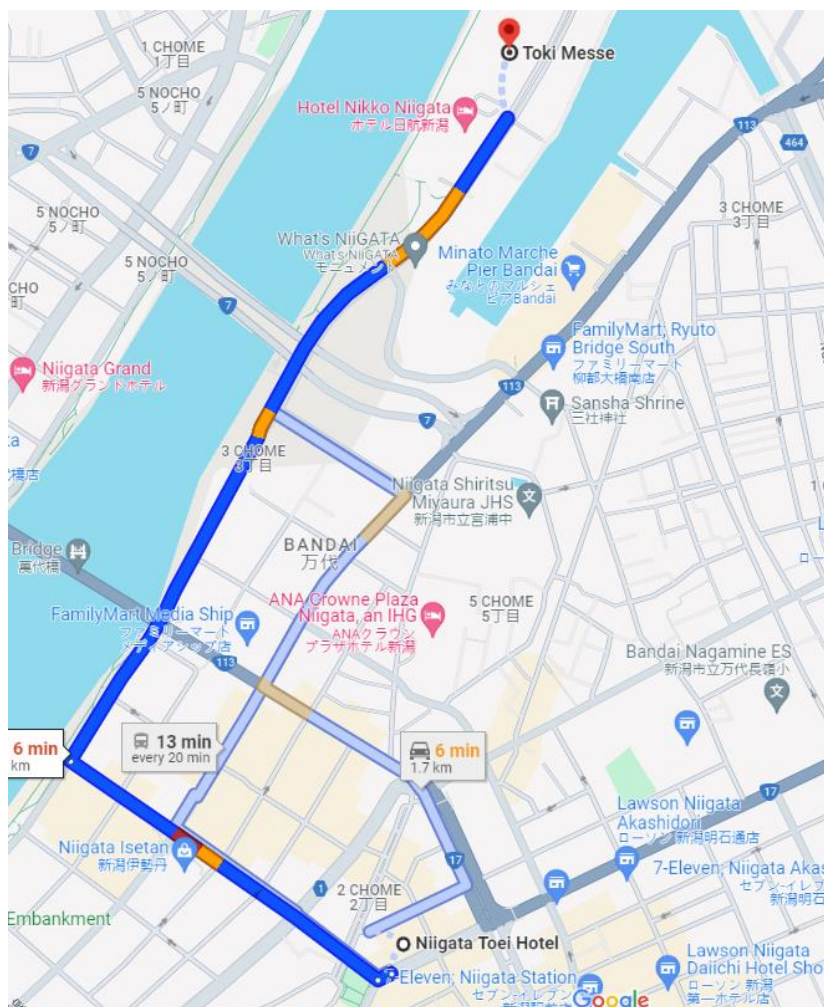
7. Tennen Onsen Taho-No-Yu Dormy Inn Niigata, Chuo-ku Akashi 1-7-14, Niigata ,  
950-0084





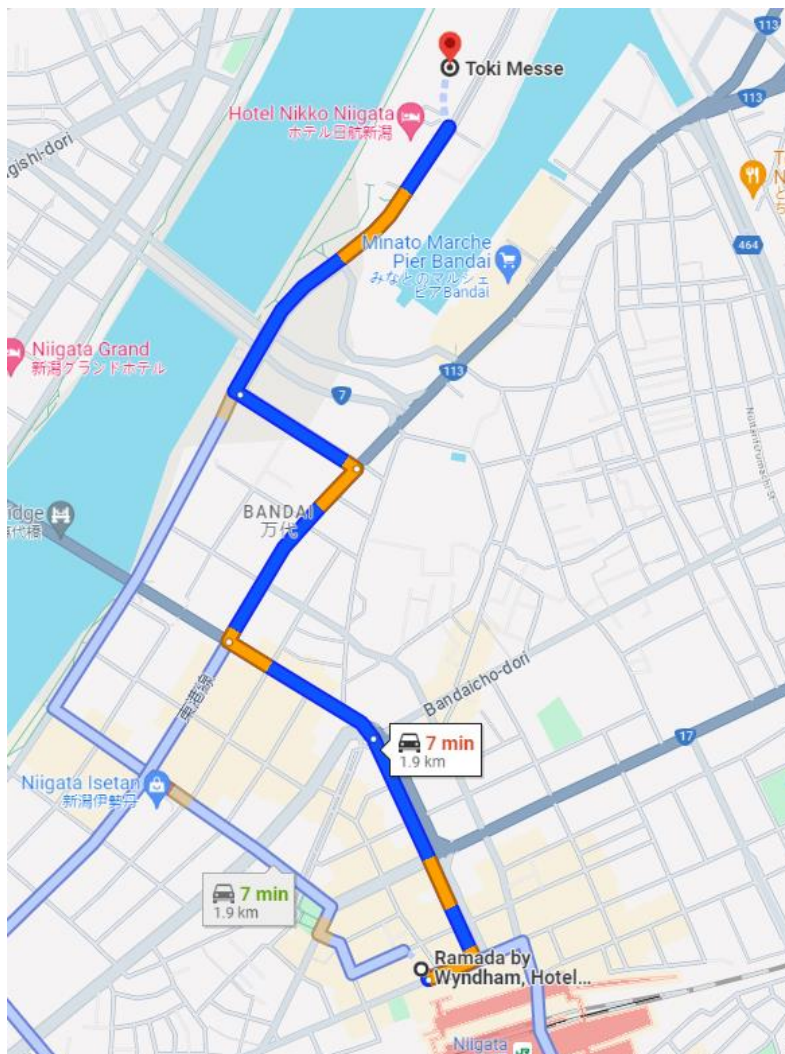
# Useful Information - Hotel

## 8. Niigata Toei Hotel, Benten 2-1-6, Niigata ,950-0901



# Useful Information - Hotel

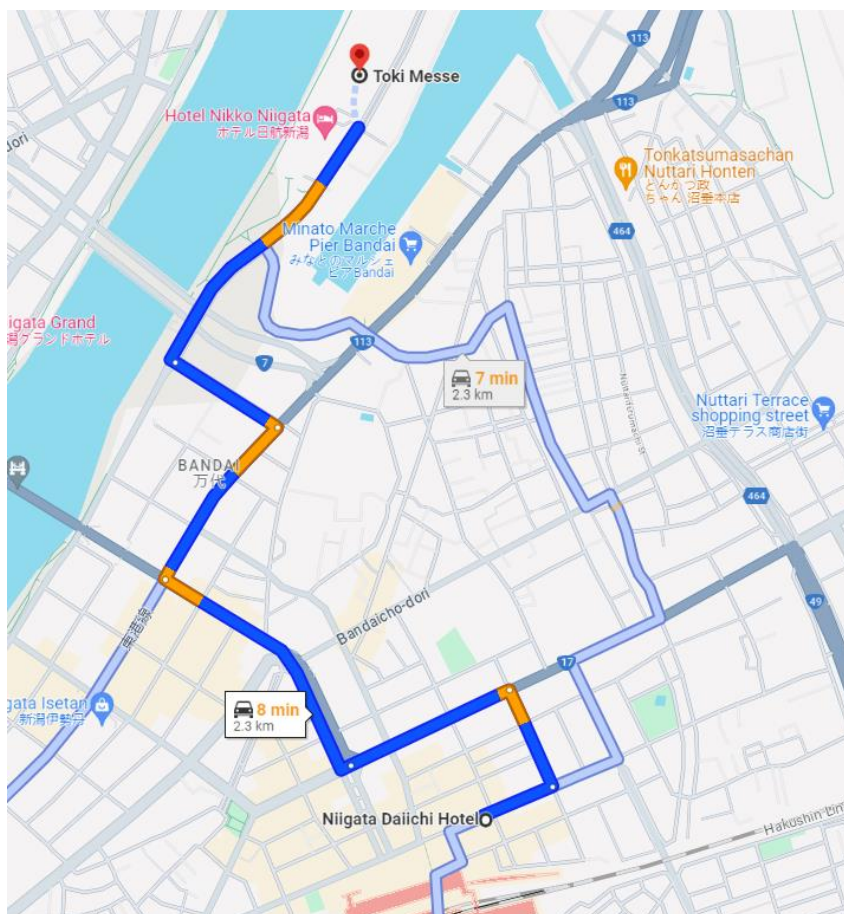
## 9. Hotel Global View Niigata, Chuo-ku Benten 1-2-4, Niigata, 950-0901





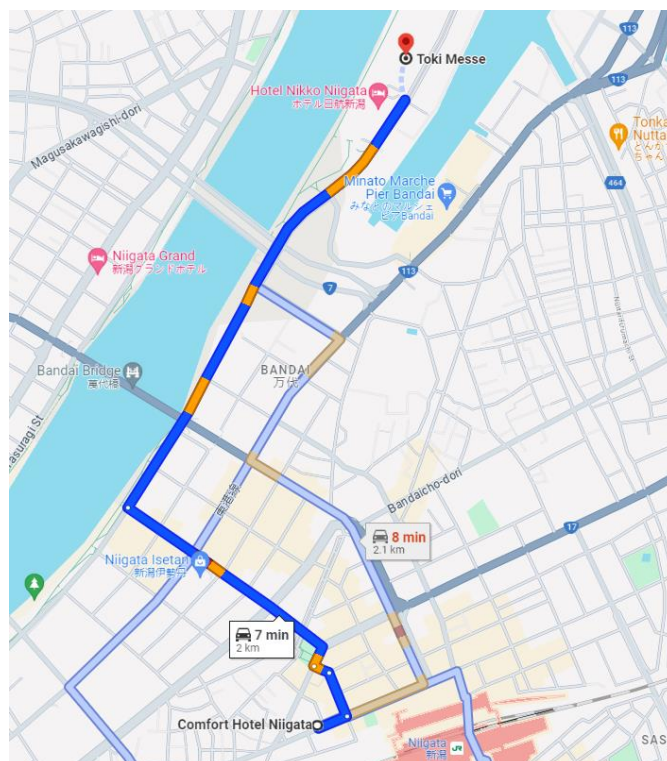
# Useful Information - Hotel

## 10. Niigata Daiichi Hotel, Chuo-ku Hanazono 1-3-12, Niigata , 950-0086



# Useful Information - Hotel

## 11. Comfort Hotel Niigata, Chuo-ku, Benten 3-3-1, Niigata, 950-0901

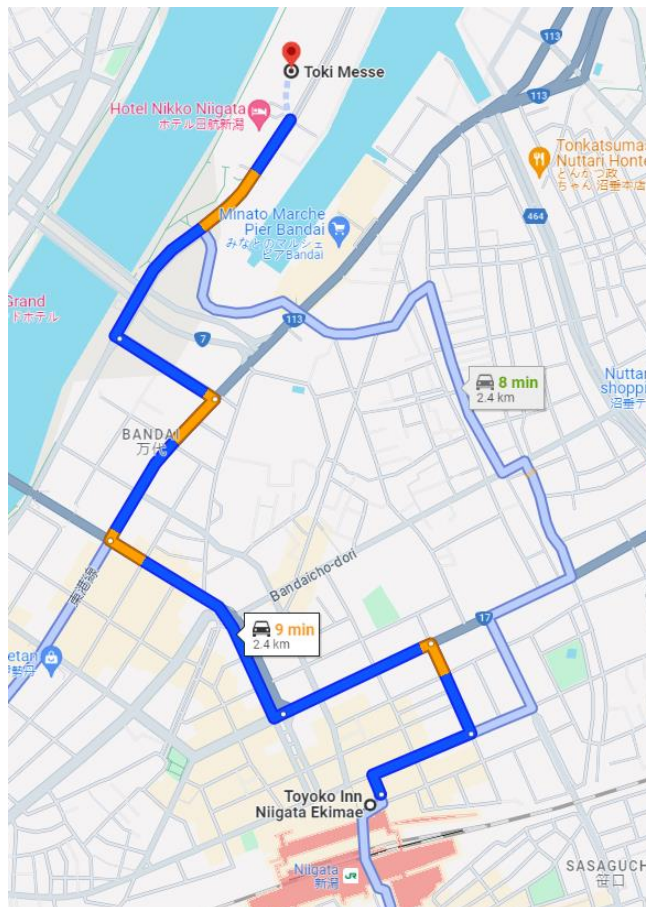




# Useful Information - Hotel

## 12. Toyoko Inn Niigata Ekimae, Chuo-ku Hanazono 1-2-2 Gresso 4F, Niigata, 950-

0086



# About Niigata



## Introduction to Niigata

Niigata is a city located in the northern part of Niigata Prefecture. It is the capital and the most populous city of Niigata Prefecture, and one of the cities designated by government ordinance of Japan, located in the Chūbu region of Japan. It is the most populous city on the west coast of Honshu, and the second most populous city in Chūbu region after Nagoya. It faces the Sea of Japan and Sado Island. As of 1 September 2022, the city had an estimated population of 779,049, and a population density of 1,072 persons per km<sup>2</sup>. The total area is 726.45 square kilometres (280.48 sq mi). Greater Niigata, the Niigata Metropolitan Employment Area, has a GDP of US\$43.3 billion as of 2010.

## Weather and clothing

September is one of the best months to travel in Niigata, Japan. The average temperature in Niigata in September for a typical day range from a high of 78°F (26°C) to a low of 69°F (20°C). You would describe it as pleasantly warm with a gentle breeze. Humidity in Niigata is moderate with an average amount of 73% (relative humidity), which could be described as humid but cool. Niigata has 12.5 hours of daylight, with sunrise at 5:24 AM and sunset at 5:54 PM and there is a 41% chance of rain on an average day. With the temperature and raining rate in mind, most people would dress in something very light like a sleeveless shirt and remember to bring an umbrella.

# About Niigata

## Currency

The current exchange rate is US\$1 = Yen150 approximately. Most foreign currencies can be exchanged at banks. You may also withdraw local currency with ATM in convenient stores using your bank cards. Travelers' cheques and major credit cards are widely accepted.

## Electricity

The voltage used throughout the country in Japan is 100 volts. There are two kinds of frequencies in use—50 Hertz in eastern Japan (including Niigata) and 60 Hertz in western Japan (including Nagoya, Kyoto and Osaka). Power plugs and sockets (outlets) of type A and type B are used.



Applied-Energy.org



Advancing Energy Solutions for a Sustainable Future

# **16th** International Conference on Applied Energy

