



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



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). 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

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H. Li, Sweden

S. Deng, Qatar

ICAE2024, Sept 1-5, 2024							
Program at a Glance							
Tokyo Time		Day 0: Sept 1					
13:00-17:00		Registration and Reception (Venue: International Conference Room)					
Tokyo Time		Day 1: Sept 2					
09:00-09:30		Opening and Welcome speech (Venue: International Conference Room)					
09:30-10:00		Keynote 1 (Venue: International Conference Room) Geospatial Approaches to Modeling and Simulating Urban Building Energy Efficiency and Mitigation Measures Speaker: Prof. Qihao Weng Moderator: Prof. Eva Thorin					
10:00-10:20		Tea/Coffee break (Venue: Corridor, 4F)					
10:20-10:50		Keynote 2 (Venue: International Conference Room) Transport of CO ₂ and Hydrogen – Two Mostly Underestimated Aspects of Sustainable Energy- and Process-Technologies Speaker: Prof. Roland Span Moderator: Prof. Eva Thorin					
10:50-11:00		Photo Session					
Session Room	302A	302B	303	304	305	306	307
Session Code	1-A1	1-B1	1-C1	1-D1	1-E1	1-F1	1-G1
Session Chair	Amir Vadiee	Behrouz Nourozi	Fredrik Wallin	Yuriko Iida	Susmita Koley	Daotong Chong	Roy Dibyendu
11:00-11:15	68	209	187	225	28	144	115
11:15-11:30	73	48	65	214	196	51	21
11:30-11:45	290	139	283	268	55	140	66
11:45-12:00	87	368	275	235	109	141	210
12:00-13:30		Lunch Break (Venue: International Conference Room)					
13:30-17:00		Young Scientist Workshop (International Conference Room) Advancing Integrated Industrial Energy Systems for Decarbonization: From Research to Real-world Implementation Session Chair: Prof. Zhigang Li					
14:00-15:00		Panel 1 (Venue: 301) Integrated Simulation System using Urban Digital Twin for Smart Energy Management Session Chair: Prof. Yoshiki Yamagata					
Session Room	302A	302B	303	304	305	306	307
Session Code	1-A2	1-B2	1-C2	1-D2	1-E2	1-F2	1-G2
Session Chair	Xiaohui Yu Alalea Kia	Hongxing Yang Zaoxiao Zhang	Zhenjia Lin Xiaoping Fu	Xi Luo Koji Tokimatsu	Sai Yagnamurthy Xin Jin	Junjie Yan Anders Avelin	Hailong Li Qing Yu
13:30-13:45	170	512	442	74	95	47	409
13:45-14:00	513	103	215	30	342	122	91
14:00-14:15	241	57	274	265	418	59	173
14:15-14:30	120	403	322	323	157	125	92
14:30-14:45	14	493	208	150	281	183	278
14:45-15:00	251	497	359	23	332	13	195
15:00-15:30		Tea/Coffee break (Venue: Corridor, 3F)					
Session Room	302A	302B	303	304	305	306	307
Session Code	1-A3	1-B3	1-C3	1-D3	1-E3	1-F3	1-G3
Session Chair	Juan C. Gonzalez Palencia Huan Zhao	Jarek Milewski Ying Du	Mir Nahidul Ambia Minda Ma	Wenchao Shi Xi Luo	Haiyan Lei Binbin Yu	Xiaohui Yu Zhenjia Lin	Jingchun Feng Juan C. Gonzalez Palencia
15:30-15:45	522	256	262	352	327	440	121
15:45-16:00	436	81	337	172	44	414	341
16:00-16:15	186	427	221	264	388	76	90
16:15-16:30	395	114	243	361	175	212	4
16:30-16:45	102	310	250	52	223	229	118
16:45-17:00	435	480	360	433	25	190	179
18:30-21:00		Banquet (Venue: Main Hall) (17: 30 Door Opening, Start Serving Drinks)					
Tokyo Time		Day 2: Sept 3					
09:00-09:30		Keynote 3 (Venue: International Conference Room) Development of solar photovoltaic vacuum glass insulation layer of buildings Speaker: Prof. Hongxing Yang Moderator: Prof. Yoshiki Yamagata					
09:30-10:00		Keynote 4 (Venue: International Conference Room) The Cost Saving, Climate, and Health Effects of Global Solar PV Supply Chains Speaker: Dr. Gang He Moderator: Prof. Yoshiki Yamagata					
10:00-10:30		Tea/Coffee break (Venue: Corridor, 4F)					
Session Room	302A	302B	303	304	305	306	307
Session Code	2-A1	2-B1	2-C1	2-D1	2-E1	2-F1	2-G1
Session Chair	Xinhai Yu Huan Zhao	Zaoxiao Zhang Hao Xu	Peng Li Tekai Eddine Khalil Zidane	Xiaodan Shi Qing Yu	Rebei Bel Fdhila Binbin Yu	Argyrios Anagnostopoulos	Chaoyang Wang Wenchao Shi
10:30-10:45	188	137	178	130	105	228	362
10:45-11:00	181	247	107	384	331	63	336
11:00-11:15	203	193	83	443	211	42	79
11:15-11:30	356	177	244	370	127	86	89
11:30-11:45	200	300	67	148	169	84	69
11:45-12:00	34	116	392	205	280	129	321
12:00-13:30		Lunch Break (Venue: International Conference Room)					
Session Room	302A	302B	303	304	305	306	307
Session Code	2-A2	2-B2	2-C2	2-D2	2-E2	2-F2	2-G2

Session Chair	Hongxing Yang Tekal eddine Khalil Zidane	Xi Luo Kasuni Guruvita	Amir Vadiee Takahiro Yoshida	Fredrik Wallin Yi Chen	Rebei Bel Fdhila Binbin Yu	Dmitry Pashchenko Hao Xu	Alessio Tafone Yao Yao
13:30-13:45	132	32	449	27	133	259	314
13:45-14:00	82	135	301	77	54	15	149
14:00-14:15	29	232	334	106	1	306	194
14:15-14:30	171	351	254	273	138	365	192
14:30-14:45	358	390	272	450	97	270	343
14:45-15:00	128	438	437	207	9	400	231
15:00-15:30	Tea/Coffee break (Venue: Corridor, 3F)						
15:30-17:00	Editorial Board Meeting (Venue: 301)						
Session Room	302A	302B	303	304	305	306	307
Session Code	2-A3	2-B3	2-C3	2-D3	2-E3	2-F3	2-G3
Session Chair	Roland Span Xiaomei Wu	Zhiling Guo Hao Xu	Anders Avelin Xi Luo	Biyong Yu Takahiro Yoshida	Konstantinos Kyprianidis Junwei Liu	Shuai Yao Ying Du	Ziwei Bai Xiaodan Shi
15:30-15:45	252	80	345	56	319	71	253
15:45-16:00	75	85	472	269	258	204	31
16:00-16:15	373	119	218	510	153	237	421
16:15-16:30	386	123	394	482	328	455	311
16:30-16:45	348	346	309	182	158	62	146
16:45-17:00	124	226	163	416	155	20	199

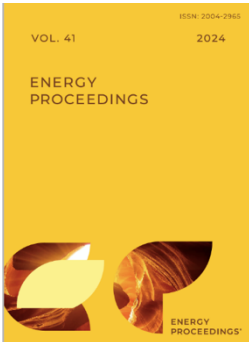
Tokyo Time	Day 3: Sept 4						
09:00-10:00	Panel 2 (Venue: 301) Carbon-Neutral City Energy System Session Chair: Prof. Jie Yan Session Co-Chair: Mr. Chao Liu						
Session Room	302A	302B	303	304	305	306	307
Session Code	3-A1	3-B1	3-C1	3-D1	3-E1	3-F1	3-G1
Session Chair	Takahiro Yoshida	Zhiling Guo	Xiaodan Shi Junwei Liu	Jidong Kang Zhenjia Lin	Kasuni Guruvita Huan Zhao	Wenchao Shi	Yao Yao Yuntian Chen
09:00-09:15	46	49	213	166	271	371	459
09:15-09:30	37	326	174	397	26	219	469
09:30-09:45	39	60	242	458	316	439	504
09:45-10:00	285	315	152	43	454	320	515
10:00-10:15	483	99	495	420	396	176	276
10:15-10:30	288	485	445	325	142	230	448
10:30-11:00	Tea/Coffee break (Venue: Corridor, 3F)						
Session Room	301	302A	302B	303	304	305	306
Session Code	3-A2	3-B2	3-C2	3-D2	3-E2	3-F2	3-G2
Session Chair	Takuro Kobashi Dimitri Pinel	Roland Span Junwei Liu	Takahiro Xiaomei Wu	Koji Tokimatsu Jidong Kang	Alalea Kia Xiao Peng	Yuntian Chen Ottorino Veneri	Chunyang Zhao Yao Yao
11:00-11:15	36	8	486	255	112	24	431
11:15-11:30	189	206	456	277	257	453	423
11:30-11:45	376	94	520	249	387	245	2
11:45-12:00	185	375	236	291	7	503	98
12:00-12:15	317	131	487	292	303	516	88
12:15-12:30	432	126		446	329	523	111
12:30-13:30	Lunch Break (Venue: International Conference Room)						

Session Room	301	302A	302B	303	304	305	306	307
Session Code	3-A3	3-B3	3-C3	3-D3	3-E3	3-F3	3-G3	3-H3
Session Chair	Takuro Kobashi Dimitri Pinel	Roland Span Zhiling Guo	Xiaomei Wu	Xiao Peng Jidong Kang	Alalea Kia	Ottorino Veneri	Chunyang Zhao	Qing Yu
13:30-13:45	499	452	377	494	484	151	246	197
13:45-14:00	507	406	489	476	64	233	136	145
14:00-14:15	408	451	96	434	367	488	289	296
14:15-14:30	474	407	41	473	425	419	16	61
14:30-14:45	500	404	464	502	217	496	505	266
14:45-15:00	297	389	101	465	104		216	
15:00-15:30	Tea/Coffee break (Venue: Corridor, 3F)							

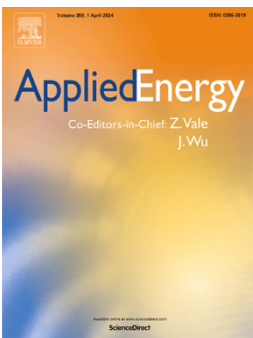
1 Renewable Energy
2 Clean Energy Conversion Technologies
3 Intelligent & Flexible System
4 Energy Management, Policy, Economics and Sustainability
5 Mitigation Technologies
6 Energy Science
7 Energy Storage
8 Hydrogen Energy

Conf. proceedings and preprints

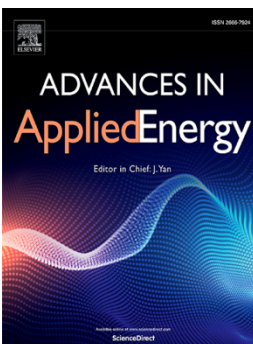
All presented papers will be published in Scopus-Indexed Energy Proceedings. Selected papers will be recommended for the further consideration of special issues in Applied Energy, Advances in Applied Energy and Energy360.



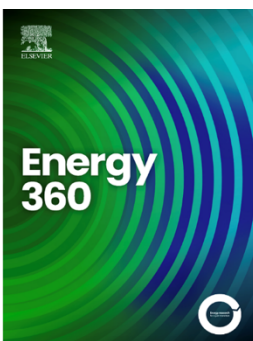
Energy Proceedings is a peer-reviewed, open-access high-quality serial publication with bimonthly/quarterly releases, currently 5-6 volumes annually. Energy Proceedings covers a broad field of multidisciplinary subjects in energy sciences and technologies. This includes energy-related economics and social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

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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

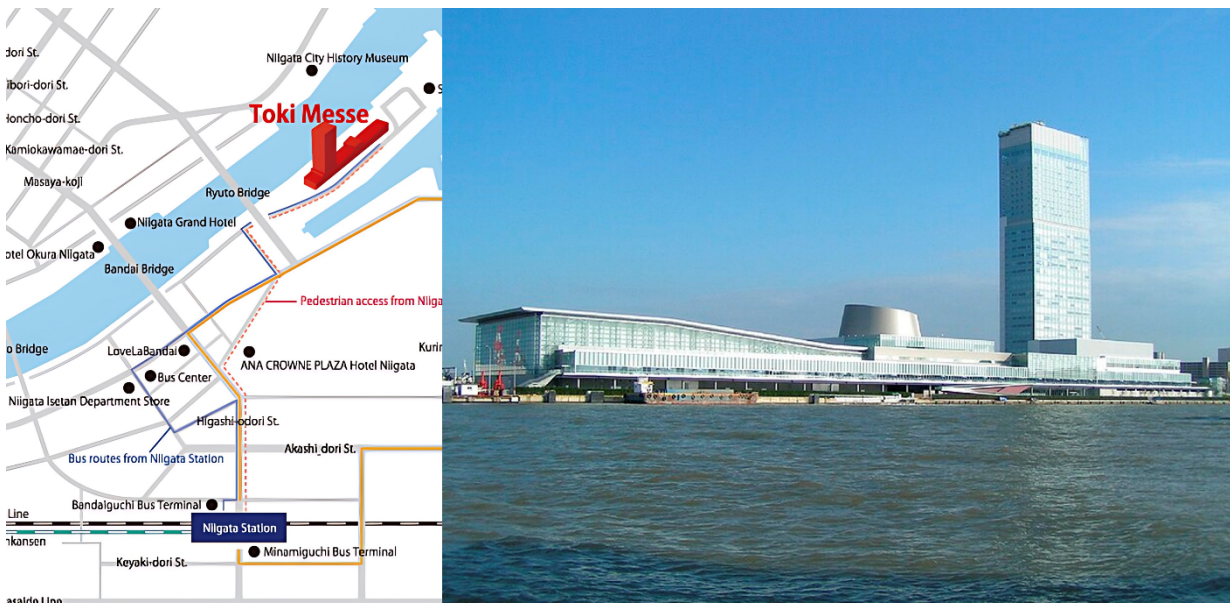
General Information

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) for registration outside of the official registration time.

General Information

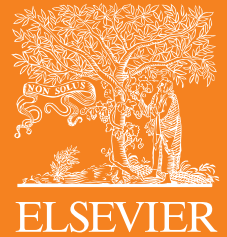
Invitation Letter & Visa application

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 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



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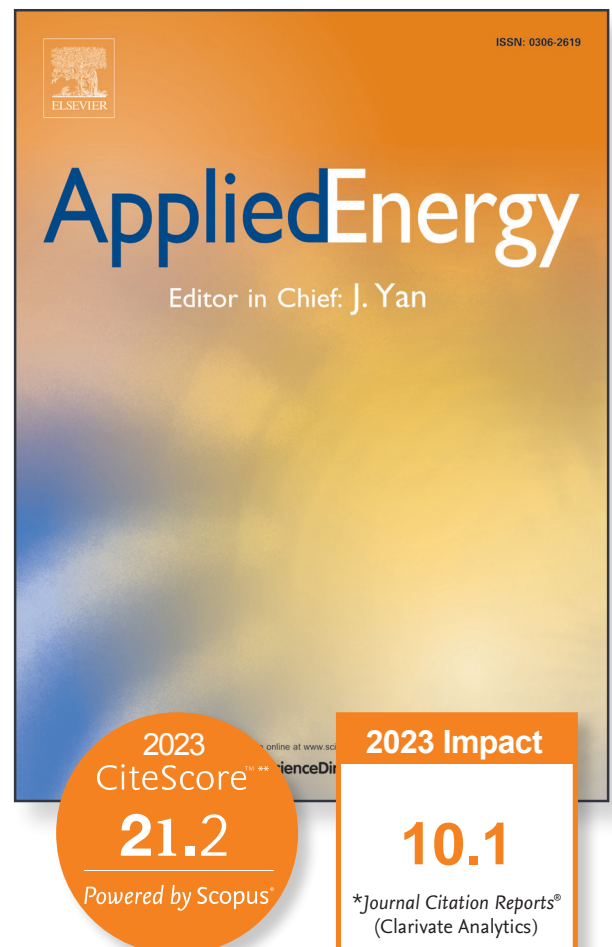
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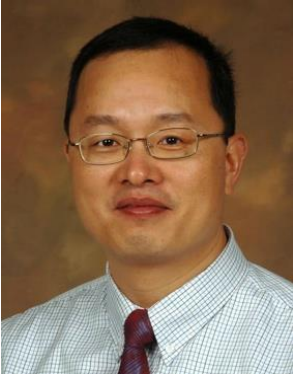
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Keynote Speakers



Prof. Qihao Weng

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

Moderator:

Prof. 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

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

Moderator:

Prof. Eva Thorin

Mälardalen University Future
Energy Center

Sept 2nd, 2024

10:20-10:50

International Conference Room

Transport of CO₂ 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 CO₂-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 CO₂ 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 CO₂ 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 CO₂ 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:

Prof. 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/(m²K), which is 70.8% less than that of traditional insulated walls (0.79 W/(m²K)). 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 CO₂ 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:

Prof. 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

Abstract

Achieving carbon neutrality requires deploying renewable energy at unprecedented speed and scale, a process that relies on an efficient global clean energy supply chain. However, the pandemic, geopolitical tensions, and climate-driven events, present significant risks to the stability of the global clean energy supply chains. This presentation will discuss the changing landscape and evolving debate over clean energy global supply chains, by analyzing the costs implication, carbon savings, air pollution and human health benefits of clean energy global supply chains, using solar PV as an example. In addressing these challenges and maximizing the benefits, there is a pressing need for a commonly agreed framework for a just, resilient, and sustainable clean energy global 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.

Panel 1: Integrated Simulation System using Urban Digital Twin for Smart Energy Management

Date: September 2nd, 2024

Time: 14:00 pm-15:00 pm

Venue: Room 301

Session Chair: Prof. Yoshiki Yamagata

Panelists: Prof. Yoshiki Yamagata, Keio University, Japan

Mr. Hideo TAKAHASHI, Keio University, Japan

Mr. Hiroshi NAKAGAWA, Keio University, Japan

Mr. Tomohiro AKUTSU, Keio University, Japan

Mr. Yoshiyuki KIMURA, Keio University, Japan

Mr. Atsuo HONDA, OSAKA GAS, Japan

Ms. Fumika HASHIWAKI, OSAKA GAS, Japan

Ms. Nozomi MATSUMOTO, OSAKA GAS, Japan



Prof. Yoshiki Yamagata

Future Co- Creation Lab

Graduate School of System Design and Management

Keio University

Description:

Urban decarbonization is discussed with Keio University (SDM) and Osaka Gas researchers. Join us as we explore carbon-neutral pathways in urban areas. In the first seminar, we will delve into urban studies and uncover potential avenues for future research proposal by Keio University. In the second part, we will put the spotlight on urban decarbonization initiatives by Osaka Gas.

Panel Session

Agenda:

14:00-14:05	Opening Session
14:05-14:40	Topic: Urban Decarbonization Initiatives in Japan
5 minutes	Prof. Yoshiki Yamagata (Keio University, School of System Design and Management) Title: IIASA-Japan Joint Research Project: Cities Transformation Simulating Future Urban Systems using Digital Twin/Bigdata/AI
5 minutes	Mr. Hideo TAKAHASHI (Keio University, School of System Design and Management) Title: Achieving Decarbonization and Employee Well-Being in Urban Business Districts: The Nihonbashi Initiative
5 minutes	Mr. Hiroshi NAKAGAWA (Keio University, School of System Design and Management) Title: Environmental Behavior Design for Urban Living People
5 minutes	Mr. Tomohiro AKUTSU (Keio University, School of System Design and Management) Title: Serious Game as a Tool for Human Dynamics Simulator
5 minutes	Mr. Yoshiyuki KIMURA (Keio University, School of System Design and Management) Title: Use of GIS 3.0 for simulating the future cities
14:40-14:55	Topic: Daigas Group's vision for the future
	Prof. Yixun Xue Ms. Fumika HASHIWAKI Ms.Nozomi MATSUMOTO (OSAKA GAS) <ul style="list-style-type: none">• Daigas Group's aspiration for the future<ul style="list-style-type: none">• Energy Management System<ul style="list-style-type: none">• e-methane• Actions at the Osaka-Kansai Expo
14:55-15:00	Q&A

Panel Session

Speakers' Bio:

Name	Title/ Department
Yoshiki YAMAGATA	Professor, PhD Graduate School of System Design and Management, Keio University
Hideo TAKAHASHI	President, IKEDA SCIENTIFIC Co., Ltd.
Atsuo HONDA	Senior Research Fellow, DX Strategy Department, OSAKA GAS Co., Ltd.
Fumika HASHIWAKI	DX Strategy Department, OSAKA GAS Co., Ltd.
Nozomi MATSUMOTO	Manager, Corporate Planning Department, OSAKA GAS Co., Ltd.
Hiroshi NAKAGAWA	Project Associate Professor, Graduate School of System Design and Management, Keio University (Leader, Hakuodo Institute of Activation Design, Hakuodo Inc.)
Tomohiro AKUTSU	Research Fellow, First year of Doctoral Course, Graduate School of System Design and Management, Keio University
Yoshiyuki KIMURA	Research Fellow, First year of Doctoral Course, Graduate School of System Design and Management, Keio University

Panel Session

Panel 2: Carbon-Neutral City Energy System

Date: September 4th, 2024

Time: 09:00 am-10:00 am

Venue: Room 301

Session Chair: Prof. Jie Yan

Session Co-Chair: Mr. Chao Liu

Panelists: Prof. Jie Yan, North China Electric Power University, China

Prof. Haoran Zhang, The University of Tokyo, Japan

Mr. Chao Liu, China Electric Power Research Institute, China

Prof. Minda Ma, Chongqing University, China & Lawrence Berkeley National Laboratory, USA

Dr. Yuntian Chen, Eastern Institute of Technology, Ningbo, China

Dr. Qing Yu, The University of Tokyo, Japan



Prof. Jie Yan
School of New Energy
North China Electric Power University



Mr. Chao Liu
Carbon Neutrality and Standardization Department
China Electric Power Research Institute

Panel Session

Description:

Carbon neutrality stands as the inevitable pathway towards the survival and sustainable development of all humanity. Given that urban human activities contribute to 75% of global energy-related carbon emissions, they become the focal point in achieving carbon neutrality.

Urban energy consumption and its associated carbon emissions are intimately tied to population activities. The daily life, work, and travel of urban dwellers all require energy. Individuals with diverse genders, ages, and occupations may exhibit distinct lifestyles and energy usage patterns, such as travel times, parking locations, and responses to weather changes. All this population information can be extracted from trajectory data.

Gaining insight into the flexibility of energy consumption behaviors driven by population activities and considering the characteristics of renewable energy resources can effectively elevate the proportion of renewable energy consumption and mitigate carbon emissions.

This panel centers on a carbon-neutral energy system, particularly leveraging population trajectory big data to achieve optimal carbon-neutral energy system performance. The research areas may encompass: identifying and predicting energy use flexibility, carbon tracking and calculation, optimization of a carbon-neutral energy system, and more.

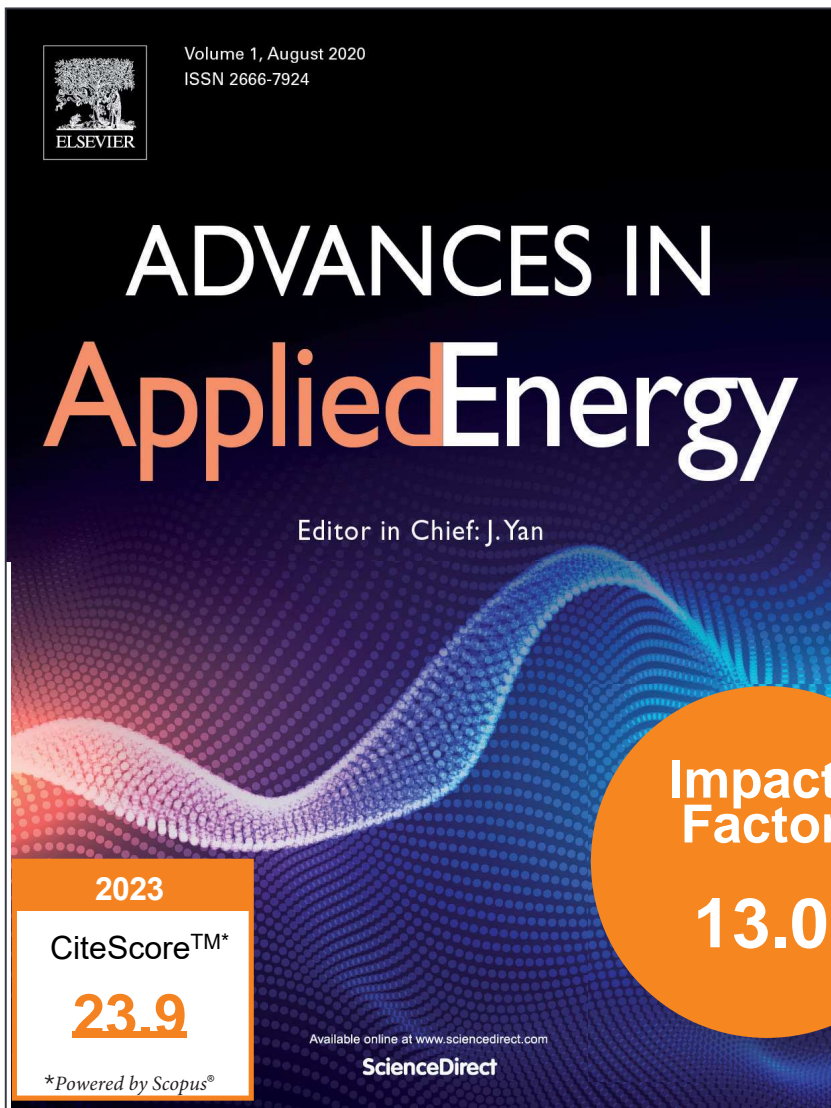
These research efforts will empower governments and power grids to better guide the population in actively adapting to the inherent variability of renewable energy, increasing the proportion of renewable power generation, and ultimately achieving a reduction in carbon emissions.

Panel Session

Agenda:

09:00-09:05	Opening Session
09:05-09:55	Topic: Carbon-Neutral City Energy System
10 minutes	Prof. Jie Yan (North China Electric Power University, School of New Energy) Title: Human-Source-Load-Carbon Synergy Optimization Technology for Carbon Neutral City Energy System
10 minutes	Mr. Chao Liu (China Electric Power Research Institute, Carbon Neutrality and Standardization Department) Title: Research and Practice on Product Carbon Footprint of Power Equipment
10 minutes	Prof. Minda Ma (Chongqing University & Lawrence Berkeley National Laboratory) Title: Building floorspace and stocks worldwide: Insights, Pathways, and Challenges
10 minutes	Mr. Yuntian Chen (Eastern Institute of Technology, Ningbo) Title: Physics-based Data-driven Power Forecasting
10 minutes	Mr. Qing Yu (The University of Tokyo, Center for Spatial Information Science) Title: Global Estimation of Building-Integrated Facade and Rooftop Photovoltaic Potential by 3D Building Data
09:55-10:00	Q&A

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Mälardalen University, Sweden*

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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: International Conference Room

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

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

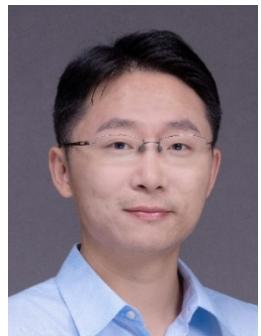


Panelist 2:

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

Dr Tong Zhang is a lecturer at the University of Leeds. She received a B.E. degree in Electrical Engineering and its Automation 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:

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 APEN/ADAPEN 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 3th 15:30-17:00
Location	Room 301

We look forward to your valuable participation in the meeting.

Best Regards,

ICAE committee

Advances in Applied Energy

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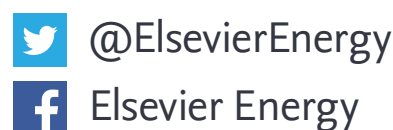
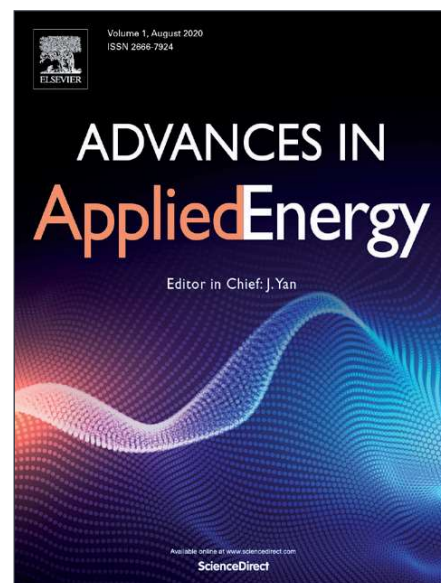
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- Systems characteristics: integrated energy systems such as industry, transport, and buildings; renewable energy; advanced conversion technologies; energy storage; emission mitigations; smart grids and mini/micro grids; distributed energy systems; 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)



Day 1: Sept. 2

09:00-09:30	Openning and Welcome speech Venue: International Conference Room			
09:30-10:00	Keynote 1 Geospatial Approaches to Modeling and Simulating Urban Building Energy Efficiency and Mitigation Measures Speaker: Prof. Qihao Weng Moderator: Prof. Eva Thorin Venue: International Conference Room			
10:00-10:20	Tea/Coffee Break Corridor, 4F			
10:20-10:50	Keynote 2 Transport of CO2 and Hydrogen – Two Mostly Underestimated Aspects of Sustainable Energy- and Process-Technologies Speaker: Prof. Roland Span Moderator: Prof. Eva Thorin Venue: International Conference Room			
10:50-11:00	Photo Session			
12:00-13:30	Lunch Break Venue: International Conference Room			
13:30-17:00	Young Scientist Workshop Advancing Integrated Industrial Energy Systems for Decarbonization: From Research to Real-world Implementation Session Chair: Prof. Zhigang Li Venue: International Conference Room			
14:00-15:00	Panel 1 Integrated Simulation System using Urban Digital Twin for Smart Energy Management Session Chair: Prof. Yoshiki Yamagata Venue: 301			
Session Room: 302A				
Track 1 Renewable Energy Session Chair: Amir Vadiee				
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	Actual Available Rooftop Areas for Solar Photovoltaic Using a Two-Stage Segformer based 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	Lunch Break Venue: International Conference Room			
Track 8 Hydrogen Energy Session Chair: Xiaohui Yu, Alalea Kia				
13:30-13:45	170	Hang Yuan, Hongguang Zhu, Longlong Lei	Cost-Effective Hydrogen Storage Materials: Utilizing Biogas Slurry to Synthesize High-Performance Hollow porous Carbon Spheres	302A-1-A2-170
13:45-14:00	513	Shuaishuai Yuan	Simulation of hydrogen elimination using wire mesh coated by Pt/Al ₂ O ₃	302A-1-A2-513
14:00-14:15	241	Tianhong Zhang, Masahiro Mae, Ryuji Matsuhashi	Exploring Japan's Domestic Green Hydrogen Production Strategy in the 2030s	302A-1-A2-241
14:15-14:30	120	Yoshihide Suwa, Kenji Yonezawa, Yoshiyuki Ono, Hiroshi Hirata, Chisato Tambara, Yuichi Tabata, Hiroya Hagio	Safe application of high-pressure hydrogen gas	302A-1-A2-120
14:30-14:45	14	Yiming Zhou	Enhancing the support hydrogen spillover by W doping for the efficient hydrogenation of dibenzyltoluene	302A-1-A2-14
14:45-15:00	251	Amin Lahnaoui, Sandra Venghaus, Wilhelm Kuckshinrichs	Estimating Employment Potential from Green Hydrogen Production: A Regional Analysis for Selected Regions in Africa	302A-1-A2-251
15:00-15:30	Tea/Coffee Break Corridor, 3F			

Day 1: Sept. 2

Track 4 Energy Management, Policy, Economics and Sustainability Session Chair: Juan C. Gonzalez Palencia, Huan Zhao				
15:30-15:45	522	Yuriko Iida	Plastic-Free Beverage Distribution: A Data-Driven Approach to CO2 Reduction and Environmental Scoring	302A-1-A3-522
15:45-16:00	436	Laura Andolf, Boris Ortega	Smart Choices: The Influence of Energy Literacy on Energy Technology Adoption	302A-1-A3-436
16:00-16:15	186	Zhenyu Yang, Hideomi Gokon	Assessing Regional Resilience of Different Land Use Types During Snowstorms Using Mobile Data	302A-1-A3-186
16:15-16:30	395	Songyuan Liu, Mei Wang, Peng Zhou	Stylized agent-based modeling on the power industry and carbon emission trading system: from the perspective of Chinese power enterprises	302A-1-A3-395
Track 6 Energy Science				
16:30-16:45	102	Yan Gao, Tao Fang	Gram-scale synthesis of 1T-MoS ₂ as excellent electrocatalytic catalyst for hydrogen evolution	302A-1-A3-102
16:45-17:00	435	Agung Tri Wijayanta, Mohammad Zolfagharroshan, Minghan Xu, Muhammad Saad Khan Tareen, Ahmad Zueter, Kim Leong Liaw, Agus Sasmito	Repurposing Abandoned Hydrocarbon Wells for Geothermal-Driven Electricity Generation in Indonesia	302A-1-A3-435
18:30-21:00	Banquet Venue: Main hall (17: 30 Door Opening, Start Serving Drinks)			
Session Room: 302B				
Track 2 Clean Energy Conversion Technologies Session Chair: Behrouz Nourozi				
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, Qiu Hua 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	Part-load performance analysis of an intercooled and recuperative gas turbine system 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	Lunch Break Venue: International Conference Room			
Track 8 Hydrogen Energy Session Chair: Hongxing Yang, Zaoxiao Zhang				
13:30-13:45	512	Mingliang Bai, Wenjiang Yang, Zibing Qu, Ruopu Zhang, Juzhuang Yan	Performance analysis of fuel cell hybrid-electric regional aircraft based on hydrogen/helium co-cooling	302B-1-B2-512
13:45-14:00	103	Shiyuan Wang	Ultra-high activity catalysts based on Ni-Al layered double hydroxides for N-Ethylcarbazole hydrogenation	302B-1-B2-103
14:00-14:15	57	Yan Xiao, Xiangyang Zhou, Bing Li, Pingwen Ming, Cunman Zhang	Catalyst layer design for high reversal and free radical tolerance membrane electrode assemblies	302B-1-B2-57
14:15-14:30	403	Ruhang Zhang	Design and optimization of segmented reformer based on NSGA-II optimization algorithms	302B-1-B2-403
14:30-14:45	493	Zhipeng Hou, Fengxiang Chen, Yafeng Guo, Huitao Zhang, Su Zhou	Development of a Hydrogen-based Microgrid Test Bench with Level of Hydrogen Estimator	302B-1-B2-493
14:45-15:00	497	Haowen Shen, Fengxiang Chen	Model predictive control of PEMFC air supply system based on Kalman state estimation of unmeasurable parameters	302B-1-B2-497
Track 8 Hydrogen Energy Session Chair: Jarek Milewski, Ying Du				
15:00-15:30	Tea/Coffee Break Corridor, 3F			
15:30-15:45	256	Daozeng Yang, Bing Li	The Effect of Solvated Ionomers on Coating Appearance in Wet Process Electrode of PEMFC	302B-1-B3-256
15:45-16:00	81	Xiaomei Yang, Piqiang Tan, Xiaoyang Liu, Congfeng Tian, Diming Lou, Zhiyuan Hu	Analysis operational characteristics and potential faults of fuel cells in fuel cell-battery powered bulldozers	302B-1-B3-81

Day 1: Sept. 2

16:00-16:15	427	Bin Gao, Yuekuan Zhou	A Sizing Approach on an Integrative PV-Electrolyzer-Battery-SOFC-Absorption Chiller CCHP System under Integral System Degradation	302B-1-B3-427
Track 7 Energy Storage				
16:15-16:30	114	Hua-Yang Liu, Jian-Peng Chen, Bei-Cheng Qu, You-Rong Li	Numerical simulation of PCM melting characteristics in a rectangular container with non-uniform longitudinal fins added at the bottom	302B-1-B3-114
16:30-16:45	310	Argyrios Anagnostopoulos, Theofilos Xenitopoulos, Panos Seferlis, Yulong Ding	Optimizing Packed Bed Latent Heat Storage Systems: A Machine Learning and Metaheuristic Approach	302B-1-B3-310
16:45-17:00	480	Adil Muhammed, S. Jayanti	Plant-level performance of a reversible solid oxide cell-based stack with H ₂ -H ₂ O-O ₂ and H ₂ -H ₂ O-Air system for a renewable energy-based microgrid	302B-1-B3-480
18:30-21:00	Banquet Venue: Main hall (17: 30 Door Opening, Start Serving Drinks)			
Session Room: 303				
Track 3 Intelligent & Flexible System Session Chair: Fredrik Wallin				
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	283	Ali Soleimani, Reza Malekian, Paul Davidsson	A Model Predictive Control Algorithm for Cost Optimization of a Building in Hybrid Heating System	303-1-C1-283
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	Lunch Break Venue: International Conference Room			
Track 3 Intelligent & Flexible System Session Chair: Zhenjia Lin, Xiaopeng Fu				
13:30-13:45	442	Xiaopeng Fu, Jiaming Wang, Peng Li*, Jiang Yu, Manjiang Li, Chengshan 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	303-1-C2-274
14:15-14:30	322	Yujiro HIRANO, Takahiro YOSHIDA, Yoshiki YAMAGATA, Yukiko YOSHIDA	Energy Management Simulation for a Local Energy Supply System	303-1-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	303-1-C2-208
14:45-15:00	359	Zonghan Li, Chunyan Wang, Yi Liu	Grounding Generative AI for Nudging Campus Energy and Water Conservation Behaviors	303-1-C2-359
15:00-15:30	Tea/Coffee Break Corridor, 3F			
Track 3 Intelligent & Flexible System Session Chair: Mir Nahidul Ambia, Minda Ma				
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	337	Rahul Kumar Sharma, PDibakar Rakshit, Man Pun Wan	Innovative HVAC Solutions: Impact of Nanoparticles and Fins on PCM incorporated system for Peak Load Management	303-1-C3-337
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

Day 1: Sept. 2

Track 6 Energy Science				
Session Chair: Mir Nahidul Ambia, Minda Ma				
16:45-17:00	360	Zhende Li, Jing Ding, Jianfeng Lu, Weilong Wang, Xiaolan Wei	Efficient dry reforming of methane realized by photoinduced acceleration of oxygen migration rate	303-1-C3-360
18:30-21:00	Banquet Venue: Main hall (17: 30 Door Opening, Start Serving Drinks)			
Session Room: 304				
Track 4 Energy Management, Policy, Economics and Sustainability				
Session Chair: Yuriko Iida				
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	214	Jiajing GAO, Jialin Wu, Yi Zhang	Usage behavior analysis of household appliances based on a panel study in Shenzhen, China	304-1-D1-214
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	Lunch Break Venue: International Conference Room			
Track 4 Energy Management, Policy, Economics and Sustainability				
Session Chair: Xi Luo, Koji Tokimatsu				
13:30-13:45	74	Fanshuai Hu, Dequn Zhou, Qingyuan Zhu, Xingchen Li	The Interaction Effects of Renewable Portfolio Standards and Carbon Emission Trading: Overlapping or Non-overlapping incentive?	304-1-D2-74
13:45-14:00	30	Tomohiro Akutsu, Yoshiki Yamagata	Empirical Evaluation of Negotiation Behavior Using P2P Energy Trading Game	304-1-D2-30
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	Tea/Coffee Break Corridor, 3F			
Track 4 Energy Management, Policy, Economics and Sustainability				
Session Chair: Wenchao Shi, Xi Luo				
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	433	Xiangying Shan, Weichao Yu, Kai Wen, Jing Gong	Reliability-Based Optimization of Natural Gas Pipeline Network System Flow Rate Allocation Considering Pipeline Load Factor	304-1-D3-433
18:30-21:00	Banquet Venue: Main hall (17: 30 Door Opening, Start Serving Drinks)			

Day 1: Sept. 2

Session Room: 305

Track 6 Energy Science Session Chair: Susmita Koley

Time	Paper ID	Author	Paper Title	Code
11:00-11:15	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	305-1-E1-28
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

Lunch Break

Venue: International Conference Room

Track 6 Energy Science Session Chair: Sai Yagnamurthy, Xin Jin

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	418	Qing Wang, Xinfang Ma, Junjie Li, Yang Liu, He Ma	Study on the interference law of inter-well fracturing and prevention of interference by fracture-opening temporary plugging fracturing	305-1-E2-418
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

Tea/Coffee Break

Corridor, 3F

Track 6 Energy Science Session Chair: Haiyan Lei, Binbin Yu

15:30-15:45	327	Zhuantao He, Chunmei Wu, Wei Zhang, Yourong Li	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	223	Sagar Vashisht, Dibakar Rakshit	Comparative analysis of passive cooling strategies for enhanced li-ion cell thermal management	305-1-E3-223
16:45-17:00	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-E3-25

Banquet

Venue: Main hall

(17: 30 Door Opening, Start Serving Drinks)

Session Room: 306

Track 2 Clean Energy Conversion Technologies Session Chair: Daotong Chong

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

Day 1: Sept. 2

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	Lunch Break Venue: International Conference Room			
Track 2 Clean Energy Conversion Technologies Session Chair: Junjie Yan, Anders Avelin				
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 CO2 separator for various industrial exhaust emissions	306-1-F2-47
13:45-14:00	122	Ziyang Wang, Masahiro Mae, Ryuji Matsuhashi	Pilot Study on a Low-Energy Wearable Air-Conditioner Based on A Novel Water-Electricity Hybrid Energy System	306-1-F2-122
14:00-14:15	59	Malleswararao Katamala, Inga Bürger, Aldo Cosquillo Mejia, Seon Tae Kim, Linder Marc	Synergies between high temperature heat pumps and salt hydrate thermochemical systems for waste heat recovery	306-1-F2-59
14:15-14:30	125	Xiang Qiu, Jingyang Hua, Chenyi Qian, Jiakuan Wang, Binbin Yu, Junye Shi, Jiangping Chen"	Experimental Study on the Design of a Refrigeration System Based on a Small scale Centrifugal Compressor with Gas Foil Bearings	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	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
15:00-15:30	Tea/Coffee Break Corridor, 3F			
Track 2 Clean Energy Conversion Technologies Session Chair: Xiaohui Yu, Zhenjia Lin				
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, Qi Yao 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, Shivaprasad Vijayalakshmi, Ugochukwu Ngwaka, Sumit Roy, Richard Williams, Andrew Smallbone, Anthony Paul Roskilly	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
18:30-21:00	Banquet Venue: Main hall (17: 30 Door Opening, Start Serving Drinks)			
Session Room: 307				
Track 5 Mitigation Technologies Session Chair: Roy Dibyendu				
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	66	Haifan Liao, Zhicheng Liang, Hongfei Hu, Haijun Wang	Utilizing Transfer Learning for Enhanced Prediction of Supercritical CO2 Critical Flows	307-1-G1-66

Day 1: Sept. 2

11:45-12:00	210	Rajat Dehury, Jitendra S. Sangwai	Pore-Scale Heterogeneity and Salinity Impacts on CO ₂ Storage in Deep Saline Aquifers: A Microfluidic and Computational Investigation	307-1-G1-210
12:00-13:30	Lunch Break Venue: International Conference Room			
Track 5 Mitigation Technologies Session Chair: Hailong Li, Qing Yu				
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	Tea/Coffee Break Corridor, 3F			
Track 5 Mitigation Technologies Session Chair: Jingchun Feng, Juan C. Gonzalez Palencia				
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 SO ₂ and NO	307-1-G3-121
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	90	Ying Dai, Biying Yu	Industrial risks assessment for the large-scale development of electric arc furnace steelmaking technology.	307-1-G3-90
16:15-16:30	4	Xin Meng, Qiang Li, Xuemei Chen	A Hierarchically Designed Superhydrophobic SiO ₂ /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, Yiqiang Li, Jianqiang Zi, Jinxin Cao, Yaqian Zhang, Xuechen Tang, Qihang Li, Xiaolong LV	Flue Gas-Assisted Steam Flooding in Heavy Oil Reservoirs: Experimental Study and Numerical Simulation	307-1-G3-179
18:30-21:00	Banquet Venue: Main hall (17: 30 Door Opening, Start Serving Drinks)			

Day 2: Sept. 3

9:00-09:30	<p align="center">Keynote 3 Development of solar photovoltaic vacuum glass insulation layer of buildings Speaker: Prof. Hongxing Yang Moderator: Prof. Yoshiki Yamagata Venue: International Conference Room</p>			
09:30-10:00	<p align="center">Keynote 4 The Cost Saving, Climate, and Health Effects of Global Solar PV Supply Chains Speaker: Dr. Gang He Moderator: Prof. Yoshiki Yamagata Venue: International Conference Room</p>			
10:00-10:30	<p align="center">Tea/Coffee Break Corridor, 4F</p>			
15:30-17:00	<p align="center">Editorial Board Meeting Venue: 301</p>			
<p align="center">Session Room: 302A</p>				
<p align="center">Track 5 Mitigation Technologies Session Chair: Xinhai Yu, Huan Zhao</p>				
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	188	Sun Yu, Li Yiqiang , Qi Huan, Cao Jinxin, Tang Xuechen	Synergistic mechanism analysis of CO ₂ -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 ₂ Dissociation on PdPt(4-n)/In ₂ O ₃ 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 ₂ capture system	302A-2-A1-200
11:45-12:00	34	Zepeng Yang, Xinwei Liao, Peng Dong, Lingfeng Zhang	Rapid Prediction of CO ₂ Flooding Attribute Distribution in 3D Heterogeneous Reservoirs Using Fourier Neural Operator	302A-2-A1-34
12:00-13:30	<p align="center">Lunch Break Venue: International Conference Room</p>			
<p align="center">Track 1 Renewable Energy Session Chair: Hongxing Yang, Tekai eddine Khalil Zidane</p>				
13:30-13:45	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-A2-132
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 ₂ to acetate in microbial electrosynthesis	302A-2-A2-29
14:15-14:30	171	Shuntao Hu, Xinli Lu, Wei Zhang, Jiali Liu, Hao Yu	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
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 align="center">Tea/Coffee break Venue: Corridor, 3F</p>			
<p align="center">Track 1 Renewable Energy Session Chair: Roland Span, Xiaomei Wu</p>				
15:30-15:45	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-A3-252
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

Day 2: Sept. 3

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
Session Room: 302B				
Track 5 Mitigation Technologies				
Session Chair: Zaoxiao Zhang, Hao Xu				
Time	Paper ID	Author	Paper Title	Code
10:30-10:45	137	Xingyu Yang, Zhongwei Li, Qiang Song	Study on the adsorption of SO ₂ by activated carbon in the low flue gas temperature range	302B-2-B1-137
10:45-11:00	247	Alessio Tafone	Comprehensive thermo-economic optimization of a retrofit amine-based carbon capture process applied to a pulverized coal-fired power plant	302B-2-B1-247
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 ₂ 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 ₂ 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 ₂ channeling for intelligent early warning based on a transfer learning framework	302B-2-B1-300
11:45-12:00	116	Haiwei Zuo, Shenglai Yang, Yulong Dang, Qidong Lian, Jing Li	Study on the Effect of CO ₂ -Brine-Rock Interactions on Reservoirs during the CO ₂ Geological Storage	302B-2-B1-116
12:00-13:30	Lunch Break Venue: International Conference Room			
Track 1 Renewable Energy				
Session Chair: Xi Luo, Kasuni Guruvita				
13:30-13:45	32	Fengqi You, Nathan Preuss	Impact of Pyrolyzed Manure Bio-oil on Global Refined Liquid Production in 2050	302B-2-B2-32
13:45-14:00	135	Longlong Lei, Hang Yuan, Hongguang Zhu, Fanghui Pan, Fulu Lu	A preliminary study of C@Fe ₃ O ₄ for gas separation of CH ₄ and CO ₂	302B-2-B2-135
14:00-14:15	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-B2-232
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
15:00-15:30	Tea/Coffee break Venue: Corridor, 3F			
Track 1 Renewable Energy				
Session Chair: Zhiling Guo, Hao Xu				
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	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-B3-346
16:45-17:00	226	Tianqi Ruan, Wujun Wang, Bjorn Laumert	Potential of wall-mounted solar panel in Swedish contexts	302B-2-B3-226
Session Room: 303				
Track 3 Intelligent & Flexible System				
Session Chair: Peng Li, Tekai Eddine Khalil Zidane				

Day 2: Sept. 3

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, Fenggi Si	Fault diagnosis for industrial gas turbines based on multi-fidelity data	303-2-C1-107
11:00-11:15	83	Amir Safari	Realizing Smart Energy Sharing- realSES© Platform	303-2-C1-83
11:15-11:30	244	Nan Zhou, Minda Ma	Global carbon transition of building end-use activity in the 21st century	303-2-C1-244
11:30-11:45	67	Nadia Shams, Aleena Ahmad, Naveed Arshad	Assessing the Impact of Climate Change on Long Term Load Forecasting for Electric Utilities	303-2-C1-67
11:45-12:00	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	303-2-C1-392
12:00-13:30	Lunch Break Venue: International Conference Room			
Track 3 Intelligent & Flexible System Session Chair: Amir Vadiee, Takahiro Yoshida				
13:30-13:45	449	Vinay Arya, Anirban Roy, Abhinandh Sujith, Chirodeep Bakli	Modeling Flow Dynamics of the Microchannel Heat Sinks Using Physics Informed Neural Network	303-2-C2-449
13:45-14:00	301	Rifat Al Mamun Rudro, Afroza Nahar, Md. Faruk Abdullah Al, Sohan	SPXA: 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	Coordinated control strategy within VPP for operation stability improvement under tertiary frequency modulation of internal power deviations	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
15:00-15:30	Tea/Coffee break Venue: Corridor, 3F			
Track 3 Intelligent & Flexible System Session Chair: Anders Avelin, Xi Luo				
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	472	Min-Hwi Kim, Youngsub An, Wang-Je Lee, Hong-Jin Joo, Jongkyu Kim	Energy performance investigation of renewable sharing community for smart city	303-2-C3-472
16:00-16:15	218	WU Jialin, GAO Jiajing, ZHANG Yi	A method for day-ahead prediction of household multi-appliance usage trajectory considering individual heterogeneity	303-2-C3-218
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	309	Alexandre d'Orgeval	Carbon footprint of AI data centers: a life cycle approach	303-2-C3-309
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
Session Room: 304				
Track 4 Energy Management, Policy, Economics and Sustainability Session Chair: Xiaodan Shi, Qing Yu				
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	443	Yang YU, Kui SHAN, Shengwei WANG	Global Sensitivity Analysis of Key Parameters for Data Center Power and Energy Systems Considering Reliability	304-2-D1-443
11:15-11:30	370	Weize Song; Zheng Li; Xiu Yang	Typology of low-carbon development pathways under future uncertainty	304-2-D1-370

Day 2: Sept. 3

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	Lunch Break Venue: International Conference Room			
Track 4 Energy Management, Policy, Economics and Sustainability Session Chair: Fredrik Wallin, Yi Chen				
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	77	Kechuan Dong, Qing Yu, Zhiling Guo, Hongjun Tan, Haoran Zhang, Jinyue Yan	Facade Parsing with Occlusion in the Context of Distributed Solar Photovoltaic Potential Estimation	304-2-D2-77
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 Thejes, 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	Tea/Coffee break Venue: Corridor, 3F			
Track 4 Energy Management, Policy, Economics and Sustainability Session Chair: Biying Yu, Takahiro Yoshida				
15:30-15:45	56	Shinji Yamamura, Lidia Vitanova , Yoshiki Yamagata , Doan Quang-Van	Development of Comprehensive Analysis of Area CO ₂ 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, Hao Liu , Hongjie Jia, Tianshuo Zhou	Calculation of Total Carbon Emission Capability of Integrated Energy Systems for Safe Operation	304-2-D3-269
16:00-16:15	510	Corne van Zyl, R Naidoo, Xianming Ye	Exploring the Effectiveness of SHAP for Feature Selection in National Demand Forecasting	304-2-D3-510
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	182	Haotian Shi, Yingru Zhao	A Method for Estimation of the Energy Consumption of AI Language Models	304-2-D3-182
16:45-17:00	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	304-2-D3-416
Session Room: 305				
Track 5 Energy Science Session Chair: Rebei Bel Fdhila, Binbin Yu				
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	The influence mechanism of external electric field on the control of solid-liquid interface heat flux	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	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	305-2-E1-280

Day 2: Sept. 3

12:00-13:30	Lunch Break Venue: International Conference Room			
Track 5 Energy Science Session Chair: Rebei Bel Fdhila, Binbin Yu				
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*, Qinqin 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	Tea/Coffee break Venue: Corridor, 3F			
Track 5 Energy Science Session Chair: Konstantinos Kyprianidis, Junwei Liu				
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	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-E3-258
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	328	Junfeng Shen, Zhuantao He, Qing Zhou, Chunmei Wu, Jie Song, Yourong Li	Cluster evolution and transition from adsorption to capillary condensation in nanostructure with varying wettability	305-2-E3-328
16:30-16:45	158	Zhiyu Wang, Jiahao Cheng, Chunlu Zhang	A new design framework for air-cooled condensing unit	305-2-E3-158
16:45-17:00	155	Wenjing Xing, Zhengrong Li, Heyu Wang	The impact of layered surface of 3D printed structure on heat transfer process	304-2-E3-155
Session Room: 306				
Track 7 Energy Storage Session Chair: Argyrios Anagnostopoulos, Shunmin Zhu				
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	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	306-2-F1-86
11:30-11:45	84	Sitong Li, Zhuqing Li, Yu Chen, Hua Tian, Gequn Shu	Numerical Analysis on Desorption Process of K ₂ CO ₃ 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	Lunch Break Venue: International Conference Room			
Track 8 Hydrogen Energy Session Chair: Dmitry Pashchenko, Hao Xu				
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

Day 2: Sept. 3

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 NOx production within a hydrogen catalytic combustor	306-2-F2-306
14:15-14:30	365	Tiancai Ma, Beiming Huang, Chongjiu Li, Ziheng Gu	Modeling and Analysis of the Hydrogen Circulation Structure of PEMFC System	306-2-F2-365
14:30-14:45	270	Huijin Guo, Julong Zhou, Jinghui Zhao, Beiming Huang, Ruitao Li, Tiancai Ma	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	Tea/Coffee break Venue: Corridor, 3F			
Track 8 Hydrogen Energy Session Chair: Shuai Yao, Ying Du				
15:30-15:45	71	Javiera Cepeda Kato Takuro Kobashi	Green Hydrogen and Solar EV City Concept in Santiago-Chile	306-2-F3-71
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
Session Room: 307				
Track 7 Energy Storage Session Chair: Chaoyang Wang, Wenchao Shi				
Time	Paper ID	Author	Paper Title	CodG
10:30-10:45	362	Shaobo Xi, Yuanyuan Zhang, Xiaolan Wei, Jing Ding, Jianfeng Lu	Experimental study of molten salt thermochemical heat storage system with ceramic fillers	307-2-G1-362
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
11:00-11:15	79	Xinrong Lv, Junsheng Zheng	Facile construction of ZnNi ₂ O ₄ 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 ₂ C ₂ O ₄ 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	Lunch Break Venue: International Conference Room			
Track 7 Energy Storage Session Chair: Alessio Tafone, Yao Yao				
13:30-13:45	314	Delaram Salehzadeh, Johan E. ten Elshof, Mohammad Mehrali	Boosting Thermochemical Energy Storage in Porous Potassium Carbonate Granules with Graphene Nanoplatelets	307-2-G2-314
13:45-14:00	149	Yuanji Li, Xiaohu Yang	Coupled response surface analysis and computational fluid optimization for structure of Nickel foam heat storage tank	307-2-G2-149
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

Day 2: Sept. 3

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	231	Susmita Koley, Zhiwei Ma	Evaluating design criteria of silica gel based open bed reactor to meet domestic heating demand	307-2-G2-231
15:00-15:30	Tea/Coffee break Venue: Corridor, 3F			
Track 7 Energy Storage Session Chair: Ziwei Bai, Xiaodan Shi				
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	Analysis of Chilled Water Storage Integration in Air Conditioning Systems for Dynamic PV Self-Consumption	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

09:00-10:00	<p align="center">Panel 2 Carbon Neutral City Energy System Session Chair: Prof. Jie Yan Session Co-Chair: Mr. Chao Liu Venue: 301</p>			
<p align="center">Session Room: 301</p>				
10:30-11:00	<p align="center">Tea/Coffee Break Corridor, 3F</p>			
<p align="center">Track 1 Renewable Energy Session Chair: Takuro Kobashi, Dimitri Pinel</p>				
Time	Paper ID	Author	Paper Title	Code
11:00-11:15	36	Zhendong Zhang, Huichao Dai, Qing Zhang	Wind speed ensemble forecasting framework based on deep neural network and dropout mechanism	301-3-A2-36
11:15-11:30	189	Li Zhang, Lei Wang	Wind Turbine Full Power Controller Model Based on Preset Time Control	301-3-A2-189
11:30-11:45	376	Qiangzhi Zhang, Jinqing Peng, Yimo Luo	A Novel Power Generation Model for Bifacial Photovoltaic Modules Based on Parallel Equivalent Circuits	301-3-A2-376
11:45-12:00	185	Cheng Zhao, Lei Wang	Coordinated Optimization of Wind Turbine Mechanical Loads and Power with Model Predictive Strategy	301-3-A2-185
12:00-12:15	317	Tekai Eddine Khalil Zidane, Sebastian Zainali, Silvia Ma Lu, Sultan Tekie, Mohammed Guezgouz, Pietro Elia Campana	Agrivoltaic systems modelling and key performance indicators	301-3-A2-317
12:15-12:30	432	Linqi Sun, Xiaogui Zheng, Harris Zoe, Xinli Xu, Fan He, Lirong Liu	Economic and environmental benefit analysis for retrofitted biomass-coal co-firing power plant at a national level	301-3-A2-432
12:30-13:30	<p align="center">Lunch Break Venue: International Conference Room</p>			
<p align="center">Track 5 Mitigation Technologies Session Chair: Takuro Kobashi, Dimitri Pinel</p>				
Time	Paper ID	Author	Paper Title	Code
13:30-13:45	499	Shiqiang Guo, Keliu Wu, Qingyuan Zhu, Shengting Zhang, Hong Ran, Kaifen Li, Jiahong Jiang	Multi-Type of Miscible Characterization Methods during CO ₂ Flooding in Low-Permeability Reservoirs with Different Water Cut	301-3-A3-499
13:45-14:00	507	Yihe Zhang, Xinwei Liao	Feasibility Study and Parameter Optimization of CO ₂ Injection Technology in Heavy Oil Field	301-3-A3-507
14:00-14:15	408	Jing-Chun Feng, Cai Chaofeng	A negligible contribution in terms of dissolved inorganic carbon from "Haima" cold seep in the South China Sea	301-3-A3-408
14:15-14:30	474	Ram Thapa, Amrit Ambirajan, Pratikash Panda, Pradip Dutta	Numerical analysis for maximum CO ₂ removal by adsorption desorption cycle through optimization of cycle time and geometrical aspect ratio	301-3-A3-474
14:30-14:45	500	Fei Peng, Keliu Wu, Longjie Ma, Yun Zhang, Zongyu Li	Study on the Mechanism of CO ₂ Injection in Fractured-vuggy Carbonate Gas Condensate Reservoirs	301-3-A3-500
14:45-15:00	297	Fábio Castro, Bruno Canizes, João Soares, Zita Vale	Geospatial Analysis of a Medium Voltage Distribution Network Expansion Planning	301-3-A3-297
15:00-15:30	<p align="center">Tea/Coffee Break Corridor, 3F</p>			
<p align="center">Session Room: 302A</p>				
<p align="center">Track 1 Renewable Energy Session Chair: Takahiro Yoshida, Dimitri Pinel</p>				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	46	Weicong Xu	Precise control of CO ₂ electroreduction pathways over copper foil through regulating the microenvironment between morphology and crystal plane	302A-3-A1-46
09:15-09:30	37	Dishant Sharma, Rahul Goyal	Numerical Investigation of Deep Dynamic Stall on 2 Bladed H-Rotor VAWT using Scaled Resolved Turbulence Models	302A-3-A1-37
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	302A-3-A1-39
09:45-10:00	285	Yutaro Shimada, Akira Tomigashi, Arif Widiatmojo	An energy-saving performance of commercial-scale ground source heat pumps in Tokyo, Japan, based on dynamic simulation under future climate scenarios	302A-3-A1-285
10:00-10:15	483	Wang-Je Lee, Jongkyu Kim, Youngsub An, Hong-Jin Joo,	Experimental evaluation of thermal performance of BIPVT in a full scale mock-up facility	302A-3-A1-483

Day 3: Sept. 4

		Deuk-Won Kim, Min-Hwi Kim		
10:15-10:30	288	Hao Xu, Fumitake Takahashi, M Ismail Bagus Setyawan, PU YANG, Vinayak Gupta, Yamsomphong Kanokwan, Kunio Yoshikawa	Investigation into steam explosion of biomass: effect of temperature on the structural evolution, pyrolysis behavior, and kinetics	302A-3-A1-288
10:30-11:00	Tea/Coffee Break Corridor, 3F			
Track 1 Renewable Energy Session Chair: Roland Span, Junwei Liu				
11:00-11:15	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	302A-3-B2-8
11:15-11:30	206	Ziheng Wang, Na Li, Zongli Xie	A Super-Crosslinked Lamellar Graphene Oxide Membrane for Efficient Alcohol Dehydration	302A-3-B2-206
11:30-11:45	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	302A-3-B2-94
11:45-12:00	375	Shuhao Wang, Jinqing Peng	Assessment of solar irradiance based on sky image capturing and near-ground meteorology measurements	302A-3-B2-375
12:00-12:15	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	302A-3-B2-131
12:15-12:30	126	Hang Xiao	B Modulation of the D-band center of FeS ₂ enhances nitrogen activation for electrocatalytic ammonia synthesis	302A-3-B2-126
12:30-13:30	Lunch Break Venue: International Conference Room			
Track 6 Energy Science Session Chair: Roland Span, Zhiling Guo				
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	302A-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	302A-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	302A-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	302A-3-B3-407
14:30-14:45	404	Weiyu Yuan	Numerical Investigation into the Production Characteristics and Methane Leakage from the Hydrate Reservoir with Underlying Free Gas in Horizontal Well System	302A-3-B3-404
14:45-15:00	389	Wasim Ashraf, Ramgopal Maddali	Performance of solar flat plate collectors with s-CO ₂ as heat transfer fluid	302A-3-B3-389
15:00-15:30	Tea/Coffee Break Corridor, 3F			
Session Room: 302B				
Track 3 Intelligent & Flexible System Session Chair: Zhiling Guo				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	49	Sally Shahzad, Hom Bahadur Rijal	Developing a thermal comfort band for Japanese residential during free running periods and the energy implications	302B-3-B1-49
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	302B-3-B1-326
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	302B-3-B1-60
09:45-10:00	315	Roslin Mahmud Joy, Md. Faruk Abdullah Al Sohan, Afroza Nahar, Nusrat Jahan Anannya	Prediction of Daily Solar Irradiance for Solar Energy approximation using LSTM neural network	302B-3-B1-315
10:00-10:15	99	Qiyao Zuo, Rui Wang, Xianyu Zeng	Machine-Learning-based Sensor Fault Diagnosis of ORC System	302B-3-B1-99

Day 3: Sept. 4

10:15-10:30	485	Mengqiu Deng, Xiao Peng	A Belief-desire-intention Agent Model for Modeling End-user Decision-Making under Demand Response	302B-3-B1-485
10:30-11:00	Tea/Coffee Break Corridor, 3F			
Track 1 Renewable Energy Session Chair: Takahiro, Xiaomei Wu				
11:00-11:15	486	Youngsub An, Wang-Je Lee, Hong-Jin Joo, Deuk-Won Kim, Jongkyu Kim, Min-Hwi Kim	Effect on power generation characteristics by temperature of thermal collection for BIPVT module	302B-3-C2-486
11:15-11:30	456	Hong-Jin Joo, Youngsub An, Wang-Je Lee, Deuk-Won Kim, Min-Hwi Kim	Experimental Study of a Laminated BIPVT Module Using Micro Flat-Plate Heat Pipe	302B-3-C2-456
11:30-11:45	520	Lian Liu, Jie Shi, Xiaotong Yang, Jie Gao, Zhen Hou, Yan Ma	Advanced Short-Term Wind Power Forecasting Model Based on Multiple Imputation and Deep Learning	302B-3-C2-520
11:45-12:00	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-	302B-3-C2-236
12:00-12:15	487	Jia Zhang	Environmental impact forecasting for solar photovoltaic plants using interpretable machine learning	302B-3-C2-487
12:15-12:30				
12:30-13:30	Lunch Break Venue: International Conference Room			
Track 6 Energy Science Session Chair: Xiaomei Wu				
13:30-13:45	377	Snehangshu Monda, Ramgopal Maddali, Siddhartha Mukhopadhyay, Akash Kumar	Effect of operating and surrounding conditions on cooling load of air conditioned cars	302B-3-C3-377
13:45-14:00	489	Dong-Yi Wu, Wanpeng ZHANG, Xiaomin Chang, Guanjing Lin, Ke-lun He, Qun Chen	A Machine Learning-Based Modeling Method for Air Compressor Under Conditions of Limited Data Points	302B-3-C3-498
14:00-14:15	96	Jiarui Gong, Jiansheng Wang, Xueling Liu, Jintao Niu, Xuqing Wang	Flow structure and heat transfer in a channel with the streamwise ribs arranged in the buffer layer	302B-3-C3-96
14:15-14:30	41	Jintao Niu, Jiansheng Wang, Xueling Liu, Jiarui Gong, Liwei Dong	Methods to reduce wall friction drag and enhance heat transfer: add normal oscillating micro cuboid vortex generator in rectangular channels	302B-3-C3-41
14:30-14:45	464	Song Zhou, Huiqing Liu, Chen Luo, Yunfei Guo, Qinzhi He	Three-dimensional Physical Simulation of Multi-component Thermal Composite Flooding in Shallow-thin Ultra-heavy Oil Reservoirs	302B-3-C3-464
14:45-15:00	101	Latai Ga	Ultra-Low Voltage Converter for Thermal Energy Harvesting With Maximum Power Point Tracking	302B-3-C3--101
15:00-15:30	Tea/Coffee Break Corridor, 3F			
Session Room: 303				
Track 4 Energy Management, Policy, Economics and Sustainability Session Chair: Xiaodan Shi, Junwei Liu				
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	303-3-C1-213
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 CO2 Sources: A Case Study in Saudi Arabia	303-3-C1-174
09:30-09:45	242	Tianshuo Zhou, Dan Wang, Hongjie Jia	The Exergy Supply Capacity of Integrated Energy Systems	303-3-C1-242
09:45-10:00	152	Xianyang Zhou, Hao Ding, Dequn Zhou	Power generation investment portfolio optimization under production and price uncertainties	303-3-C1-152
10:00-10:15	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	303-3-C1-495
10:15-10:30	445	Ronghong Xu, Ma Huan, Tian Zhao, Dong-Yi Wu, Qun Chen	Two-stage robust operation optimization of distributed energy systems considering nonlinear characteristics of multi-energy transmission and	303-3-C1-445

Day 3: Sept. 4

			conversion processes	
10:30-11:00	Tea/Coffee Break Corridor, 3F			
Track 4 Energy Management, Policy, Economics and Sustainability Session Chair: Koji Tokimatsu, Jidong Kang				
11:00-11:15	255	Takashi Ohki, Yoshiki Yamagata	Analysis of the effects of using large drones to expand woody biomass supply potential in hilly and mountainous areas	303-3-D2-255
11:15-11:30	277	Yukiko Yoshida, Yujiro Hirano	Towards Green Transformation to Achieve Hitachi Zero-Carbon City Vision for 2050	303-3-D2-277
11:30-11:45	249	Hamad AL-ALI, Koji TOKIMATSU	Integrating Desalination and Wastewater Treatment in Hydrogen Production: A Lifecycle Perspective on Water Sustainability	303-3-D2-249
11:45-12:00	291	Kei Hiroi	Power Failure Emulator for Communication Network in Disaster Situation	305-3-D2-291
12:00-12:15	292	Kei Hiroi	A Structured Evacuation Simulator Framework for Federation Strategy during Flood Disasters	305-3-D2-292
12:15-12:30	446	Ping He, Helen Xiaohui Bao, Geoffrey Qiping Shen	Estimation of urban land use implication on energy-related carbon emissions based on machine learning methods	305-3-D2-446
12:30-13:30	Lunch Break Venue: International Conference Room			
Track 3 Intelligent & Flexible System Session Chair: Xiao Peng, Jidong Kang				
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	303-3-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	303-3-D3-476
14:00-14:15	434	Yaoyu Guo	Research on liquid level reconstruction of sloshing pressurizer based on POD method	303-3-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	303-3-D3-473
14:30-14:45	502	Zhengxian Chen, Tianle Wu, Weikang Li, Wenjie Ni, Chaosheng Huang, Jun Li	An Improved Rule Based Energy Management Strategy for Ammonia-Hydrogen Hybrid Vehicles Utilizing BFS Optimization	303-3-D3-502
14:45-15:00	465	Xinwei Shen	Large-scale Integrated Energy System Planning with Decarbonization Policies and Technologies	303-3-D3-465
15:00-15:30	Tea/Coffee Break Corridor, 3F			
Session Room: 304				
Track 5 Energy Science Session Chair: Jidong Kang, Zhenjia Lin				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	166	Hanping Xiong	Engineering Symmetry Breaking in MoS ₂ -MoSe ₂ Heterostructures for Optimal Thermoelectric Performance	304-3-D1-166
09:15-09:30	397	Panpan Lu , Jianye Mou , Shicheng Zhang, Sinan Li , Xinliang Wang , Xiaoyi Sun	Field-scale Simulation of Closed-Fracture Acidizing for Acid Etching Patterns and Conductivity Prediction	304-3-D1-397
09:30-09:45	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	304-3-D1-458
09:45-10:00	43	Kuang Yang, Zhicheng Liang, Yunhao Zhang, Xinying Wang, Qiang Li, Haijun Wang	Data-driven dimensional analysis of flow boiling critical heat flux in microgravity	304-3-D1-43
10:00-10:15	420	Qun Liu, Wenlong Cheng	Experimental and simulation study on thermal control performance of anisotropic CPCM	304-3-D1-420
10:15-10:30	325	SAMIR NANDA, Sourav Mitra	A comparative numerical study on heat transfer analysis between single-channel-type large diameter heat exchanger with that of multi-channel-type small hydraulic diameter heat exchanger using Super critical CO ₂	304-3-D1-325
10:30-11:00	Tea/Coffee Break Corridor, 3F			
Track 5 Energy Science Session Chair: Alalea Kia, Xiao Peng				
11:00-11:15	112	Ping Yuan, Hua Tian, Fengying Yan, Xuanang Zhang, Gequn Shu	An Active Design Method for Adaptive Printed Circuit Heat Exchanger Channel Structure	304-3-E2-112

Day 3: Sept. 4

11:15-11:30	257	Hanxiao Zhao, Li,Zhao , Weicong Xu , Shuai Deng	3D Analysis and Optimization of Kalina Cycle System with High-Temperature Heat Recovery	304-3-E2-257
11:30-11:45	387	Xiong Zhao, Nanjing Hao	Microfluidic one-step and large-scale production of nanofluids for efficient phase-change cooling of power electronic devices	304-3-E2-387
11:45-12:00	7	Bingtao Yang, Pingchuan Dong	Numerical Simulation of Pore-Scale Supercritical CO ₂ Enhanced Oil Recovery Based on Tight Sandstone Core	304-3-E2-7
12:00-12:15	303	Zhiqiang Wang, Anqi He, Mengqi Ma, Miao Zhang, Hanqiao Jiang	The Study On Microscopic Mechanism of Asphalt Particle	304-3-E2-303
12:15-12:30	329	Haoyu He, Yue Sun, Tian Song, Lin Ding	Flow-Induced Vibration and Heat Transfer Characteristics of Two Tandem Cylinders in Different Spacing Ratios	304-3-E2-329
12:30-13:30	Lunch Break Venue: International Conference Room			
Track 2 Clean Energy Conversion Technologies Session Chair: Alalea Kia				
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	304-3-E3-484
13:45-14:00	64	Tianlong Yang, Yunlian Liu, Peng Li, Mingkai Liu, Sanli Tang, Ying Pan, Hongguang Jin	Controlling Fe-Ni exsolution in perovskite oxygen carrier to achieve high performance in chemical looping dry reforming of methane	304-3-E3-64
14:00-14:15	367	Meng Nan, Ke-lun He, Ma Huan	Thermodynamic optimization of energy acquisition and energy conversion coupling of enhanced geothermal system for hot dry rock utilization	304-3-E3-367
14:15-14:30	425	Md. Imteaz Ahmed, Qazi Talal, KFUPM, Esmail M. A. Mokheimer	Effect of Reynolds Number on Combustion Stability and Flame Macrostructure in a Dual Annular Combustor	304-3-E3-425
14:30-14:45	217	Yixin Weng, Fan Jiao, Shiyang Yang, Yibiao Long, Qibin Liu	Thermodynamic Analysis of a Methane Carbon Cycling Reforming System Integrated Direct Reduction Iron	304-3-E3-217
14:45-15:00	104	Federico Gianaroli, Mattia Ricci, Paolo Sdringola, Mauro Pipicciello, Diego Menegon, Francesco Melino	Retrofit design and numerical modeling of bidirectional substations for the empowerment of thermal prosumers in District Heating Networks	304-3-E3-104
15:00-15:30	Tea/Coffee Break Corridor, 3F			
Session Room: 305				
Track 8 Hydrogen Energy Session Chair: Kasuni Guruvita, Huan Zhao				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	271	Xing Lu	Hydrogen supply chain uncertainty: a systematic literature review	305-3-E1-271
09:15-09:30	26	Fangtao Lyu, Zhengfu Ning, Ying Kang, Zejiang Jia	Molecular simulation on H ₂ adsorption in shale kerogen nanopores and implications for underground hydrogen storage	305-3-E1-26
09:30-09:45	316	Marco Maggini, Giacomo Falcucci, Andrea Luigi Facci, Stefano Ubertini	Enhancing Metal Hydride – Phase Change Material Hydrogen Storage Systems Efficiency with Expanded Graphite	305-3-E1-316
09:45-10:00	454	Zongkang Wang, Zhenyu Tian, Yanjun Chen, Mingwei Sun, Wenjia Li, Shangchun Su	Solar thermophotovoltaic-SOEC hydrogen production system based on full-spectrum utilization	305-3-E1-454
10:00-10:15	396	Jiaojiao Xie, Tiancai Ma, Xiuhui Jing	Optimised design of fuel cell hydrogen recirculation system based on ejector	305-3-E1-396
10:15-10:30	142	Qianrong Huang, Xinli Lu, Wei Zhang, Jiali Liu, Shuntao Hu	Study on a dynamic coupling system for hydrogen production using wind and geothermal energy	305-3-E1-142
10:30-11:00	Tea/Coffee Break Corridor, 3F			
Track 8 Hydrogen Energy Session Chair: Yuntian Chen, Ottorino Veneri				
11:00-11:15	24	Hanan Mohamed Mohsin, Yuting Zhuo, Yansong Shen	Effect of Flow Channel Configuration on Electrolyser Performance: a Computational Fluid Dynamics Study	305-3-F2-24
11:15-11:30	453	Yanjun Chen, Wenjia Li, Juan Song, Zongkang Wang, Zhenyu Tian	Numerical study on flow field structure of anion exchange membrane electrolysis cell based on heat transfer-mass transfer- electron conduction	305-3-F2-453
11:30-11:45	245	Sarah Pertiwi, Muhammad Aziz	Evaluation of Sorption-Enhanced Biomass Gasification in Improving Water-Gas-Shift Reaction in Hydrogen Production	305-3-F2-245

Day 3: Sept. 4

11:45-12:00	503	Zhenqian WANG, Yuezhang He, Tianduo Peng, Huawei Fei, Lining Wang, Zheng Li	Cost and Carbon Emission Assessment of Hydrogen Supply Routes in China's Refining Industry	305-3-F2-503
12:00-12:15	516	Zhehui Song, Zhenyu Tian	Ni-Mo Based Catalyst on Carbon Nanofiber for Hydrogen Evolution Reaction in Anion-Exchange Membrane Water Electrolysis	305-3-F2-516
12:15-12:30	523	Jaeyeon Kim, Muhammad Aziz	Correlation between Fiber Orientation in Gas Diffusion Layer and Conductive Characteristics of the Porous Network in Fuel Cells	305-3-F2-523
12:30-13:30	Lunch Break Venue: International Conference Room			
Track 6 Energy Science Session Chair: Ottorino Veneri				
13:30-13:45	151	Lin Liu, Jiali Liu, Xinli Lu, Wei Zhang, Dongxi Liu, Shuntao Hu	Simulation of thermal management in square battery systems using CPCM/liquid cooling and topology optimization of fins	305-3-F3-151
13:45-14:00	233	Hayoung Kim, Soowon Chang	Adaptive Setpoint Optimization for Developing Energy Usage Strategies to Alleviate Energy Poverty	305-3-F3-233
14:00-14:15	488	Youngsub An, Hong-Jin Joo, Wang-Je Lee, Min-Hwi Kim, Hyun-hee Lee, Siwon Yoon, Kyoung-ho Lee, Sae-byul Kang	Experimental study on PPF for Hybrid louver lighting system in indoor vertical farms	305-3-F3-488
14:15-14:30	419	Lin-Cheng Han, Jian Chen	Experimental investigation of the effects of transverse vibration on the supercritical CO ₂ heat transfer characteristics in a vertical/horizontal tube	305-3-F3-419
Track 7 Energy Storage Session Chair: Ottorino Veneri				
14:30-14:45	496	Lisheng DengTao, Zeng, Jun Li, Hongyu Huang, Zhen Huang	Performance study of Na ₃ PO ₄ -expanded graphite composites for low-temperature thermochemical heat storage	305-3-F3-496
15:00-15:30	Tea/Coffee Break Corridor, 3F			
Session Room: 306				
Track 7 Energy Storage Session Chair: Wenchao Shi				
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	306-3-F1-371
09:15-09:30	219	Shun Chen, Zhang Xi	Internal Microstructural Changes and Side Reactions Induced by Copper Impurity Particles in Lithium-Ion Batteries	306-3-F1-219
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	306-3-F1-439
09:45-10:00	320	Sai Yagnamurthy, Steven Metcalf, Robert Critoph	Design and performance characterization of aqueous sodium hydroxide based thermochemical storage systems: Experimental and thermodynamic comparative analysis among various heat exchanger designs and working pairs	306-3-F1-320
10:00-10:15	176	Mengshu Tian, jiangong zhu, jixiang cai, Wentao Xu, Jie Zhang, Haifeng Dai, Xuezhe Wei	Sensitivity analysis and evolution patterns of key electrochemical parameters to temperature and SOC for lithium-ion batteries	306-3-F1-176
10:15-10:30	230	Mohammad Mehrali	Toward Smart Long-Term Heat Storage: Electrically Driven Nucleation of Innovative Salt Hydrate Hydrogels	306-3-F1-230
10:30-11:00	Tea/Coffee Break Corridor, 3F			
Track 7 Energy Storage Session Chair: Chunyang Zhao, Yao Yao				
11:00-11:15	431	Zhenpeng Deng, Wenlong Cheng	A novel absorption thermal storage system dynamic model for thermal energy storage	306-3-G2-431
11:15-11:30	423	Qi Deng, Wen Long Cheng	Numerical evaluation of melting of phase change materials in two-dimensional rectangular vessels with different aspect ratios under vibration conditions	306-3-G2-423
11:30-11:45	2	Xin Jin, Chunjun Huang, Shi You	Comparative study on the thermodynamic performance of the solar latent heat thermal energy storage system using different storage mediums	306-3-G2-2
11:45-12:00	98	Guangliang Wang, Jing Wang, Juan Song, Jintao Niu, Yuhan Ding, Yuxin Luo, Jun Zhao	Thermal Management Design and Parameter Optimization of Battery Energy Storage System Under High Discharge Rate Scenario	306-3-G2-98

Day 3: Sept. 4

12:00-12:15	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	306-3-G2-88
12:15-12:30	111	Tayenne Dias de Lima, Pedro Faria, Zita Vale	Optimal Home Energy Management Systems Considering Cycle and Calendar Battery Aging	306-3-G2-111
12:30-13:30	Lunch Break Venue: International Conference Room			
Track 1 Renewable Energy Session Chair: Chunyang Zhao				
13:30-13:45	246	M Ismail Bagus Setyawan, Hao Xu, Pu Yang, Yamsomphong Kanokwan, Vinayak Gupta, Fumitake Takahashi	Analysis of the Most Efficient Parameters on Biomass Pyrolysis and Gasification for Syngas from Performance and Economical Perspectives.	306-3-G3-246
13:45-14:00	136	Baorong Xu, Guidong Yang	Recognition of Optimum Doping on Cobalt-Incorporated ZnIn ₂ S ₄ Nanosheets for Boosting Photocatalytic Hydrogen Evolution	306-3-G3-136
14:00-14:15	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	306-3-G3-289
Track 5 Mitigation Technologies Session Chair: Chunyang Zhao				
14:15-14:30	16	Yun Chen, Zongran Li, Yuan Zhu, Dejun Liu	Study the dissolution and consumption of CO ₂ cushion gas in UGS through numerical simulation	306-3-G3-16
14:30-14:45	505	Yongtie Cai, Preston Tan, Wen Liu	Hydrodynamics of a pilot-scale dual fluidized bed reactor: cold model studies	306-3-G3-505
14:45-15:00	216	Jiaojiao Yu	Research and Suggestions on Economic and Comprehensive Benefit Evaluation of LNG Cold Energy Utilization in the Context of Energy Transition	306-3-G3-216
Session Room: 307				
Track 3 Intelligent & Flexible System Session Chair: Yao Yao, Yuntian Chen				
Time	Paper ID	Author	Paper Title	Code
09:00-09:15	459	Zhigang Li	Advancing Integrated Industrial Energy Systems for Decarbonization: From Research to Real-world Implementation	307-3-G1-459
09:15-09:30	469	Kosaku Nakano, Daishi Sagawa, Shingo Ito, Keisuke Ando, Ryohta Kitagawa, Kenji Tanaka	Autoregressive Transformer for Predicting and Synthesizing Residential Load	307-3-G1-469
09:30-09:45	504	Gang Yu, Xianming Ye, Bo Wang	Optimal Electricity Procurement Plan for Charging Service Providers	307-3-G1-504
09:45-10:00	515	Shangyuan Liu, Weiqi Hua	Mapping Heat Electrification to Socioeconomic Segments of UK Consumers for Place-Based Net-Zero Energy Transition	307-3-G1-515
10:00-10:15	276	Mir Nahidul Ambia, Yuchen Zhang, Ke Meng, Ahmed Al-Durra, Zhao Yang Dong	Novel Virtual Synchronous Generation Control with Virtual Impedance technique for Weak Grids integrating to Renewables	307-3-G1-276
10:15-10:30	448	Genghong Lu, Siqi Bu	Intelligent Fault Diagnosis for Overhead Lines with Covered Conductors: Using Large Language Model	307-3-G1-448
10:30-11:00	Tea/Coffee Break Corridor, 3F			
Track 2 Clean Energy Conversion Technologies Session Chair: Qing Yu				
13:30-13:45	197	Yunlian Liu, Mingkai Liu, Yang Li, Yuanhui Shen, zhongrui gai, Sanli Tang, Ying Pan, Hongguang Jin	Integrated CO ₂ capture and conversion from the industry sector by three-step chemical looping dry methane reforming	307-3-H3-197
13:45-14:00	145	Qin Yang, Xinli Lu, Wei Zhang, Shuntao Hu, Jiali Liu	Research on the thermodynamic performance of a novel power generation system for a natural gas pressure reduction station integrated with cold energy and geothermal energy utilization	307-3-H3-145
14:00-14:15	296	Vivek Kumar Mishra, Sourav Mitra, SAMIR NANDA	Novel operational strategy for operating a hybrid mechanical compression and adsorption based chiller	307-3-H3-296
14:15-14:30	61	Depeng Chang	Experimental study of a four-cylinder double-acting free-piston Stirling refrigerator for the room temperature refrigeration	307-3-H3-61
14:30-14:45	266	Longran Dai	Study on operating characteristics of high temperature free-piston Stirling heat pump suitable for 120 ~ 180 °C	307-3-H3-266

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

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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.

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



For details at

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

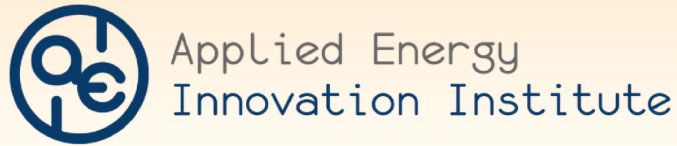
To contact the editor-in-chief or for inquiries about the journal, email nexus.polyu@polyu.edu.hk.



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Acknowledgements



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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

WeChat Group Chat

Please add any of the following staff members on WeChat, and you will be invited to join the WeChat group.

WeChat ID 1: zhouyifan19990731

WeChat ID 2: Liang17860712306

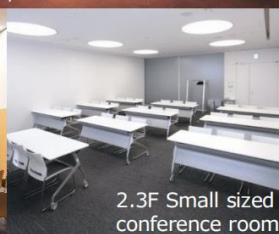
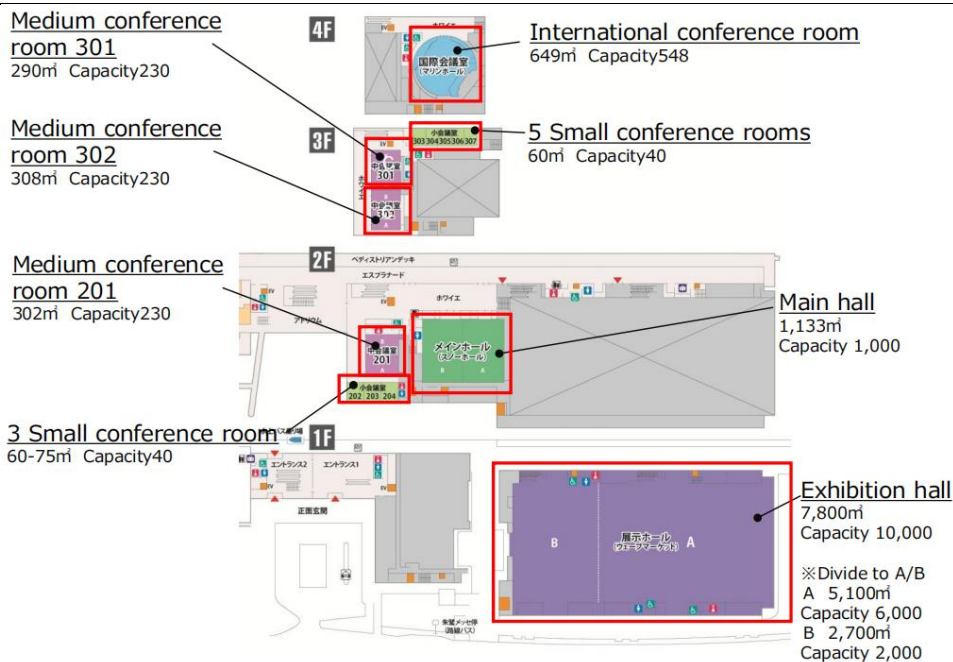
Useful Information – Meal and Visits

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	International Conference Room	International Conference Room
Banquet	Main Hall	N/A	N/A

Banquet Schedule

17:30 - Door Opening (Start Serving Drinks)
18:30 - Taiko performance (15 minutes)
18:45 - Speech and Toast (Buffet Start)
18:50 - Geisha performance (20 minutes)
21:00 - Closing



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

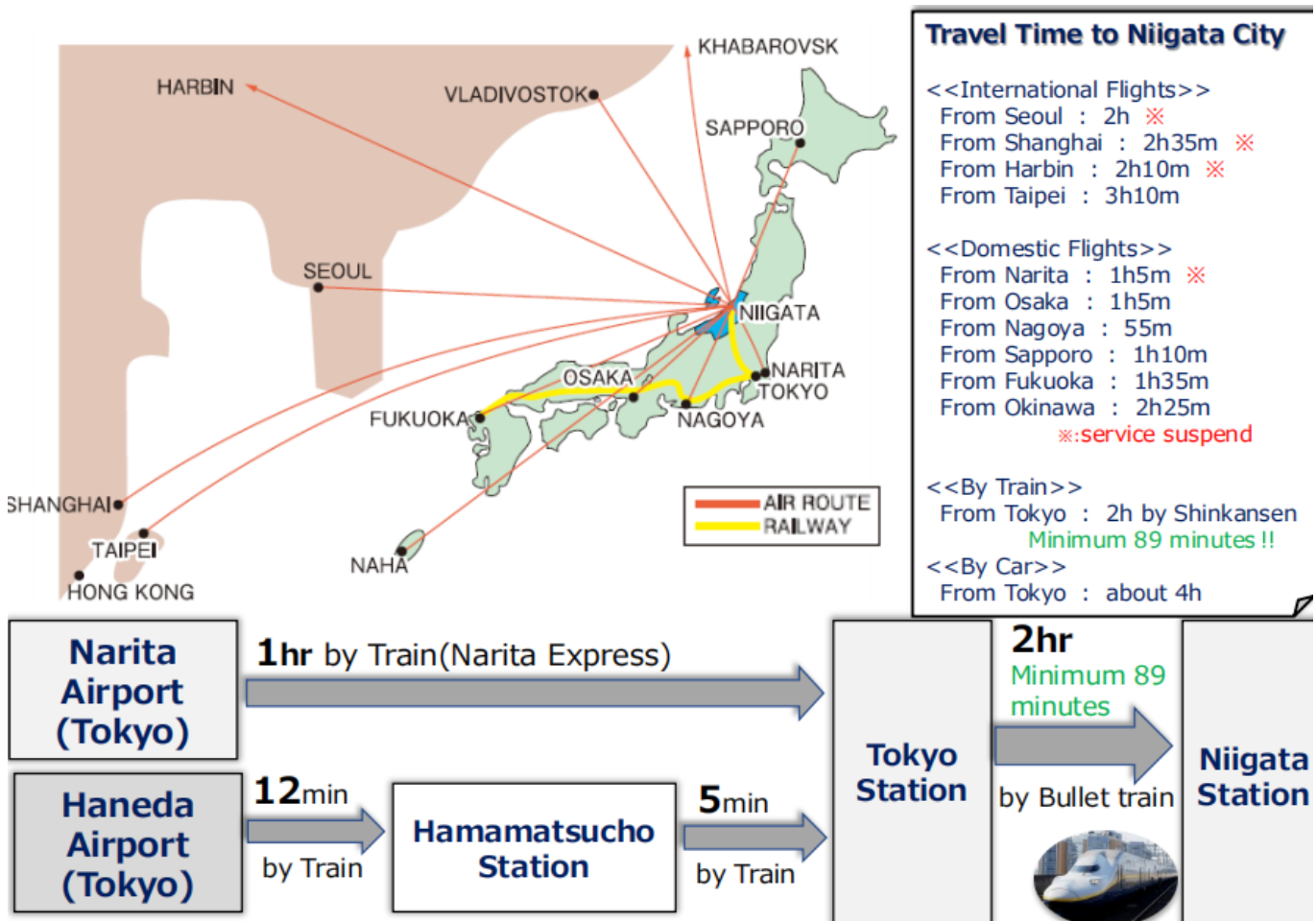
Tsubame-Sanjo

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



Useful Information - Travel

Access to Niigata

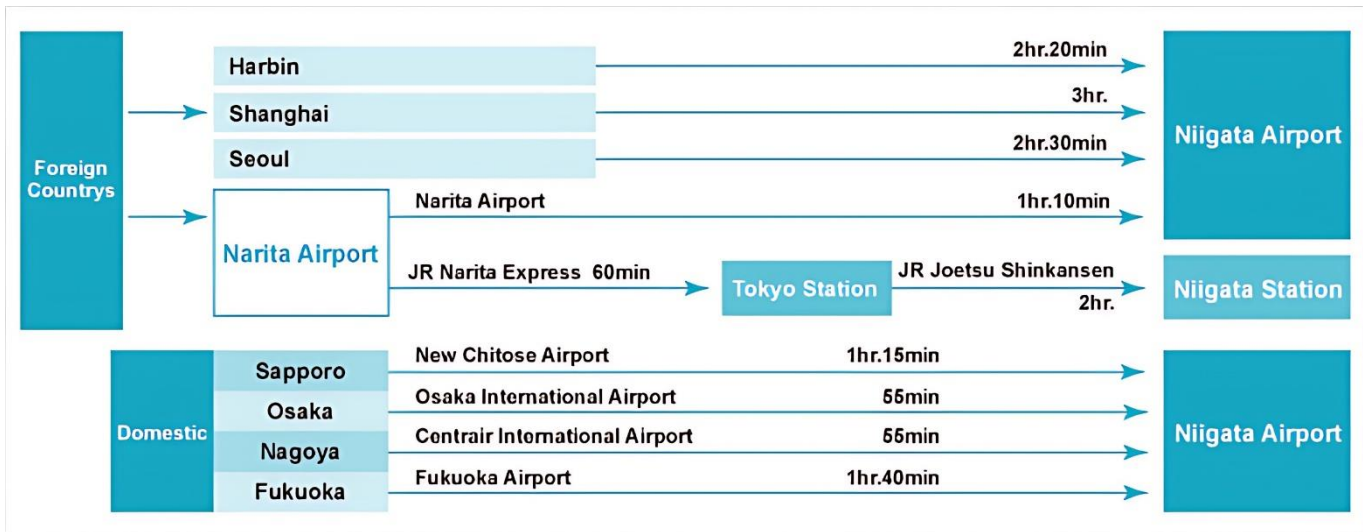


Niigata City is located on the northwest coast of Honshu, Japan's largest island, facing the Japan Sea. The two main ways of reaching the city are by plane into Niigata International Airport, and by train into JR Niigata Station. Direct international flights fly to and from Seoul, Shanghai, and Harbin. 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.

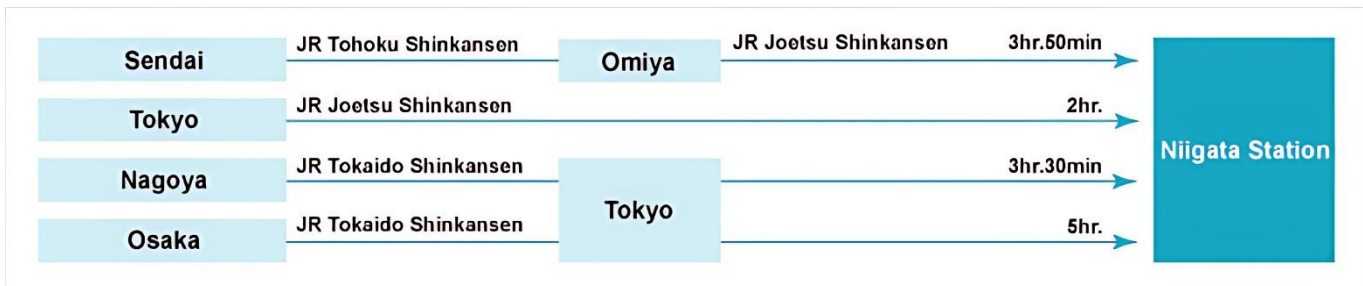
For more information, please refer to Niigata official travel guide <https://www.nvcb.or.jp/multilingual/access>.

Useful Information - Travel

Travel by air



Travel by Rail

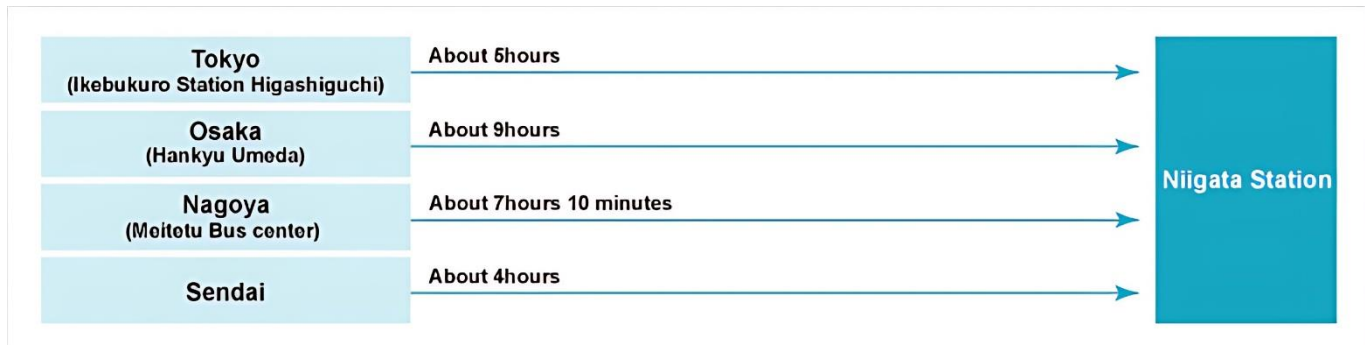


Travel by Car



Useful Information - Travel

Travel by Bus

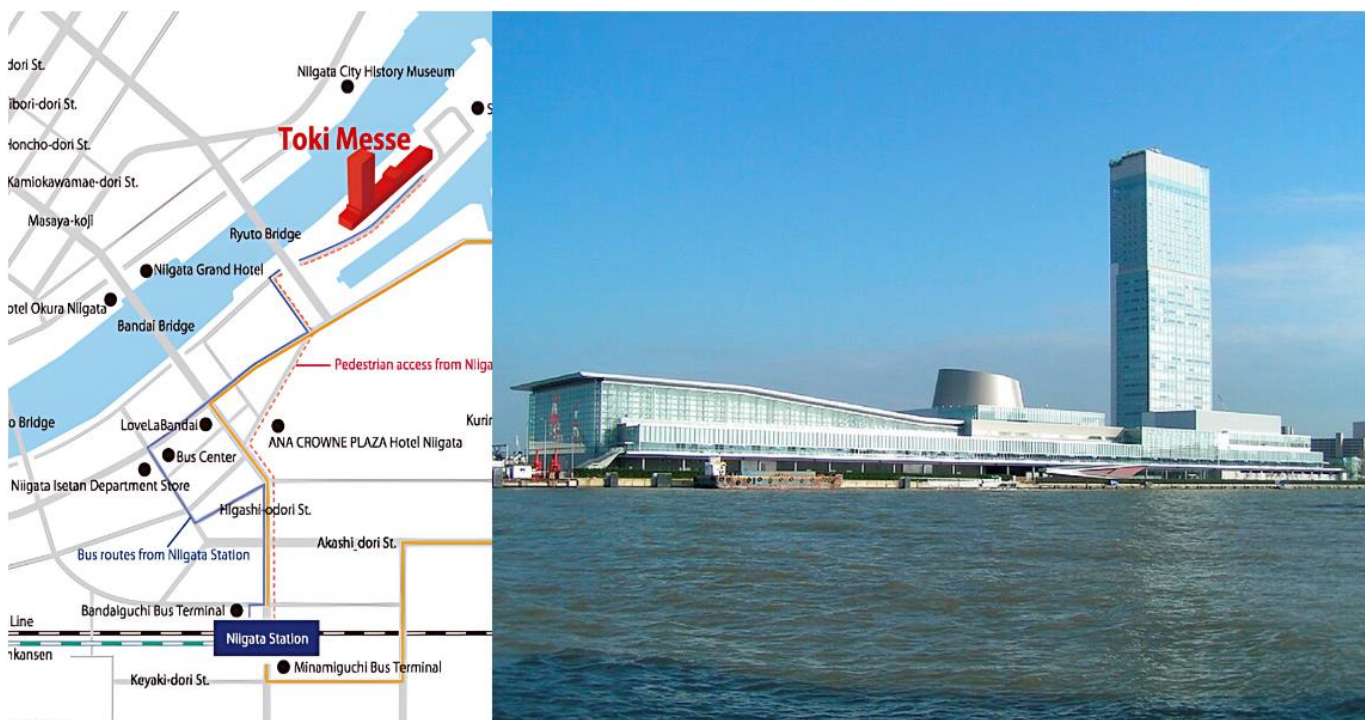


Access to Toki-Messe

Address

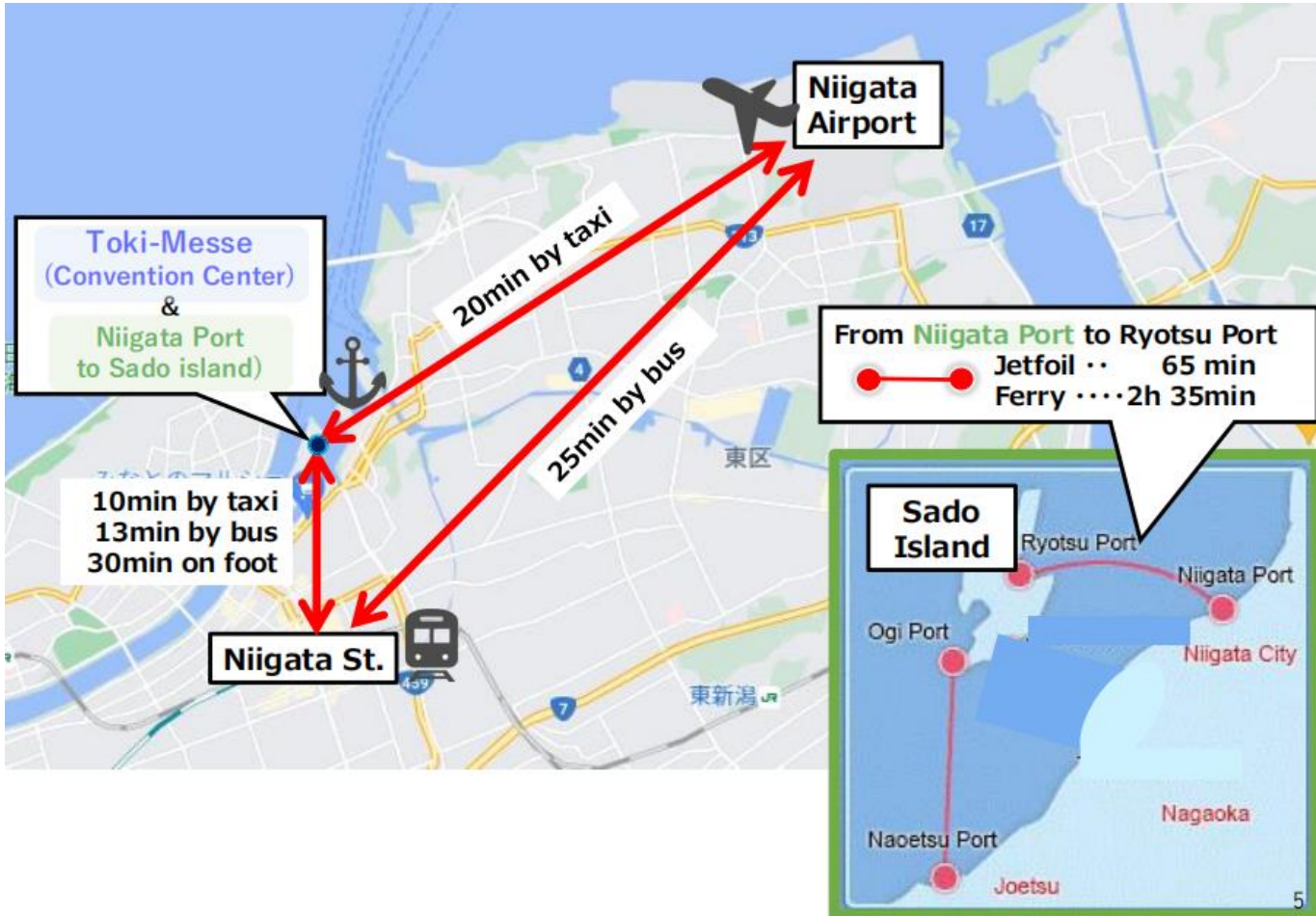
TOKI MESSE is Located at the mouth of Shinano-River, in the heart of Niigata city, TOKI MESSE is opened in 2003. A conference, a party and accommodation, everything comes into only one space.

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

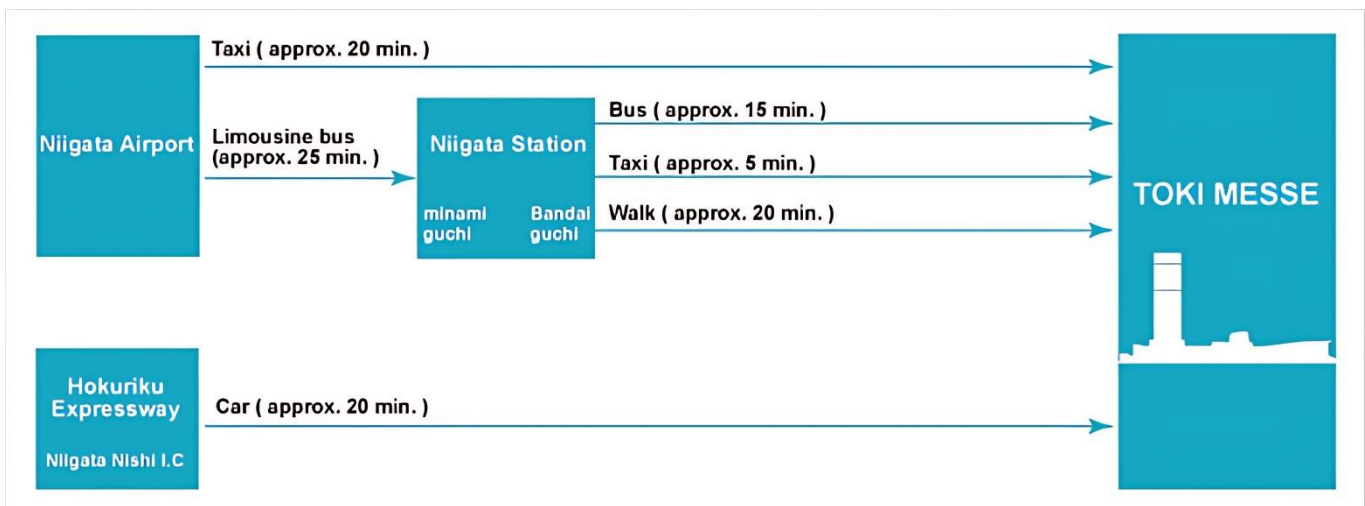


Useful Information - Travel

Travel to Toki-Messe

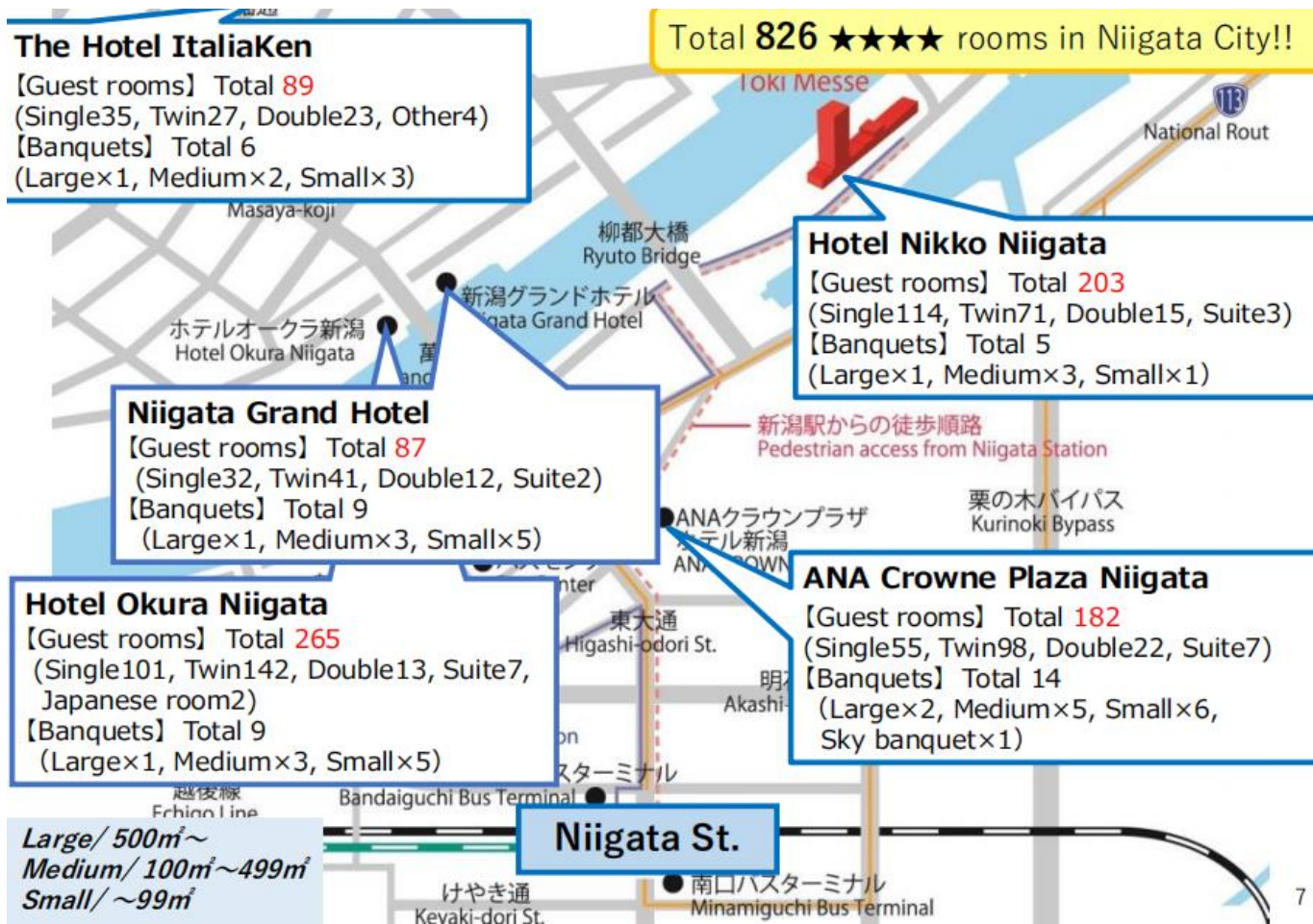


From Niigata station to TOKI MESSE, you may take bus (15min), take taxi (5min) or walk (20min).



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

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



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

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

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



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

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

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



12.Toyoko Inn Niigata Ekimae, Chuo-ku Hanazono 1-2-2 Garesso 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 km². 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.



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