

# icae

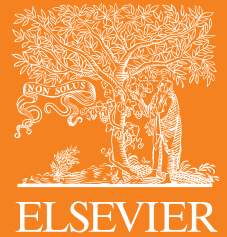
International Conference on Applied Energy



Applied Energy ICAE2018

**August 22-25, 2018**

# Applied Energy



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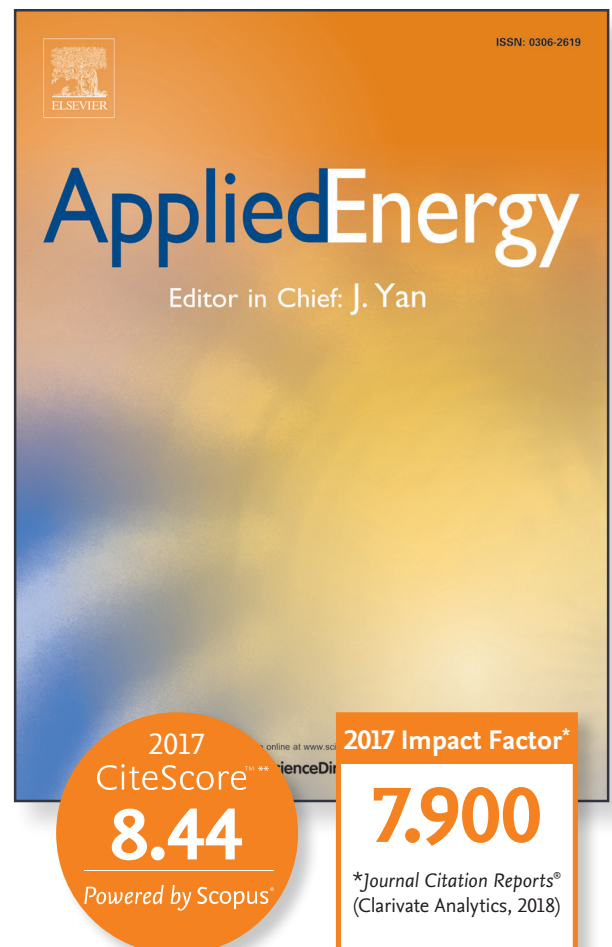
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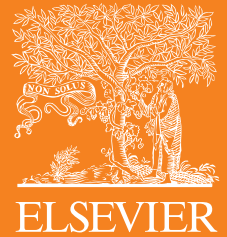


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- **Welcome to ICAE2018**
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# Applied Energy



## **Applied Energy** new section now publishing

Last year, *Applied Energy* launched a brand-new section: *Progress in Applied Energy*.

With a focus on renewable energy and clean technology, from energy efficiency to climate change mitigation, this new section aims to bridge the gap between development and implementation, focusing on fast-paced, cutting-edge research from forward looking aspects of energy innovations.

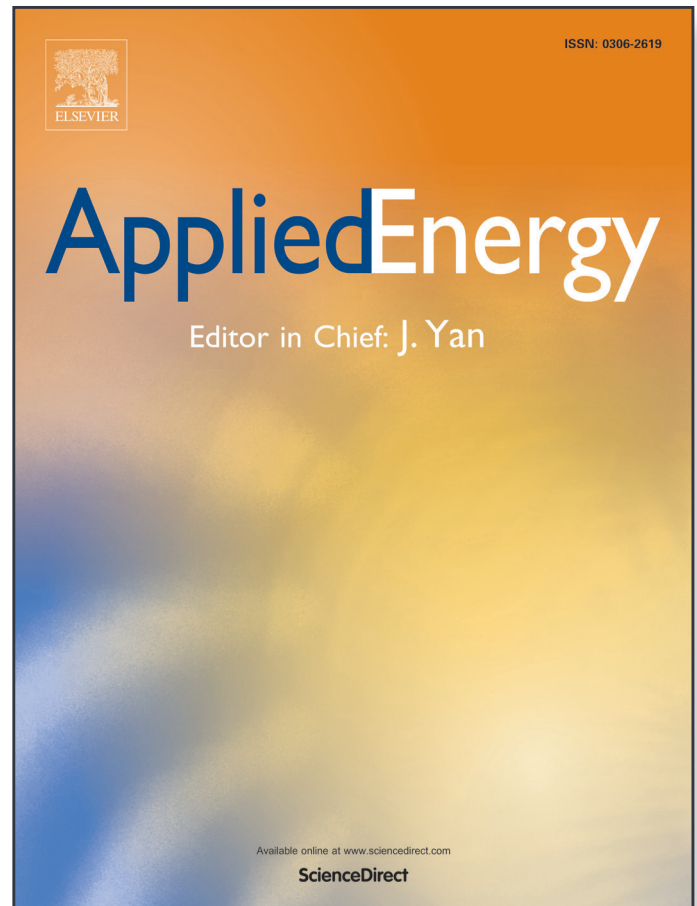
One year later, we're pleased to say our new section is publishing. Have a look at the first selection of articles published in our new section *Progress in Applied Energy*.

These articles are free to access until **31 October 2018**

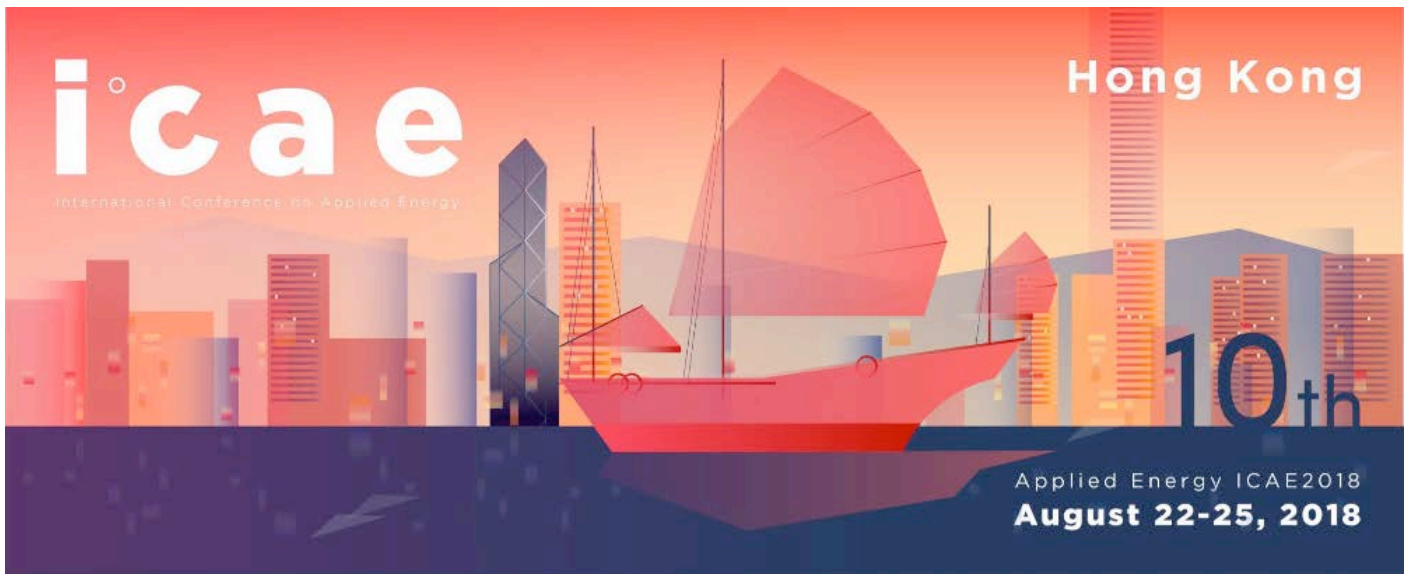
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# Welcome to ICAE2018



The Organizing Committee of ICAE2018 warmly invites you to attend the 10th International Conference on Applied Energy during Aug 22-25, 2018, in Hong Kong, China. The theme of ICAE2018 is “Innovative Solutions for Energy Transitions”. As the conference chairmen, it is a great honour for us to make an invitation for all of you to this exciting event, with the cordial hospitality and the warm welcome of Hong Kong.

As a continuation of this prestigious conferences series, we will follow the style of the former nine successful conferences, held in Hong Kong, Singapore, Perugia/Italy, Suzhou/China, Pretoria/South Africa, Taipei/Taiwan, Abu Dhabi/United Arab Emirates, Beijing/China and Cardiff/United Kingdom to have you enjoy the program and social activities provided by the host.

ICAE2018 will include keynote and invited speeches, plenary sessions, oral presentations, and poster sessions on different topics including:

- » Clean Energy Conversion Technologies
- » Energy Management, Policy, Economics and Sustainability
- » Energy Sciences
- » Energy Storage
- » Intelligent Energy Systems
- » Mitigation Technologies
- » Renewable Energy
- » Geoenergy

We are looking forward to seeing you in Hong Kong.

## Conference Chairs

**Prof. Hongxing Yang and Prof. Jinyue Yan**

# Call For Papers

## Topics

- Islands energy systems
- High penetration of renewable energy
- Mini/Microgrid architecture, design and planning
- Community energy systems and Microgrid
- Control and protection schemes
- Distributed renewable energy supplies
- Demand side response
- Energy storage
- Cyber-physical systems
- Reliability and resilience of distributed energy and microgrids
- DC Microgrids and off-grid Microgrids
- Modelling, simulation and analysis
- New operation strategies
- Novel renewable technologies for microgrid applications
- Policy and regulatory interventions
- Environmental and ecological impacts
- Economic analysis, new business models and markets
- Case studies and best practices

*Deadline for draft paper:  
Aug. 15, 2018  
Notification of acceptance:  
Sept. 1, 2018  
Deadline for final paper:  
Sept. 15, 2018*

All accepted papers presented in REM2018 will be published in Energy Procedia. A special Issue of selected papers from REM2018 will be published in prestigious journals including Applied Energy (IF: 7.182)

# Acknowledgements



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# FUTURE ENERGY CENTER

**THE CHALLENGES** due to energy related emissions, increased energy demand and the fragile state of the global economy calls for rethinking global energy systems. Therefore, the research within the Future Energy Center focuses on renewable energy, energy efficiency and emission mitigation, as well as smarter modelling, optimization and management.

The Future Energy Center is one of Sweden's strongest research environments in process optimization targeting the process industry and the energy sector. We develop innovative solutions and tools within the areas of energy, building and environmental engineering.

The Future Energy Center has good relationships with both companies and recognized national and international centers, including several

Chinese universities. The profile comprises nine professors, a further fifteen senior researchers and more than forty graduate students.

## THREE FOCUS AREAS

The research at Future Energy Center is focused on three areas:

**TRACK 1** Renewable energy

**TRACK 2** Energy efficiency and emission mitigation

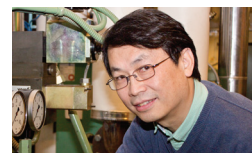
**TRACK 3** Smarter modelling/ optimisation and management

The Future Energy Center also offers studies at post-graduate level in Energy and Environmental engineering. We are also part of the research school Reesbe (Resource-Efficient Energy Systems in the Built Environment).



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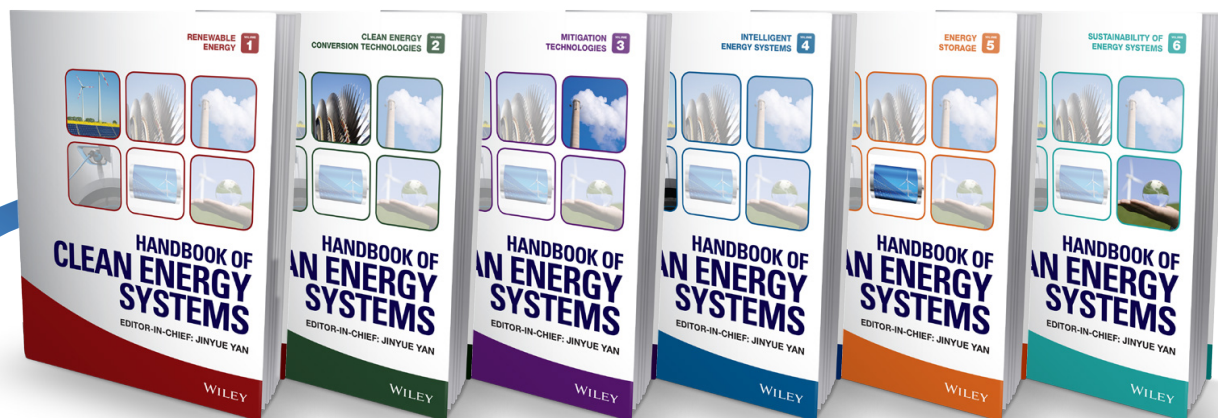
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# Keynote Speakers



**Prof. Geoffrey P.  
Hammond**

**University of Bath, UK**

## **Keynote 1: Challenges, Insights and Opportunities along the Energy Transition Pathways Towards a Low Carbon Future**

The United Kingdom (UK) has placed itself on a transition towards a low carbon economy and society, through the imposition of a legally-binding goal aimed at reducing its 'greenhouse gas' (GHG) emissions by at least 80% by 2050 against a 1990 baseline. Thus, the socio-technical insights and opportunities associated with the transition towards a low-carbon future are of critical importance in many industrialised countries. Two sets of transition pathways or scenarios are therefore described that relate to the electricity sector and to industry respectively. The power sector pathways were developed via an innovative collaboration between engineers, social scientists and policy analysts. They included an examination of the potential for increasing the use of low-carbon electricity for heating and transport. A second set of scenarios, and coupled technology roadmaps, were devised that reflect the transition challenges that will need to be met by industry out to 2050. Reducing industrial energy demand and improving resource efficiency could make a substantial contribution towards the UK Government's decarbonisation goal, while simultaneously improving productivity and creating employment opportunities. These yield forward projections that match specific technological solutions to short-term and long-term (2050) targets. The technology roadmaps exhibit quite large uncertainties, and reducing GHG emissions over the long-term will depend critically on the adoption of a small number of key technologies, alongside the 'decarbonisation' of electricity supply. 'Circular economy' interventions have the potential to make significant energy savings that are complementary to other energy-efficiency measures. In the case of both of the research projects outlined, the lessons learned are applicable across much of the industrialised world.

Prof. Geoffrey Hammond holds a Chair in Mechanical Engineering at the University of Bath (UK), and was founder Director of its Institute for Sustainable Energy & the Environment (I•SEE). He is a mechanical engineer with a multidisciplinary background, including environmental engineering and business management. His research interests are mainly concerned with the technology assessment of energy systems, industrial decarbonisation, and transition pathways to a low carbon future. In the latter context, he was Principal Investigator (PI) and Co-Leader of the 'Realising Transition Pathways' Consortium of nine socio-technical university partners funded by the UK Engineering and Physical Sciences Research Council (EPSRC). He is also a Co-Director of the four-university EPSRC-funded, interdisciplinary Centre for Industrial Energy, Materials and Products (CIE-MAP). Several of his publications in the field of sustainable energy and the environment have received awards by UK engineering institutions, including the Dutton Silver Medal, the George Stephenson Prize, and the James Watt Medal. In parallel with his main post at the University of Bath, he held an Honorary Professorship in Sustainable Bioenergy at the University of Nottingham (2010-2016) in recognition of collaborative research. In recent years, he has advised the UK Government's the Department of Business, Energy and Industrial Strategy, Department for Environment, Food and Rural Affairs, the Government Office for Science, and their independent Committee on Climate Change. He is presently Convenor of the British Standards Institution (BSi) GHG Management Group.

# Keynote Speakers



**Prof. Shengwei Wang**

**The Hong Kong  
Polytechnic University**

## **Keynote 2: Optimal Design and Control for Energy-efficient Buildings and Grid-Responsive Buildings**

Smart, green, sustainable and energy-efficient are the essential features of buildings developed today. The proper design of the building energy systems design and their control in operation are the key issues to ensure buildings to be smart, green, sustainable and energy-efficient in reality. More and more renewable energy generations, such as photovoltaic and wind power, are integrated in power grids to address the global sustainability problem in energy supply. However, the intermittent nature of these renewable energy generations has imposed increasing burden on the balance and reliability of power grids. More efforts and investments are needed to increase and enhance the operation reserves and ancillary services in power grids. Buildings, as the largest energy consumer of power grids, have the capacity to serve as operation reserves and to provide ancillary services effectively and economically. They should play a more important role in the balance and energy efficient operation of power grids. The future buildings should, therefore, be grid-responsive, as a new and essential feature. Proper design and control of building energy systems are also the key issues to ensure buildings to be grid-responsive in reality. This presentation will provide a summary on the building system optimal design and control methods developed and the actual energy benefits of implementing the optimal design and control methods/strategies in real buildings, the feasibilities and capacities of buildings as operation reserves and ancillary services providers in smart grids, as well as the demand response control strategies of buildings to the requests of smart grids.

Prof. Shengwei Wang obtained his BEng and MSc on Refrigeration and Air-conditioning from Huazhong University of Science and Technology (HUST) in 1983 and 1986 respectively, and his PhD on HVAC and Building Energy Management from University of Liege in 1993. He joined The Hong Kong Polytechnic University in 1993 and promoted to Chair Professor in 2008. He is leading the Building Energy and Automation Research Laboratory in the university. He is extensively involved in the research and applications on building energy and automation in the subject areas including: building system diagnosis, energy efficient and optimal control, system robust optimal design, dynamic simulation, demand response methods for smart grid and intelligent building technologies. He has obtained over thirty research and technology development funds including 15 GRF grants from the Research Grant Council in Hong Kong (totally), National Science Foundation of China (Oversea Youth Talent) and other research funding resources over the last twenty years. He authored/co-authored four books and published over 320 papers in refereed journals (including over 210 papers in SCI journals), and is one of the top 150 highly-cited scholars in "Energy Science and Engineering". He also received significant amount of funding (totally over 18 million HKD) from industry for applied energy research and applications. He is conducting/has conducted a large number of energy optimization projects successfully for new buildings and existing buildings in Hong Kong with energy savings from 15% to 40%. He is a fellow of the International Building Performance Simulation Association (IBPSA), a fellow of Chartered Institution of Building Services of Engineers (CIBSE/UK) and a fellow of Hong Kong Institution of Engineers (HKIE).

# Keynote Speakers



**Prof. Paitoon  
Tontiwachwuthikul,  
University of Regina,  
Canada**

## **Keynote 3: Carbon Capture, Utilization & Storage (CCUS) for Energy Security and Environmental Protection in A Carbon Constrained World: Recent Developments and Future Opportunities**

Dr. Paitoon Tontiwachwuthikul (known as P.T.) is currently Full Professor in the Faculty of Engineering and Applied Science at the University of Regina, Canada, where he was the Director from 1999 to 2013. He obtained his Ph.D. degree in Chemical Engineering from University of British Columbia (UBC), Canada. Dr. PT is the co-founder of Clean Energy Technology Research Institute (previously known as the International Test Centre for CO<sub>2</sub> Capture – ITC) in Canada. Dr. P.T. is a key international researcher in the area of advanced CO<sub>2</sub> capture and separation from industrial gas streams as well as low-carbon energy development. He has provided technical advice to governments and industries nationally and internationally. Dr. PT played a vital role in the establishment of the Petroleum Technology Research Centre (PTRC) one of the largest petroleum research centers in North America. He has also served as a guest editor of the IEAGHG special issue on “IEA Weyburn-Midale CO<sub>2</sub> Monitoring and Storage Project (the world largest CO<sub>2</sub> for EOR and CCS program)” in International Journal of Greenhouse Gas Control (IJGGC Elsevier), May 2013. He and his team have developed more than 8 Patents (US and International) in the areas of Advanced Carbon Capture Processes and Clean Energy Technologies. In 2006, Dr. PT’s research team won the prestigious NSERC Synergy Award for Innovations from Natural Science and Engineering Research Council of Canada. Dr. P.T. is currently a member of Editorial Board of IJGGC. In addition, he is serving as the Honorary Editor-in-Chief of PETROLEUM Journal (Elsevier). Recently, Dr. PT. has served as the chief guest editor of (i) a special issue on “Carbon Capture, Utilization and Storage (CCUS) Technological Developments and Future Opportunities for Petroleum Industry” in PETROLEUM (Elsevier) – 2017 and (ii) a special issue on “Recent progress and new developments of applications of Artificial Intelligence (AI), Knowledge-based Systems (KB) and Machine Learning (ML) in the Petroleum Industry” – 2018. In 2013, Dr. PT. and his research team published an eBook on “Recent Progress and New Development of Industrial Combustion Carbon Capture (PCC) Technology Using Reactive Solvents” by Future Science Group, UK. Dr. P.T. has published extensively in AIChE Journal, Applied Energy, Fuels, Chemical Engineering Science, International Journal of Greenhouse Gas Control, Membrane Science and Technology, Petroleum, Chemical Engineering Journal, Carbon Management, Separation & Purification Technology, Petroleum, Engineering Applications of Artificial Intelligence and Industrial Engineering Chemistry Research. In 2016, he was inducted as a Fellow in the Canadian Academy of Engineering (CAE)

# Keynote Speakers



**Dr. Yongping Zhai**

**Chief of Energy Sector  
Group, Asian  
Development Bank**

## **Keynote 4: Achieving Universal Clean Energy Access through Innovative Technologies and Solutions — Asian Development Bank's Role and Approaches**

Dr. Yongping Zhai has been working on energy development in Asia and Africa for 25 years. He is currently Chief of Energy Sector Group, Asian Development Bank (ADB), in charge of overall energy policy coordination and technical support to ADB energy sector operations. He is also in charge of developing energy sector knowledge work for ADB and interacts with worldwide energy sector knowledge partners.

Prior to his current position, Dr. Yongping Zhai was Director, South Asia Energy Division (2010-2015), ADB, covering energy sector operations in Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka. In this capacity, he led ADB's support to renewable energy, energy efficiency and power trade in South Asia. He also served as ADB's Lead Energy Specialist (2008-2010), in charge of energy sector in Southeast Asia including Indonesia, Philippines, and the Greater Mekong Subregion (GMS).

From 1993 to 2000, Dr. Zhai was a Principal Program Coordinator/Public Utilities Economist at the African Development Bank (AfDB) in charge of energy projects in Southern African Development Community (SADC). Between 1990 and 1993, he served as an Assistant Professor at the Energy Technology Division (Energy Policy and Planning), Asian Institute of Technology (AIT) in Bangkok, Thailand.

Dr. Yongping Zhai graduated from the Thermal Energy Engineering Department, Tsinghua University, Beijing, China (1983) and received a Ph.D in Energy Economics from Institute of Energy Economics and Policy, affiliated with the University of Pierre-Mendès France in Grenoble, France (1989).

## Calling for Proposals

# Applied Energy Summer School 2019

**Applied Energy Summer School (AEss)**, associated with *Applied Energy* journal, a top journal on energy engineering with Impact Factor 7.900, and *UNiLABs*, a specialized platform to facilitate networking and communications and strengthen the multi-disciplinary collaborations, aims to build an academic, professional and persistent community for young scholars and experts by providing training courses, teamwork projects, plant tour opportunities and career development.

The missions of AEss are:

- Co-location to foster collaboration, innovation and multi-disciplinary comprehension through face-to-face communication and training courses;
- Collaboration to lead to creative integration and system solutions to complex problems by exploring linkages among different energy system components and developing a framework of system integration;
- Co-production to simulate and facilitate technology innovations with industrial and business sectors for commercialization.
- Career development to shape the future of youth with interactive exchange with editors, entrepreneurs, product producers, decision makers and investors;

AEss invites highly motivated international students (undergraduate, postgraduate and doctoral students) and young scientists and engineers from various academic and industrial backgrounds to join us.

Now we open Applied Energy Summer School platform for the hosts who could provide a dynamic learning environment, the perfect opportunity to meet and collaborate with students and researchers from around the globe. The topics are mainly on:

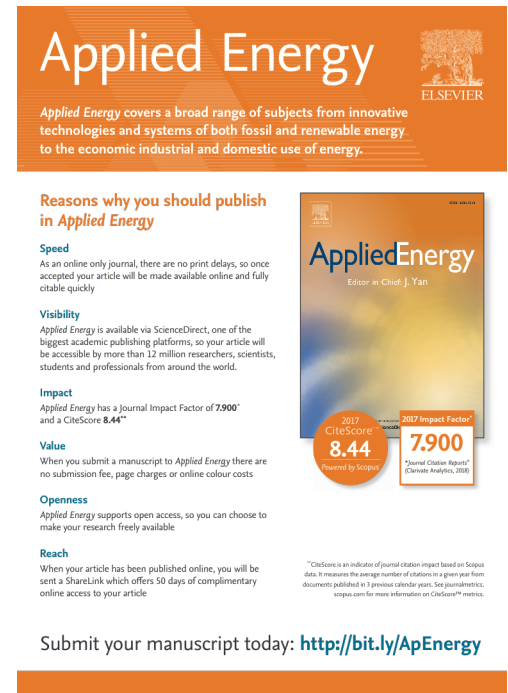
- Renewable energy
- Clean energy conversion technologies
- Mitigation technologies
- Intelligent energy systems
- Energy storage
- Sustainability of energy systems

Please send your proposal based on the attached template [sumerschool2019@applied-energy.org](mailto:sumerschool2019@applied-energy.org) as soon as possible but no later than March. 31, 2019.

For more information on Applied Energy, please visit <https://www.journals.elsevier.com/applied-energy>. If you have any question, please do not hesitate to contact: [sumerschool2019@applied-energy.org](mailto:sumerschool2019@applied-energy.org)

We are looking forward for the cooperation!

Professor Jinyue Yan  
Editor-in-Chief of Applied Energy



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# Applied Energy

## Best Papers of ICAE2017

- A Counter-Flow-Based Dual-Electrolyte Protocol for Multiple Electrochemical Applications, *Lu, X., Wang, Y., Leung, D.Y.C., Xuan, J., Wang, H.*
- Multi-level configuration and optimization of a thermal energy storage system using a metal hydride pair, *Feng, P., Wu, Z., Zhang, Y., Yang, F., Wang, Y., Zhang, Z.*
- Electrochemical conversion technologies for optimal design of decentralized multi-energy systems: modeling framework and technology assessment, *Gabrielli, P., Gazzani, M., Mazzotti, M.*
- Data-driven Urban Energy Simulation (DUE-S): A framework for integrating engineering simulation and machine learning methods in a multi-scale urban energy modeling workflow, *Nutkiewicz, A., Yang, Z., Jain, R.K.J.*
- Experimental evaluation of model-based control strategies of sodium-nickel chloride battery plus supercapacitor hybrid storage systems for urban electric vehicles, *Capasso, C., Lauria, D., Veneri, O.*
- A solar methane reforming reactor design with enhanced efficiency, *Jin, J., Wei, X., Liu, M., Yu, Y., Li, W., Kong, H., Hao, Y.*
- The energy-mineral-society nexus - A social LCA model, *Schlör, H., Venghaus, S., Zapp, P., Marx, J., Schreiber, A., Hake, J.-Fr.*
- Quantifying the impact of urban climate by extending the boundaries of urban energy system modeling, *Perera, A.T.D., Coccolo, S., Scartezzini, J.L., Mauree, D.*





# Applied Energy

## Awards of Highly Cited Research Papers

- The effect of renewable energy consumption on economic growth: Evidence from top 38 countries, *Bhattacharya, M., Paramati, S.R., Ozturk, I., Bhattacharya, S.*
- An improved perturb and observe (P&O) maximum power point tracking (MPPT) algorithm for higher efficiency, *Ahmed, J., Salam, Z.*
- Longevity-conscious dimensioning and power management of the hybrid energy storage system in a fuel cell hybrid electric bus, *Hu, X., Johannesson, L., Murgovski, N., Egardt, B.*
- Consumption-based emission accounting for Chinese cities, *Mi, Z., Zhang, Y., Guan, D., Shan, Y., Liu, Z., Cong, R., Yuan, X.-C., Wei, Y.-M.*
- A systematic state-of-charge estimation framework for multi-cell battery pack in electric vehicles using bias correction technique, *Sun, F., Xiong, R., He, H.*
- An assessment of solar-powered organic Rankine cycle systems for combined heating and power in UK domestic applications, *Freeman, J., Hellgardt, K., Markides, C.N.*
- Modelling and optimization of CHP based district heating system with renewable energy production and energy storage, *Wang, H., Yin, W., Abdollahi, E., Lahdelma, R., Jiao, W.*
- A hybrid thermal management system for lithium ion batteries combining phase change materials with forced-air cooling, *Ling, Z., Wang, F., Fang, X., Gao, X., Zhang, Z.*
- Pumped storage-based standalone photovoltaic power generation system: Modeling and techno-economic optimization, *Ma, T., Yang, H., Lu, L., Peng, J.*
- Impact of energy conservation policies on the green productivity in China's manufacturing sector: Evidence from a three-stage DEA model, *Li, K., Lin, B.*
- Urban energy consumption: Different insights from energy flow analysis, input-output analysis and ecological network analysis, *Chen, S., Chen, B.*
- Power-to-gas plants and gas turbines for improved wind energy dispatchability: Energy and economic assessment, *Guandalini, G., Campanari, S., Romano, M.C.*
- Multiplicative decomposition of aggregate carbon intensity change using input-output analysis, *Su, B., Ang, B.W.*
- Multi-objective optimization of the building energy performance: A simulation-based approach by means of particle swarm optimization (PSO), *Delgarm, N., Sajadi, B., Kowsary, F., Delgarm, S.*
- Operational flexibility and economics of power plants in future low-carbon power systems, *Brouwer, A.S., van den Broek, M., Seebregts, A., Faaij, A.*
- Energy justice: Conceptual insights and practical applications, *Sovacool, B.K., Dworkin, M.H.*
- Optimization for a hybrid energy storage system in electric vehicles using dynamic programming approach, *Song, Z., Hofmann, H., Li, J., Han, X., Ouyang, M.*



# Applied Energy

## Awards of Highly Cited Review Papers

- Overview of current development in electrical energy storage technologies and the application potential in power system operation, *Luo, X., Wang, J., Dooner, M., Clarke, J.*
- Review of energy storage system for wind power integration support, *Zhao, H., Wu, Q., Hu, S., Xu, H., Rasmussen, C.N.*
- Review of natural gas hydrates as an energy resource: Prospects and challenges, *Chong, Z.R., Yang, S.H.B., Babu, P., Linga, P., Li, X.S.*
- Smart Energy Systems for coherent 100% renewable energy and transport solutions, *Mathiesen, B.V., Lund, H., Connolly, D., Wenzel, H., Ostergaard, P.A., Möller, B., Nielsen, S., Ridjan, I., KarnOe, P., Sperling, K., Hvelplund, F.K.*
- A review on dark fermentative biohydrogen production from organic biomass: Process parameters and use of by-products, *Ghimire, A., Frunzo, L., Pirozzi, F., Trably, E., Escudie, R., Lens, P.N.L., Esposito, G.*
- Recent advances in the use of different substrates in microbial fuel cells toward wastewater treatment and simultaneous energy recovery, *Pandey, P., Shinde, V.N., Deopurkar, R.L., Kale, S.P., Patil, S.A., Pant, D.*
- Shale gas and non-aqueous fracturing fluids: Opportunities and challenges for supercritical CO<sub>2</sub>, *Middleton, R.S., Carey, J.W., Currier, R.P., Hyman, J.D., Kang, Q., Karra, S., Jiménez-Martínez, J., Porter, M.L., Viswanathan, H.S.*
- Heat transfer fluids for concentrating solar power systems - A review, *Vignarooban, K., Xu, X., Arvay, A., Hsu, K., Kannan, A.M.*
- Recent development and application of thermoelectric generator and cooler, *He, W., Zhang, G., Zhang, X., Ji, J., Li, G., Zhao, X.*
- Application of phase change materials for thermal energy storage in concentrated solar thermal power plants: A review to recent developments, *Xu, B., Li, P., Chan, C.*
- Photovoltaic self-consumption in buildings: A review, *Luthander, R., Widén, J., Nilsson, D., Palm, J.*
- A review on life cycle assessment, life cycle energy assessment and life cycle carbon emissions assessment on buildings, *Chau, C.K., Leung, T.M., Ng, W.Y.*
- Energy storage technologies and real life applications – A state of the art review, *Aneke, M., Wang, M.*
- Progress in oxygen carrier development of methane-based chemical-looping reforming: A review, *Tang, M., Xu, L., Fan, M.*
- Thermal energy storage for low and medium temperature applications using phase change materials - A review, *Pereira da Cunha, J., Eames, P.*
- A comprehensive review of lithium-ion batteries used in hybrid and electric vehicles at cold temperatures, *Jaguemont, J., Boulon, L., Dubé, Y.*



# Applied Energy

## Awards of Best Reviewers

Giorgio Besagni, Ricerca sul Sistema Energetico - RSE S.p.A., Italy

Zhongbao Wei, Nanyang Technological University, Singapore

Enhua Wang, Beijing Institute of Technology, China

Qie Sun, Shandong University, China

Mahmoud Moeini Sedeh, Auburn University, United States

Tanvir Tanim, Idaho National Laboratory, United States

Shuai Deng, Tianjin University, China

Qiu-An Huang, Hubei University, China

Edward Anthony, Cranfield University, United Kingdom

Wei Wang, Curtin University, Australia

Puiki Leung, Oxford University, United Kingdom

Haifeng Dai, Tongji University, China



# Applied Energy

## Awards of Best Volunteers

Mr. Bin Chen

Ms. Jiake Fang

Dr. Jie Yang

Dr. Jingchun Feng

Mr. Mingkun Jiang

Dr. Pietro Elia Campana

Dr. Ray (Zhenhua) Rui

Ms. Saige Wang

Mr. Weiming Chen

Ms. Worrada Nookuea

Mr. Yang Zhang

Ms. Ying Yang

Mr. Yuting Tan

Dr. Zhi-en Zhang

Ms. Haiying Sun

Ms. Yunran Min

## Important Notes:

1. All site visits should be reserved on site together with the conference registration.
2. Transportation/lunch fees will be charged on site as appropriate.
3. Visa for entry to China is required for Trip 2, so please apply for a valid visa in advance.

## Trip 1 (50 max): Tour of Solar farm at Siu Ho Wan Sewage Treatment Works

**Aug 26 2018**

- 9:00 - Departure from PolyU campus
- 10:00 - 11:30 - Tour of Solar farm at Siu Ho Wan Sewage Treatment Works
- 12:00 - Back to PolyU campus



The solar farm at the Siu Ho Wan Sewage Treatment Works of the Drainage Services Department (DSD) came into operation on December 2016. The largest of its kind in Hong Kong, the solar farm comprises over 4,200 polycrystalline photovoltaic panels with an installed generation capacity of 1,100 kilowatts. It can generate as much as 1.1 million kilowatt-hours of electricity annually. The electricity generated by the solar farm at Siu Ho Wan Sewage Treatment Works will be fed through an internal power distribution network to various facilities inside the plant, including screening facilities, a workshop, an administration building, an ultra-violet disinfection system and sludge treatment facilities, which account for about 25% of the current annual electricity consumption of the plant.

## Trip 2 (50 max): Tour of Shenzhen Low Carbon Construction Achievements

**Aug 27 2018**

- 09:00 - Departure from PolyU campus
- 10:00 - Arrival at the International Low Carbon City
- 10:00 - 11:00 - Tour of the Low Carbon City and DC building open laboratory
- 11:00-12:00 - Bus to the Shenzhen IBR building
- 12:00-13:30 - Lunch
- 13:30-14:30 - Tour of the Shenzhen IBR building
- 14:30-15:00 - Bus to the Shenzhen Bay Eco-Technology Park
- 15:00-16:30 - Tour of the Shenzhen Bay Eco-Technology Park
- 17:00 - Back to PolyU campus



**Shenzhen International Low Carbon City** is one of the 10 flagship projects of the China-EU Urbanization Partnership signed by Premier Li Keqiang in May 2012 with the chairman of the European Commission. The involved area includes the Pingdi Subdistrict of the Longgang District, with a planned area of 53.4 km<sup>2</sup>. Based on the emerging low carbon industrial clusters, the city is driven by institutional innovation and gathers international advanced low carbon technologies and management measures. With the high-standard orientation, high start point planning and high-level construction, the project plays a leading role in promoting industrial transformation and upgrading, transforming economic development mode, and exploring the "intensive, intelligent, green, low carbon" urbanization road.

**DC building open laboratory** is located in the International Low Carbon City, the 500 m<sup>2</sup> open laboratory has been built and put into operation. Based on the future cube of the low carbon city, the laboratory realizes the comprehensive transformation from traditional AC power supply to DC power supply.

**Shenzhen IBR building** is located at No. 29, Meiao 3<sup>rd</sup> Road, Shangmeilin, Futian District, Shenzhen, the IBR building covers an area of 3,000 m<sup>2</sup>, with a total construction area of 18,000 m<sup>2</sup>, 12 floors on the ground and 2 floors below the ground. In this propagable and populist green R&D office building, the functional areas with similar features, space requirements, and organizations are vertically located based on the climate characteristics of hot summer and warm winter, enclosed with the external retaining that meets different requirements. The entire building from inside to outside shows a unique natural structure.

**Shenzhen Bay Eco-Technology Park** is located in the core area of high-tech zone in the South District of Shenzhen high-tech Industrial Park. The park covers an area of 203,100 m<sup>2</sup>, with a total building area of 1,870,000 m<sup>2</sup>. The total area of the project is 1,218,000 m<sup>2</sup>, including industrial housing, office, business, hotel, and apartment. The total investment was 15 billion yuan and the park was completed in April 2016. The project is a 3<sup>rd</sup> generation industrial park based on the "vertical city, green architecture" concept, integrating the functions of production, life, and ecology. The industrial area accounts for 70% of the total park, which attracts the headquarters of high-tech enterprises and R&D of strategic emerging industries.

## General Information

Hong Kong is a Special Administrative Region of the People's Republic of China. It is a territory of about 1070 km<sup>2</sup> located at the trading crossroads of Asia. Hong Kong is one of the world's leading economies, a major manufacturing and international financial centre, the world's busiest container port and the main gateway to the Chinese mainland.

## Weather and clothing

Temperature and humidity remain high in August, with occasional showers, thunderstorms and typhoons. The average low and high temperatures are 26 °C (79 °F) and 31 °C (88 °F). August is the wettest month, with 445 mm (18 in) of rain falling during an average of 17 days. Wear summer clothes and sun protection.

## Currency

The current exchange rate is US\$1 = HK\$7.8 approximately. Most foreign currencies can be freely exchanged at banks, shops and money changers. There is no exchange control for inward or outward remittances. Travelers' cheques and major credit cards are widely accepted.

## Electricity

The voltage and frequency used in Hong Kong are 220 volts and 50 Hz, respectively.

## Time difference

UTC/GMT +08:00

## Travel guide

For tourist information about Hong Kong, visit <http://www.discoverhongkong.com/eng/index.jsp>

## Transport

### **FROM SHENZHEN AIRPORT**

1. Shenzhen Airport to Luo Wu Station: Subway line 1 (Luobao line)
2. Pass the Shenzhen to Hong Kong custom
3. Luo Wu Station to Hung Hom Station: MTR East Rail Line
4. Walk to the Hong Kong Polytechnic University main campus from Exit A1 (Hung Hom Station)

### **FROM HONG KONG INTERNATIONAL AIRPORT**

#### **Route A**

1. Hong Kong Airport to Tsing Yi Station: MTR Airport Express Line
2. Tsing Yi Station to Nam Cheong Station: MTR Tung Chung Line
3. Nam Cheong Station to Hung Hom Station: MTR West Rail Line
4. Walk to the Hong Kong Polytechnic University main campus from Exit A1 (Hung Hom Station)

#### **Route B**

1. Hong Kong Airport to Hung Hom Station: CityBus A21
2. Walk to the Hong Kong Polytechnic University main campus via Exit A1 (Hung Hom Station)

(Note: MTR is Hong Kong's subway system)



## **UNiLAB**

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# Programme at a Glance

Registration: Aug 22: 14:00 - 17:00 (Room BC202); Aug 23: 8:00 - 12:00 (Jockey Club Auditorium), 13:00-17:00 (Room BC202); Aug 24: 8:00-17:00 (Room BC202); August 25: 8:00-12:00 (BC202)																		
Time	Day 1: Aug 23																	
09:00-09:15	Opening (Jockey Club Auditorium)																	
09:15-09:45	Keynote 1																	
09:45-10:15	Keynote 2																	
10:15-10:45	Tea/Coffee Break																	
10:45-11:15	Keynote 3																	
11:15-11:45	Keynote 4																	
11:45-13:00	Lunch																	
13:00-13:40	Poster Session I																	
Afternoon	1-A3	1-B3	1-C3	1-D3	1-E3	1-F3	1-G3	1-H3	1-I3	1-J3	1-K3	1-L3	1-M3	1-N3	1-O3	1-P3	1-Q3	1-R3
13:40-15:20	RE	RE	RE	CLE	EM	CLE	IES	IES	IES	EM	EM	MT	MT	MT	SS	SS	IES	
15:20-15:50	Tea/Coffee Break																	
Afternoon	1-A4	1-B4	1-C4	1-D4	1-E4	1-F4	1-G4	1-H4	1-I4	1-J4	1-K4	1-L4	1-M4	1-N4	1-O4	1-P4	1-Q4	1-R4
15:50-17:50	RE	RE	CLE	CLE	CLE	CLE	SS	EM	EM	EM	EM	MT	MT	MT	ES	ES	GEO	
18:00-19:00	Editorial Board Meeting																	
Time	Day 2: Aug 24																	
Morning	2-A1	2-B1	2-C1	2-D1	2-E1	2-F1	2-G1	2-H1	2-I1	2-J1	2-K1	2-L1	2-M1	2-N1	2-O1	2-P1	2-Q1	2-R1
08:40-10:20	RE	RE	RE	CLE	CLE	CLE	CLE	IES	IES	EM	EM	SS	MT	ES	ES	SS	RE	
10:20-10:40	Tea/Coffee Break																	
Morning	2-A2	2-B2	2-C2	2-D2	2-E2	2-F2	2-G2	2-H2	2-I2	2-J2	2-K2	2-L2	2-M2	2-N2	2-O2	2-P2	2-Q2	2-R2
10:40-12:20	RE	RE	RE	RE	CLE	CLE	CLE	IES	IES	EM	SS	EM	MT	ES	ES	SS	RE	
12:20-13:20	Lunch																	
13:20-14:00	Poster Session II																	
Afternoon	2-A3	2-B3	2-C3	2-D3	2-E3	2-F3	2-G3	2-H3	2-I3	2-J3	2-K3	2-L3	2-M3	2-N3	2-O3	2-P3	2-Q3	2-R3
14:00-15:40	RE	RE	RE	CLE	CLE	CLE	CLE	IES	IES	EM	EM	EM	MT	ES	ES	SS	RE	
15:40-16:00	Tea/Coffee Break																	
Afternoon	2-A4	2-B4	2-C4	2-D4	2-E4	2-F4	2-G4	2-H4	2-I4	2-J4	2-K4	2-L4	2-M4	2-N4	2-O4	2-P4	2-Q4	2-R4
16:00-18:00	RE	RE	CLE	CLE	CLE	EM	EM	EM	EM	EM	EM	MT	MT	ES	ES	GEO	GEO	
18:45-22:00	Conference Banquet																	
Time	Day 3: Aug 25																	
Morning	3-A1	3-B1	3-C1	3-D1	3-E1	3-F1	3-G1	3-H1	3-I1	3-J1	3-K1	3-L1	3-M1	3-N1	3-O1	3-P1	3-Q1	3-R1
08:40-10:20	RE	RE	RE	RE	RE	CLE	SS	IES	IES	IES	EM	MT	MT	ES	ES	SS	IES	
10:20-10:40	Tea/Coffee Break																	
Morning	3-A2	3-B2	3-C2	3-D2	3-E2	3-F2	3-G2	3-H2	3-I2	3-J2	3-K2	3-L2	3-M2	3-N2	3-O2	3-P2	3-Q2	3-R2
10:40-12:20	RE	RE	RE	RE	RE	CLE	CLE	IES	IES	IES	EM	MT	ES	ES	ES	IES	SS	
12:20-13:20	Lunch																	
Afternoon	3-A3	3-B3	3-C3	3-D3	3-E3	3-F3	3-G3	3-H3	3-I3	3-J3	3-K3	3-L3	3-M3	3-N3	3-O3	3-P3	3-Q3	3-R3
13:20-15:00	RE	RE	RE	RE	RE	SS	CLE	IES	IES	IES	EM	MT	ES	ES	ES	SS	SS	
15:00-15:20	Tea/Coffee Break																	
Afternoon	3-A4	3-B4	3-C4	3-D4	3-E4	3-F4	3-G4	3-H4	3-I4	3-J4	3-K4	3-L4	3-M4	3-N4	3-O4	3-P4	3-Q4	3-R4
15:20-17:20	RE	CLE	GEO	GEO	EM	EM	EM	EM	SS	ES	MT	MT	MT	ES	ES			

MT = Mitigation technology and energy storage
CLE=Clean energy conversion technology
EM=Energy Management, Policy and Economics
ES=Energy Sciences
IES=Intelligent energy system
RE=Renewable Energy
GEO=Geoenergy
SS=Special Session
Panel Session

# CSEE Journal of Power and Energy Systems

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# Speaker's Guide

## Presentation

Length of presentation material should be in accordance with your allocated time. You are requested to load your presentation files before the session starts. Each oral presentation at the breakaway venues is limited to 20 minutes, which include the questions and answers. Please refer to this program booklet for actual presentation times. You are kindly requested to be present in the relevant presentation venue at least 10 minutes before the session starts. Each presentation room is equipped with a laptop computer with a data projector. PowerPoint is the standard presentation format. The computers in the meetings rooms are provided to Window-based PC Users. Conference volunteers will be available to assist you in case you encounter difficulties to use the IT equipment.

## Presentation Venues

The following table lists all the presentation venues with abbreviations, which are used in the detailed programme in the late part of this booklet.

Session	Room		
	Day1	Day2	Day3
A	BC202	BC202	BC202
B	FJ301	FJ301	FJ301
C	BC305	BC305	BC305
D	BC402	BC402	BC402
E	BC404	BC404	BC404
F	FJ302	FJ302	FJ302
G	FJ303	FJ303	FJ303
H	HJ203	HJ203	HJ203
I	HJ209	HJ209	HJ209
J	HJ210	HJ210	HJ210
K	HJ304	HJ304	HJ304
L	FJ304	FJ304	FJ304
M	BC203	QR512	BC203
N	HJ303	HJ303	BC301
O	BC201	QR504	BC302
P	HJ302	QR514	BC303
Q	BC304	BC304	BC304
R	HJ305	HJ305	HJ303
<b>Poster</b>	AG206/N101	AG206	

# Panel Sessions

<b>Day 1</b> <b>13:40-15:20</b> <b>HJ305</b>	<b>Higher Education and Training on Renewable Energy Topics: Open issues, Present Status and Future Development</b>
<b>Day 1</b> <b>15:50-17:50</b> <b>HJ305</b>	<b>UNiLAB - ESI</b>
<b>Day 2</b> <b>09:00-12:30</b> <b>BC201</b>	<b>Policies &amp; Market Mechanism - Renewable Energy Promotion (Workshop)</b>
<b>Day 2</b> <b>08:40-10:20</b> <b>HJ305</b>	<b>Porous Materials for Biogas Upgrading &amp; Storage - I</b>
<b>Day 2</b> <b>10:40-12:20</b> <b>HJ305</b>	<b>Porous Materials for Biogas Upgrading &amp; Storage - II</b>
<b>Day 2</b> <b>14:00-15:40</b> <b>HJ305</b>	<b>The Development of Hydrate Exploitation and Utilization Technology in Future</b>
<b>Day 2</b> <b>16:00-18:00</b> <b>HJ305</b>	<b>UNiLAB - DEM</b>
<b>Day 3</b> <b>08:40-10:20</b> <b>HJ303</b>	<b>Clean Combustion of Solid Fuels</b>
<b>Day 3</b> <b>10:40-12:20</b> <b>HJ303</b>	<b>Scholarly Publication</b>

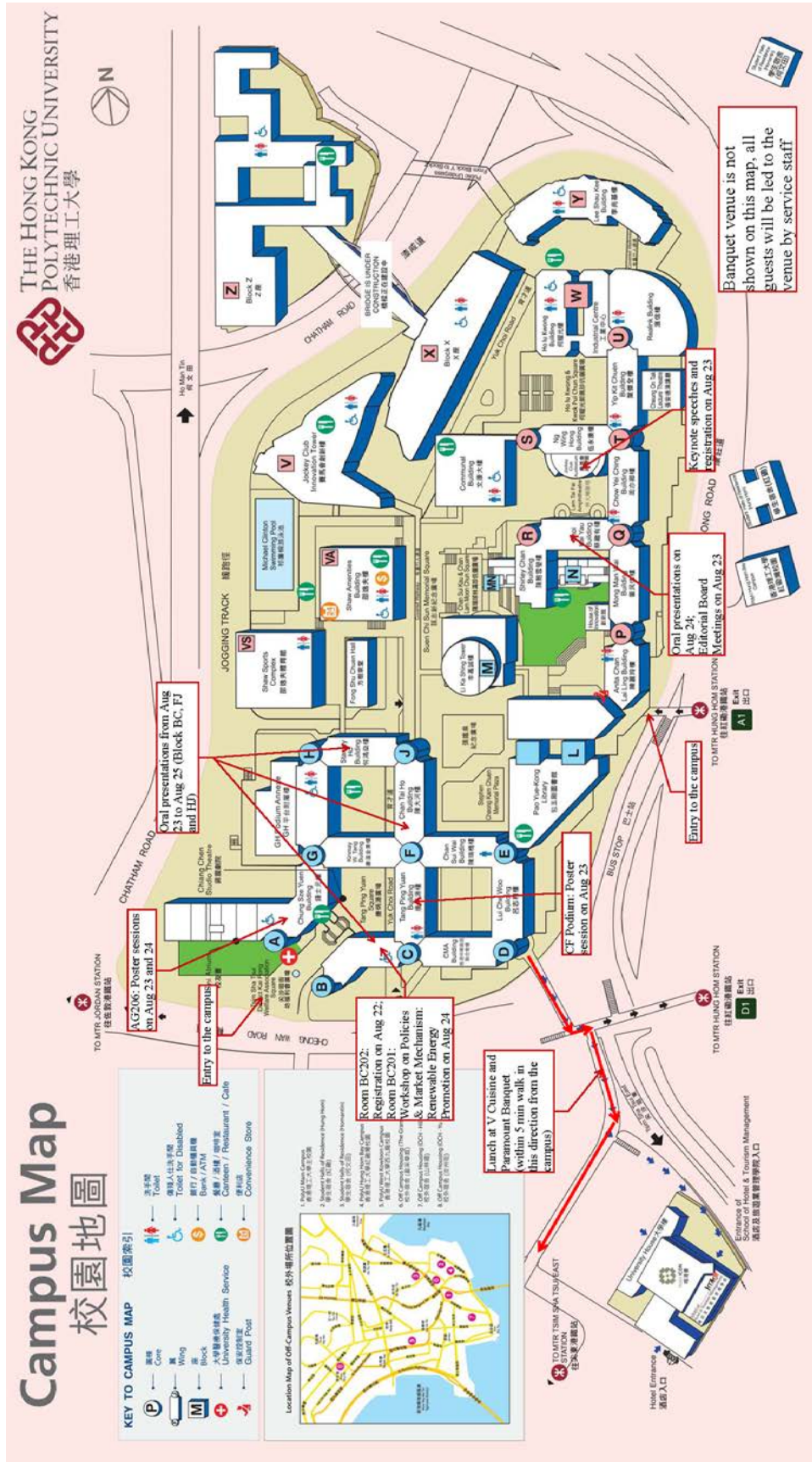
# Special Sessions

Session Title	Time and Venue
Integrated Planning And Optimal Operation Of Urban Energy Systems	<i>Day 1: 13:40-15:20; BC201</i>
	<i>Day 2: 08:40-10:20; QR514</i>
	<i>Day 2: 10:40-12:20; QR514</i>
Transactive Energy System For Integrating Distributed Energy Resources	<i>Day 2: 14:00-15:40; QR514</i>
	<i>Day 3: 08:40-10:20; BC303</i>
AI For Energy-Cyber-Physical Systems	<i>Day 3: 15:20-17:20; HJ209</i>
Optimal Operation Of Hydro, Wind, Solar Power And Their Integration	<i>Day 1: 13:40-15:20; HJ302</i>
	<i>Day 3: 10:40-12:20; BC304</i>
	<i>Day 3: 13:20-15:00; BC303</i>
	<i>Day 3: 13:20-15:00; BC304</i>
Catalytic Effects In Solid Combustion	<i>Day 1: 15:50-17:50; FJ303</i>
Urban Energy Systems Design In The IoT Era	<i>Day 2: 10:40-12:20; HJ304</i>
Water-Energy Nexus	<i>Day 2: 08:40-10:20; FJ304</i>
Next Generation Advanced Gas Turbine Cycle	<i>Day 3: 08:40-10:20; FJ303</i>
	<i>Day 3: 13:20-15:00; FJ302</i>
Geo-energy	<i>Day 1: 15:50-17:50; BC304</i>
	<i>Day 2: 16:00-18:00; QR514</i>
	<i>Day 2: 16:00-18:00; BC304</i>
	<i>Day 3: 15:20-17:20; BC305</i>
	<i>Day 3: 15:20-17:20; BC402</i>

# Venue Information

## Conference Venue

The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong.



# Day 1

# Oral Presentations

09:00-09:15	<b>OPENING</b>		
09:15-09:45	<b>Keynote 1</b>		
09:45-10:15	<b>Keynote 2</b>		
10:15-10:45	<b>TEA/COFFEE BREAK</b>		
10:45-11:15	<b>Keynote 3</b>		
11:15-11:45	<b>Keynote 4</b>		
11:45-13:00	<b>LUNCH</b>		
13:00-13:40	<b>POSTER SESSION I</b> <b>Room: AG206</b>		
<b>Room: BC202</b> <b>Session Name: Biodiesel I</b> <b>Session Chair: Wei-Hsin Chen, Xinhai Yu</b>			
Time	Paper ID	Author	Paper Title
13:40-14:00	275	Tiejun Wang	Hydrothermal Conversion Of Biomass To Higher Alcohol Fuels For Compression Ignition Engine
14:00-14:20	996	Marco Bietresato, Massimiliano Renzi, Carlo Caligiuri, Fabrizio Mazzetto	Use Of Diesel-Biodiesel-Bioethanol Blends In Farm Tractors: First Results Obtained With A Mixed Experimental-Numerical Approach
14:20-14:40	334	Bayu Rudiyanto, Muhamad Andrianto, Yuana Susmiati, Nugroho Agung Pambudi, Riyanto	Optimization And Validation Of Hydrated Magnesium Silicate On Dry Washing Purification Biodiesel Using Response Surface Methodology
14:40-15:00	1289	Astri Rinanti	Increasing Carbohydrate And Lipid Productivity In Tropical Microalgae Biomass As A Sustainable Biofuel Feed Stock
15:00-15:20	602	Yanuandri Putrasari, Kyeonghun Jwa, Ocktaeck LIM	Influence Of EGR And Intake Boost On GCI Engine Fueled With Gasoline-Biodiesel Blend Using Early Single Injection Mode
<b>Room: FJ301</b> <b>Session Name: Solar PV applications I</b> <b>Session Chair: Vivien Lu, Kai Wang</b>			
Time	Paper ID	Author	Paper Title
13:40-14:00	313	Wenqiang Chen, Danny H W Li, Siwei Lou	Estimation Of Irregular Obstructed Vertical Sky Components Under Various CIE Skies
14:00-14:20	386	Xing Ju, Xinyu Pan, Chao Xu	Multi-Physics Effects On The Performance Of Dense-Array Concentrator Photovoltaic System
14:20-14:40	463	Liu Yuhan, Li Zhu, Yang Yang, Sarula Chen	Multi-Objective Optimization Of SOLAR Curved Surface Based On Parametric Design
14:40-15:00	589	Ke Sun, Shaojie Liu	Effects Of Particle Concentration, Deposition And Accumulation On Photovoltaic Device Surface
15:00-15:20	677	Luyao Liu, Qie Sun, Yu Wang, Yi Zhao, Ronald Wennersten	Use Of A Weight-Varying Ensemble Method To Forecast Short-Term PV Power Output
<b>Room: BC305</b> <b>Session Name: Solar PV applications II</b> <b>Session Chair: Qibin Liu, Tao Ma</b>			
Time	Paper ID	Author	Paper Title
13:40-14:00	688	Zhe Zhang, Yoh Nagasaki, Daisuke Miyagi, Makoto Tsuda, Takataro Hamajima, Toshihiro Komagome, Kenichi Tsukada, Hiroaki Ayakawa, Yutaka Ishii, Daisuke Yonekura	Study On Management Method Of Stored Energy In An Electric And Hydrogen Hybrid Energy Storage System For Emergency Power Supply And Solar Power Fluctuation Compensation
14:00-14:20	734	Changyu Qiu, Hongxing Yang, Haiying Sun	Investigation On The Thermal Performance Of A Novel Vacuum PV Glazing In Different Climates
14:20-14:40	799	Bernard, Lip Huat Saw, Weng Cheong Tan, Hui San Thiam, Garg Akhil, Nugroho Agung Pambudi	Numerical Study Of The Geometrically Graded Metal Foam For Concentrated Photovoltaic Solar Cell Cooling
14:40-15:00	822	Ruilin Wang, Jie Sun, Hui Hong	Performance Analysis Of A Novel Hybrid Solar Power System Integrated With Concentrating Photovoltaic (CPV), Direct Steam Generation (DSG) And Chemical Heat Pump (CHP) Technologies
15:00-15:20	845	Mo Po Jen	Enhanced Stability Of Perovskite Solar Cells With Vitamin C Anti-Oxidant

# Day 1

# Oral Presentations

Room: BC402

Session Name: Advanced combustion and gasification of fossil fuel I

Session Chair: Kunio Yoshikawa

Time	Paper ID	Author	Paper Title
13:40-14:00	127	Yaojie Tu, Wenming Yang	A Comparative Study Of Methane MILD Combustion In O <sub>2</sub> /N <sub>2</sub> , O <sub>2</sub> /CO <sub>2</sub> And O <sub>2</sub> /H <sub>2</sub> O
14:00-14:20	186	Shien Hui, Qi Yao, Denghui Wang, Yanqing Niu	Effect Of Oxygen On N <sub>2</sub> O And NO Formation From NH <sub>3</sub> Oxidation Over MnOx/TiO <sub>2</sub> Catalysts
14:20-14:40	946	Isam Janajreh Janajreh, Almazrouei Manar, Sherien Elagroudy	Transesterification Of Waste Cooking Oil: Quality Assessment Via Thermogravimetric Analysis
14:40-15:00	416	Luyao Tang, Yuxin Yan, Yang Meng, Jiayu Wang, Peng Jiang, Cheng Heng Pang, Tao Wu	CO <sub>2</sub> Gasification And Pyrolysis Reactivity Evaluation Of Oil Shale
15:00-15:20	681	Victor Castaneda, Agustin Valera-Medina	Coanda Flames For Development Of Flat Burners

Room: BC404

Session Name: Carbon emission trading I

Session Chair: Xunpeng Shi, Jingli Fan

Time	Paper ID	Author	Paper Title
13:40-14:00	64	Mei Song, Yaxu Zhu	Analysis On Spatiotemporal Regularity Of CO <sub>2</sub> Emission Intensity In China
14:00-14:20	354	Xinghua Fan, Xuxia Li, Jiuli Yin	Dynamic Relationship Between Carbon Price And Coal Price: Perspective Based On Detrended Cross-Correlation Analysis
14:20-14:40	531	Haijun Zhang, Maosheng Duan, Peng Zhang	Analysis Of The Impact Of China's Emissions Trading Scheme On Reducing Carbon Emissions
14:40-15:00	820	Jiake Fang, Saige Wang, Yiyi Zhang, Bin Chen	Optimization Of Electricity Generation-Transmission In China Based On Regional Water Resources And Energy Resources
15:00-15:20	948	Shurui Jiang, Wang Jingyou, Shi Lei, Ma Zhong	Impact Of Energy Consumption And Air Pollution On Economic Growth In Impact Of Energy Consumption And Air Pollution On Economic Growth —An Empirical Study Based On Dynamic Spatial Durbin Model

Room: FJ302

Session Name: Heat pumps and refrigeration systems I

Session Chair: Yiji Lu, Kim Choon Ng

Time	Paper ID	Author	Paper Title
13:40-14:00	34	Alexander Soh, Swapnil Dubey	Performance Study Of CO <sub>2</sub> Heat Pump Under Tropical Conditions Of Singapore
14:00-14:20	47	Zhihua Wang	Study On Performance Evaluation Of CO <sub>2</sub> Heat Pump System Integrated With Thermal Energy Storage For Space Heating
14:20-14:40	92	Christopher Olkis, Giulio Santori, Stefano Brandani	A Small-Scale Adsorption Desalinator
14:40-15:00	126	Kian Jon Chua, Jie Lin	On The Dimensional Analysis Of A Cross-Flow Flat-Plate Membrane Liquid Desiccant Dehumidifier
15:00-15:20	1076	Huaxia Yan, Yudong Xia, Shiming Deng	Adaptive Control For Degree Of Refrigerant Superheat In A Direct Expansion Air Conditioning System Under Variable Speed Operation

Room: FJ303

Session Name: Smart buildings (energy system control and operation) I

Session Chair: Zhibin Yu, Christos Makides

Time	Paper ID	Author	Paper Title
13:40-14:00	75	Cheng Fan	Discovering Complex Knowledge In Massive Building Operational Data Using Graph Mining For Building Energy Management
14:00-14:20	440	Yujie Wu, Jérôme Kämpf, Jean-Louis Scartezzini	Daylighting Simulation For External Venetian Blinds Based On HDR Sky Luminance Monitoring With Matrix Algebraic Approach
14:20-14:40	504	Zhuang Zheng, Hainan Chen, Xiaowei Luo	Spatial Granularity Analysis On Electricity Consumption Prediction Using LSTM Recurrent Neural Network
14:40-15:00	673	Hector Bastida, Carlos E. Ugalde-Loo, Muditha Abeysekera, Meysam Qadrdan, Jianzhong Wu	Thermal Dynamic Modelling And Temperature Controller Design For A House
15:00-15:20	725	Charles Kagiri, Lijun Zhang, Xiaohua Xia	Receding Horizon Operation Control Of A Compressed Natural Gas Station



# Day 1

# Oral Presentations

Room: HJ203

Session Name: Grid integration of renewable energy sources

Session Chair: Jianzhong Wu

Time	Paper ID	Author	Paper Title
13:40-14:00	826	Maddalena Pondini, Valentina Colla, Annamaria Signorini, Stefano Barsali	Analysis Of A Simplified Steam Turbine Governor Model For Power System Stability Studies
14:00-14:20	980	Yoshiki Tomura, Tsuguhiko Nakagawa	Effective Utilization System Of Renewable Energy Through The Use Of Vehicles
14:20-14:40	1292	Kateryna Morozovska, Wadih Naim, Patrik Hilber	Effects Of Dynamic Line Rating On The Durability And Mechanical Strength Of Aluminum Cable Steel Reinforced (ACSR) Conductors
14:40-15:00	306	Chunping Bi, Yingshu Liu, Yao Zhao, Yao Wu	Energy Router With Load Switching Functionality
15:00-15:20	326	Yao Wu, Yingshu Liu, Ke Yang, Chunping Bi, Xi Chen, Yao Zhao	Novel Energy Router With Multiple Operation Modes

Room: HJ209

Session Name: Electric vehicles I

Session Chair: Ottorino Veneri, Bin Wang

Time	Paper ID	Author	Paper Title
13:40-14:00	1079	Yuchun Chu	Design Of Energy And Materials For Ammonia-Based Extended-Range Electric Vehicles
14:00-14:20	1096	Wang Ju, Rui Xiong	Double-Filters-Based State Of Charge Estimators Considering Wide Range Temperature
14:20-14:40	986	Linlin Fang, Li Junqiu, Bo Peng	Online Estimation And Error Analysis Of Both SOC And SOH Of Lithium-Ion Battery Based On DEKF Method
14:40-15:00	1161	Jun Xu, Xuesong Mei, Xiao Wang, Yunfei Zhao	Wavelet Based Relative State Of Health Estimation For Lithium-Ion Batteries
15:00-15:20	265	Yujie Wang, Zhendong Sun, Chen Zonghai	Rule-Based Energy Management Strategy Of A Lithium-Ion Battery, Supercapacitor And PEM Fuel Cell System

Room: HJ210

Session Name: Climate change policy I

Session Chair: Koji Tokimatsu, Andrea Trianni

Time	Paper ID	Author	Paper Title
13:40-14:00	400	Cheng Cheng, Xiaohang Ren, Zhen Wang	The Impact Of Renewable Energy And Innovation On Carbon Emission An Empirical Analysis For OECD Countries
14:00-14:20	535	Jing-Chun Feng, Xue-Lan Zeng, Zhi Yu, Shan Tang, Wei-Chi Li, Wei-Jia Xu	Status And Driving Forces Of CO2 Emission Of The National Low Carbon Pilot: Case Study Of Guangdong Province During 1995-2015
14:20-14:40	538	Xunzhang Pan, Lu Lin, Lining Wang	The Role Of Biomass In China's Mitigation Toward The Paris Climate Goals
14:40-15:00	710	Weiyu Li, Lixin Tian, Xingyu Gao, Humera Batool	Effects Of Dockless Bike-Sharing System On Public Bike System: Case Study In Nanjing, China
15:00-15:20	851	Jingli Fan	Coordinated Emission Mitigation Mechanism Of Beijing-Tianjin-Hebei Region In China: A Perspective From CO2 Emissions Embodied In Domestic Trade

Room: HJ304

Session Name: Climate change policy II

Session Chair: Qie Sun

Time	Paper ID	Author	Paper Title
13:40-14:00	1015	Hongdian Jiang, Qiaomei Liang	Research On Marginal Abatement Cost: A Bibliometric Analysis
14:00-14:20	1068	Etsushi Kato, Atsushi Kurosawa	Evaluation Of Japanese Energy System Toward 2050 With TIMES-Japan – Deep Decarbonization Pathways
14:20-14:40	1256	Jing-Chun Feng, Shan Tang, Zhi Yu	Integrated Development Of Economic Growth, Energy Consumption, And Environment Protection From Different Regions: Based On City Level
14:40-15:00	1333	Xiaoling Zhang, Xilong Yao	A Tug Of War Between Government And Enterprises In China's Carbon Reduction
15:00-15:20	238	Mingming Zhang, Liyun Liu	Evaluating Low-Carbon Transition Investment In China's Power Sector Based On A Real Options Model

# Day 1

# Oral Presentations

Room: FJ304

Session Name: Carbon capture and storage (CCS) I

Session Chair: Christine Chan, Zheming Tong

Time	Paper ID	Author	Paper Title
13:40-14:00	232	Farshad Barzegar, Damilola Y. Momodu, Fatemeh Taghizadeh, F. Danie Auret, Ncholu Manyala, Xiaohua Xia	Effect Of Radiation On The Performance Of Activated Carbon Base Supercapacitor: Part II. Influence Of Electron Irradiation Exposure On Full Cell
14:00-14:20	300	Siwei Meng, He Liu, Qinghai Yang	Exploration And Practice Of Carbon Sequestration Realized By CO <sub>2</sub> Waterless Fracturing
14:20-14:40	327	Xingguang Xu, Colin D. Wood	Carbon Capture By DEA-Infused Hydrogels
14:40-15:00	349	Helei Liu, Paitoon Tontiwachwuthikul	The Next Generation Carbon Capture Technology For The Carbon Competitive World
15:00-15:20	1180	Siyu Wei, Rui Han, Yanlin Su, Jihui Gao, Guangbo Zhao, Yukun Qin	Size Effect Of Calcium Precursor And Binder On CO <sub>2</sub> Capture Of Composite Cao-Based Pellets

Room: BC203

Session Name: Carbon capture and storage (CCS) II

Session Chair: Umberto Desideri, Xingguang Xu

Time	Paper ID	Author	Paper Title
13:40-14:00	379	Wan Zhang, Yingjie Li, Xiaotong Ma, Hantao Liu	Improvement In CO <sub>2</sub> Capture Capacity Of Cao In Presence Of Steam During Calcium Looping Cycles
14:00-14:20	398	Xianyao Yan, Yingjie Li, Xiaotong Ma, Hantao Liu	CO <sub>2</sub> Capture Performance Of Highly Active Ca-Based Sorbent From Solid Waste At Calcium Looping Conditions
14:20-14:40	421	Yue Zhang, Li Zhao, Shuai Deng, Xianhua Nie, Zhenyu Du	Molecular Dynamics Simulation On Carbon Dioxide Hydrate Formation
14:40-15:00	473	Ocean Cheung, Maria Vall, Jonas Hultberg, Maria Strømme	Carbon Dioxide Adsorption On Mesoporous Magnesium Carbonate
15:00-15:20	598	Massimo Rivarolo, Daria Bellotti, Loredana Magistri	Economic Feasibility Of Methanol Synthesis As A Method For CO <sub>2</sub> Reduction And Energy Storage

Room: HJ303

Session Name: Emissions reduction I

Session Chair: Xi Jiang, Wenbin Yu

Time	Paper ID	Author	Paper Title
13:40-14:00	776	Xiaohui Lin, Songping Mo, Lisi Jia, Zhi Yang, Ying Chen	Experimental Study On The Cooling Performance Of High-Power Light-Emitting Diodes Lamp By Thermoelectric Cooler Integrated With Water-Cooling Heat Exchanger
14:00-14:20	823	Xiuxia Zhang	Effect Of Alkali Metal Elements On Nitric Oxide Chemisorption At The Edge Of Char: A DFT Study
14:20-14:40	919	Jiehui Yuan	Modelling Of Environmental Benefit Evaluation Of Energy Transition To Multi-Energy Complementary System
14:40-15:00	1206	Juwon Hong, Taehoon Hong, Hyuna Kang, Minhyun Lee	A Framework For Reducing Dust Emissions And Energy Consumption On Construction Sites
15:00-15:20	543	Lanlan Jiang	Dynamic Measurement Of CO <sub>2</sub> Dissolution Process During Brine Imbibition Into Unconsidered Porous Media

Room: BC201

Session Name: Integrated planning and optimal operation of urban energy systems I

Session Chair: Yanli Liu, Dan Wang

Time	Paper ID	Author	Paper Title
13:40-14:00	84	Yijia Huo	Research On Pipeline Characteristics And Energy Saving Of Distributed Secondary Pump System For District Cooling
14:00-14:20	140	Stefano Coss	Waste-Heat Integration In Smart Thermal Networks - A Dynamic Thermoeconomic Approach
14:20-14:40	249	Qianwen Zhu, Qiqiang Li, Bingying Zhang, Luhao Wang, Guanguan Li, Rui Wang	Capacity Optimization For Electrical And Thermal Energy Storage In Multi-Energy Building Energy System
14:40-15:00	256	Gong Yutong	Optimization And Performance Study Of Residential Centralized Solar Domestic Hot Water System
15:00-15:20	280	Kanae Matsui, Shun Kawakubo, Yoshiki Yamagata	Real-Time Sensing In Residential Area Using Iot Technology For Finding Usage Patterns To Suggest Action Plan To Conserve Energy

# Day 1

# Oral Presentations

Room: HJ302

Session Name: Optimal Operation of Hydro, Wind, Solar Power and Their Integration I

Session Chair: Xiaohui Lei, Chao Wang

Time	Paper ID	Author	Paper Title
13:40-14:00	1248	Weijia Yang, Jiandong Yang	Evaluating Fast Power Response Of Variable Speed Pumped Storage Plants To Balance Wind Power Variations
14:00-14:20	1277	Hebin Ruan, Hongjun Gao, Junyong Liu, Youbo Liu	A Distributionally Robust Reactive Power Optimization Model For Active Distribution Network Considering Reactive Power Support Of DG And Switch Reconfiguration
14:20-14:40	1295	Bin Ye, Jingjing Jiang	Technical And Economic Feasibility Analysis Of An Energy And Fresh Water Coupling Model For An Isolated Island
14:40-15:00	1307	Alina Walch, Roberto Castello, Nahid Mohajeri, Fabian Guignard, Mikhail Kanevski, Jean-Louis Scartezini	Spatio-Temporal Modelling And Uncertainty Estimation Of Hourly Global Solar Irradiance Using Extreme Learning Machines
15:00-15:20	1314	Tao Ma	Techno-Economic Assessment Of A Hybrid Solar-Wind-Battery System For Remote Island Using Genetic Algorithm

Room: BC304

Session Name: Clean Energy Conversion Technology

Session Chair: Linda Xiao, Steven Jige Quan

Time	Paper ID	Author	Paper Title
13:40-14:00	1200	Yuan Xue, Yali Xue	Dynamic Temperature Model Simplification Of District Heating Network Based On Operation Data
14:00-14:20	1241	Xiaopeng Fu, Peng Li, Chengshan Wang	Extended MANA Formulation For Time-Domain Simulations Of Combined Power And Gas Networks
14:20-14:40	1379	Jay Hennessy, Hailong Li, Fredrik Wallin, Eva Thorin	Flexibility In Thermal Grids: A Review Of Short-Term Storage In District Heating Distribution Networks
14:40-15:00	1282	Zijuan Yang	Utilizing Big Data To Explore The Running Opportunity Of Power-To-Gas In Energy System
15:00-15:20	22	Lisheng Pan	Theoretical investigation on a novel CO2 transcritical power cycle using solar energy

**Panel Session: Higher Education and Training on Renewable Energy Topics: open issues, present status and future development**

Room: HJ305

15:20-15:50

**TEA/COFFEE BREAK**

Room: BC202

Session Name: Solar thermal energy I

Session Chair: Tao Ma, Michael K.H. Leung

Time	Paper ID	Author	Paper Title
15:50-16:10	755	Rui Chen, Zhenghua Rao, Shengming Liao, Gang Liu, Duanru Li	Analysis And Optimization The Size Of Heliostat Field And Thermal Energy Storage For Solar Tower Power Plants
16:10-16:30	1151	Petros Demissie Tegenaw, Asfaw Haileelassie Tesfay, Mesele Hayelom, Amanuel Kasaye, Mekonnen Gebrehiwot, Maarten Vanierschot	Design, Development And CFD Modeling Of Indirect Solar Food Dryer
16:30-16:50	218	Lai Yanhua, Hao Wengang, Yu Hongwen, Zheng Jian, Lyu Mingxin	Performance And Economic Evaluation Of Evacuated Tube Solar Collector With Auxiliary Electric Heater For Rural Heating
16:50-17:10	252	Xiaoli Yan	Study On The Performance Of Residential Centralized Solar Hot Water System
17:10-17:30	274	Liqun Zhou, Qunwu Huang, Yiping Wang	CFD Investigation Of Flat Plate Solar Collector With Transparent Insulation Material Under Steady State Condition
17:30-17:50	297	Kok Keong Chong, Woei-Chong Tan	Theoretical Analysis Of Hybrid Dense Array Concentrator Photovoltaic And Stirling Engine System

# Day 1

# Oral Presentations

Room: FJ301

Session Name: Solar thermal energy II

Session Chair: Qiuwang Wang, Pietro Elia Campana

Time	Paper ID	Author	Paper Title
15:50-16:10	335	Liang Teng, Xuan Yimin	A Novel Solar Receiver For Supercritical CO <sub>2</sub> Brayton Cycle
16:10-16:30	350	Xiaoxiao Yu, Xuan Yimin	Solar Absorption Properties Of Embellished GZO/Cu Janus Nanoparticles
16:30-16:50	1196	Biplab Das, Prabhakar Jha, Rajat Gupta	Energy And Exergy Analysis Of Photovoltaic Thermal Air Collector Under The Climatic Condition Of North Eastern India
16:50-17:10	389	Geng Luo, Lei Li, Juntao Wang, Wenmo Wang, Jifeng Song, Yongping Yang	A Heliostat Integrated A Sun-Position Sensor For Daylighting
17:10-17:30	422	Minglu Ma, Li Zhao, Shuai Deng, Ying Zhang, Shan Lin, Yawei Shao	Estimation Of Horizontal Direct Solar Radiation Considering Air Quality Index In China
17:30-17:50	443	Chengyi Li	An Experimental Study On Halftone Coating On Glazing Cover Of Solar Thermal Collector

Room: BC305

Session Name: Fuel cells I

Session Chair: Xianguo Li, Wenbin Hao

Time	Paper ID	Author	Paper Title
15:50-16:10	77	Mayken Espinoza-Andaluz, Martin Andersson, Tingshuai Li	Impact Of Water-Drop Presence On Diffusion Parameters Of PEFC Gas Diffusion Layers
16:10-16:30	87	Xuyang Zhang, Shizhong Chen, Zhongxian Xia, Xu Zhang, Hongtan Liu	Performance Enhancements Of PEM Fuel Cells With Narrower Outlet Channels In Interdigitated Flow Field
16:30-16:50	102	Trevor Kwan, Qinghe Yao	A Cost Effective Experimental Emulator For Fuel Cell Based Combined Heat And Power Systems
16:50-17:10	143	Ting Min, Li Chen, Wenquan Tao, Yimin Gao	Pore-Scale Study Of Gas Transport In Catalyst Layers Of Pemfcs
17:10-17:30	227	Pierpaolo Polverino, Giovanni Bove, Marco Sorrentino, Cesare Pianese	Generalized Scaling-Up Approach Based On Buckingham Theorem For Polymer Electrolyte Membrane Fuel Cells Impedance Simulation
17:30-17:50	1255	Yulin Wang	Investigation Of The Effective Transport Properties Of Gas Diffusion Layer On PEM Fuel Cell

Room: BC402

Session Name: Fuel cells II

Session Chair: Xinhai Yu, Lichao Jia

Time	Paper ID	Author	Paper Title
15:50-16:10	462	Linjun Li, Shixue Wang	Effect Of Clamping Stress On Cold Start Performance Of PEMFC
16:10-16:30	506	Prathak Jienkulsawad, Amornchai Arpornwichanop	Design Of The Compressed Air Energy Storage In The Hybrid SOFC-MCFC-GT System
16:30-16:50	570	Dong Yan, Wei Huang, Jiajun Yang, Lichao Jia	Microscopic Image Analysis Of Metal-Ceramic Anode For Solid Oxide Fuel Cell
16:50-17:10	595	Ambrož Kregar, Gregor Tavčar, Andraž Kravos, Tomaž Katrašnik	Predictive Virtual Modelling Framework For Performance And Platinum Degradation Modelling Of High Temperature PEM Fuel Cells
17:10-17:30	639	Zhifeng Xia, Bowen Wang, Zirong Yang, Kangcheng Wu, Qing Du, Jiao Kui	Effect Of Operating Conditions On Performance Of Proton Exchange Membrane Fuel Cell With Anode Recirculation
17:30-17:50	1195	Huicui Chen, Xin Zhao, Bingwang Qu, Tong Zhang, Pucheng Pei	Evaluating The Gas Distribution Quality Of PEMFC In Dynamic Response: Severe Condition Of Delayed Gas Supply

Room: BC404

Session Name: Fuel cells III

Session Chair: Yun He, Rui Lin

Time	Paper ID	Author	Paper Title
15:50-16:10	641	Xiaoyi Ding, Xiaojing Lv, Yiwu Weng	Effect Of Operating Parameters On Performance And Safety Evaluation Of A Biogas-Fueled SOFC/GT Hybrid System
16:10-16:30	775	Peng Qiu, Ao Wang, Dong Yan, Haoyu Zheng, Lichao Jia, Bo Chi, Jian Pu, Jian Li	Lacoo <sub>3</sub> -Δ-Coated Ba <sub>0.5</sub> Sr <sub>0.5</sub> Co <sub>0.8</sub> Fe <sub>0.2</sub> O <sub>3</sub> -Δ Core-Shell Structure Cathode With Promoted Performance And CO <sub>2</sub> Resistance For Intermediate Temperature Solid Oxide Fuel Cells
16:30-16:50	819	Luca Mantelli, Marco De Campo, Mario Luigi Ferrari, Loredana Magistri	Fuel Flexibility For A Turbocharged SOFC System
16:50-17:10	835	Wenbin HAO, Hongyan Ma, Guoxing Sun, Zongjin Li	Developing High Performance Magnesium Phosphate Cement Composite Bipolar Plates For Fuel Cells
17:10-17:30	1167	Yangbin Shao, Liangfei Xu, Jianqiu Li, Minggao Ouyang	Numerical Modeling And Performance Prediction Of Water Transport For PEM Fuel Cell
17:30-17:50	1313	Tao Jiang	Co-Based Fuel Cell Cathode Electrocatalyst For Both Acid And Alkaline Environment

# Day 1

# Oral Presentations

**Room: FJ302**

**Session Name: Hydrogen energy I**

**Session Chair: Meng Ni, Yujie Wang**

Time	Paper ID	Author	Paper Title
15:50-16:10	735	Soon-Mo Kwon	Development Of Nabh4-Based Hydrogen Generator For Fuel Cell Unmanned Aerial Vehicles With Movable Fuel Cartridge
16:10-16:30	846	Guido Lorenzi, Leopoldo Mignini, Baldassarre Venezia, Carlos Silva, Massimo Santarelli	Integration Of High-Temperature Electrolysis In An HVO Production Process Using Waste Vegetable Oil
16:30-16:50	1013	Jinsheng Xiao, Feng Li, Pierre Bénard, Richard Chahine, Tianqi Yang	Numerical Solution For Thermodynamic Model Of Charge-Discharge Cycle In Compressed Hydrogen Tank
16:50-17:10	1205	Muhammad W. Ajiwibowo, Arif Darmawan, Muhammad Aziz	Co-Production Of Hydrogen And Power From Black Liquor Via Supercritical Water Gasification, Chemical Looping And Power Generation
17:10-17:30	1331	Nithin N Raju, Alok Kumar, K Malleswararao, Muthukumar Palanisamy	Parametric Studies On Lani4.7Al0.3 Based Hydrogen Storage Reactor With Embedded Cooling Tubes
17:30-17:50	522	Mingkai Liu, Jian Jin, Yong Hao	An Electrochemical Oxygen Pump For High Temperature Water Splitting

**Room: FJ303**

**Session Name: Catalytic effects in solid combustion**

**Session Chair: Roland Span**

Time	Paper ID	Author	Paper Title
15:50-16:10	837	Maximilian Von Bohnstein, Jochen Ströhle, Bernd Epple	CFD Simulation Of An Oxy-Fuel Demonstration Power Plant With Application Of A WSGG Radiation Model
16:10-16:30	876	Thobias Kreitzberg	Thermal Deactivation Of Biogenic And Fossil Fuels: Experimental Investigation And Modeling Approaches
16:30-16:50	567	Carsten Wedler, Arash Arami-Niya, Gongkui Xiao, Roland Span, Eric F. May, Markus Richter	Gas Diffusion And Sorption In Carbon Conversion
16:50-17:10	633	Albert Bach-Oller, Erik Furusjö, Kentaro Umeki	Effect Of Potassium Impregnation On The Emission Of Tar And Soot From Biomass Gasification
17:10-17:30	716	Martin Muhler, Katrin Lotz, Cornelius Berger	Catalytic Effect Of Iron Phases On The Oxidation Of Cellulose-Derived Synthetic Char
17:30-17:50	838	Osvalda Senneca, Viktor Scherer	Assessment Of Coal Pyrolysis Kinetics For Barracuda Or Ansys Fluent

**Room: HJ203**

**Session Name: Carbon emission trading II**

**Session Chair: Cheng Cheng, Mingming Zhang**

Time	Paper ID	Author	Paper Title
15:50-16:10	870	Shihui Zhang, Robert Mendelsohn, Can Wang, Wenjia Cai	Evaluating Environmental Tax Rates For Power Plants In BTH Area Based On Marginal Damage Estimation: An Integrated Assessment
16:10-16:30	889	Khamila Khaqqi, Kunn Hadinoto, Markus Kraft	Self-Regulating Market For Emission Permit Price In Blockchain-Enabled Reputation-Based Emission Trading Scheme (ETS) Enabled By Price Information Asymmetry
16:30-16:50	954	Hai Huang, David Roland-Holst, Cecilia Han Springer, Can Wang	How Will Emission Trading System Affect The Household Income And Social Equity? A CGE-Based Case Study Of China
16:50-17:10	976	Yi Zhou, Alun Gu	Chinese Certified Emission Reduction (CCER) Development Status And Future Supply In China
17:10-17:30	1278	Yuting Pan, Xiaosong Zhang, Yi Wang	Application Of Blockchain In Carbon Trading
17:30-17:50	119	Ee Sann Tan, Kunio Yoshikawa	Impact Of Biodiesel Application On Fuel Savings And Emission Reduction For Power Generation In Malaysia

**Room: HJ209**

**Session Name: Energy for developing countries I**

**Session Chair: Xiaoling Zhang, Yuejun Zhang**

Time	Paper ID	Author	Paper Title
15:50-16:10	56	Yousef Saif, Ali Almansoori, Ali Elkamel, Muhammad Rizwan	A Decomposition Algorithm For Organic Solid Waste Supply Chain Optimization Under Uncertainty
16:10-16:30	98	Chun Sing Lai, Giorgio Locatelli, Andrew Pimm, Xuecong Li, Loi Lei Lai	Levelized Cost Of Electricity Considering Electrochemical Energy Storage Cycle-Life Degradations
16:30-16:50	1067	Qianru Yang, Qiaomei Liang	Evaluating The Direct Rebound Effect Of China's Urban Household Energy Demand
16:50-17:10	665	Krushna Mahapatra, Brijesh Mainali, Georgios Pardalis	Homeowners' Attitude Towards One-Stop-Shop Business Concept For Energy Renovation Of Detached Houses In Kronoberg, Sweden
17:10-17:30	158	Clas Eriksson, Johan Linden, Christos Papahristodoulou	Modelling The Value Of Variable Renewable Electricity
17:30-17:50	669	Xi Liang, Qianguo Lin, Ming Lei, Qiang Liu, Jia Li, Muxin Liu, Alisa Wu, Francisco Ascui, Hasan Muslemani	Assessing The Economics Of CO <sub>2</sub> Capture In China's Iron/Steel Sector: A Case Study

# Day 1

# Oral Presentations

Room: HJ210

Session Name: Energy for developing countries II

Session Chair: Qie Sun

Time	Paper ID	Author	Paper Title
15:50-16:10	211	Priyabrata Pradhan, Prabodh Gadkari, Amit Arora, Sanjay Mahajani	Economic Feasibility Of Agro Waste Pelletization As An Energy Option In Rural India
16:10-16:30	405	Chen Di, Zhou Kai, Tan Xue, Shi Lei, Ma Zhong	Desulfurization Electricity Price And Emission Trading —Comparative Analysis Of Thermal Power Industry In China And The United States
16:30-16:50	1202	Krishan Pandey, Harshil Rastogi	Effect Of Energy Consumption & Economic Growth On Environmental Degradation In India: A Time Series Modelling
16:50-17:10	482	Qier An	Embodied Crude Oil Analysis Of Chinese Economy From 2011 To 2014
17:10-17:30	605	Dina Azhgaliyeva	Energy Storage And Renewable Energy Deployment: Empirical Evidence From OECD Countries
17:30-17:50	1265	Yue Wang, Wang Jingyou, Shi Lei	Spatial Correlation Analysis Of Energy Consumption And Air Pollution In Beijing-Tianjin-Hebei Region

Room: HJ304

Session Name: Energy economics, finance and investment I

Session Chair: Takuro Kobashi, Krishan Pandey

Time	Paper ID	Author	Paper Title
15:50-16:10	629	Qing Guan, Haizhong An	Functional Trade Patterns In The International Photovoltaic Trade
16:10-16:30	146	Enrico Cagno, Davide Accordini, Andrea Trianni	A Framework To Characterize Factors Affecting The Adoption Of Energy Efficiency Measures Within Electric Motors Systems
16:30-16:50	712	Ambrose Doodoo, Leif Gustavsson, Uniben Tettey	Cost-Optimized Energy-Efficient Building Envelope Measures For A Multi-Storey Residential Building In A Cold Climate
16:50-17:10	908	Reinhard Madlener, Silvia Vonsien	Economic Modeling Of The Economic Efficiency Of Li-Ion Battery Storage With A Special Focus On Residential PV Systems
17:10-17:30	1380	Jingjing Song, Hailong Li, Fredrik Wallin	Effectiveness Of Introducing Heat Storage To Reprress Cost Increase

Room: FJ304

Session Name: Carbon capture and storage (CCS) III

Session Chair: Agus Sasmito, Ligang Wang

Time	Paper ID	Author	Paper Title
15:50-16:10	827	Peizhi Liao, Xiao Wu, Yiguo Li, Meihong Wang, Jiong Shen, Bo Sun, Lei Pan,	Flexible Operation Of Coal-Fired Power Plant Integrated With Post-Combustion CO <sub>2</sub> Capture
16:10-16:30	1010	Junyao Wang, Shuai Deng, Taiwei Sun, Yaofeng Xu, Kaixiang Li, Jun Zhao, Shengyuan Zhong,	Thermodynamic And Cycle Model For MEA-Based Chemical CO <sub>2</sub> Absorption
16:30-16:50	1028	Bin Yuan	Prediction Leakage Channels Of CO <sub>2</sub> Injection Wells
16:50-17:10	231	Farshad Barzegar, Abdul Hakeem Bello, Damilola Y. Momodu, Ncholu Manyala, Xiaohua Xia	Effect Of Radiation On The Performance Of Activated Carbon Base Supercapacitor: Part I. Influence Of Microwave Irradiation Exposure On Electrodes Material
17:10-17:30	1304	Xiong Liu, Ajit Godbole, Cheng Lu, Guillaume Michal, Valerie Linton	Consequence Modelling Of CO <sub>2</sub> Pipeline Failure
17:30-17:50	1361	Yifeng Chen	Novel Solvent For The CO <sub>2</sub> Capture

Room: BC203

Session Name: Electric energy storage I

Session Chair: Ottorino Veneri, Rui Xiong

Time	Paper ID	Author	Paper Title
15:50-16:10	72	Yukang Wu, Kaixiang Li, Junyao Wang, Shan Ji, Shixue Wang	Experimental Study And Numerical Modeling On Cylindrical Lithium-Ion Power Battery Thermal Inertia
16:10-16:30	134	Wenzheng Li, Xinhai Xu, Xiaoru Zhuang	Numerical Study Of A Novel Battery Thermal Management System For A Prismatic Li-Ion Battery Module
16:30-16:50	230	Hanfei Zhang, Ligang Wang, François Maréchal, Umberto Desideri	Solid-Oxide Electrolyzer Coupled Biomass-To-Methanol Systems
16:50-17:10	304	Muhammad Huda, Muhammad Aziz, Koji Tokimatsu	The Future Of Electric Vehicles To Grid Integration In Indonesia
17:10-17:30	1117	Jinpeng Tian, Rui Xiong	A comparative study on fractional order modelling and state of charge estimation of ultracapacitors
17:30-17:50	1268	Xiaowei Yu, Jingwen Wei, Guangzhong Dong, Zonghai Chen, Zhang Chenbin	State-Of-Charge Estimation Approach Of Lithium-Ion Batteries Using An Improved Extended Kalman Filter

# Day 1

# Oral Presentations

Room: HJ303

Session Name: Pollutant control and waste treatment I

Session Chair: Eva Thorin, Sheng Li

Time	Paper ID	Author	Paper Title
15:50-16:10	694	Zhaoyu Xiao, Shuzhong Wang, Jun Zhao, Zhongqing Zhang, Zhiqiang Wu, Haiyu Meng, Donghai Xu	Simulation Research On The Slag Control Tube During Energy Recovery From Steel Industry
16:10-16:30	758	Xin Du, Maoli Huang, Binbin Qi, Yun Li	Experimental Research On The Filtration Performance Of Granular Bed Filter Packed With Various Sizes Of Particles
16:30-16:50	1376	Eva Thorin, Ida Sylwan, Jesus Zambrano	Energy Demand For Phosphorus Recovery From Municipal Wastewater
16:50-17:10	370	Mingchen Xu, Yaojie Tu, Yu Wenbin, Wenming Yang, Keng Boon Siah, Subbaiah Prabakaran	On The Combination Of Fuel-Rich/Lean Burner With MILD Combustion For Further Nox Emission Reduction
17:10-17:30	1123	Jianfeng Lu	Thermochemical Storage Characteristics Of Methane Reforming For The Residual Heat Recovery Of Slag
17:30-17:50	888	Anissa Nurdiawati, Ilman Nuran Zaini, Muhammad Aziz	Dual-Stage Chemical Looping Of Microalgae For Methanol Production With Negative-Carbon Emission

Room: BC201

Session Name: Heat transfer enhancement, heat exchangers and heat pipe I

Session Chair: Xiaoze Du, Baomin Dai

Time	Paper ID	Author	Paper Title
15:50-16:10	209	Adekunle Adelaja, Jaco Dirker, Josua Meyer	Condensation Heat Transfer Coefficients And Enhancements Of R134a In Smooth And Microfin Inclined Tubes
16:10-16:30	262	Lei Quan, Chenzhao Fu, Wenrong Si, Jian Yang, Qiuwang Wang	Numerical Study Of Heat Transfer In Underground Power Cable System
16:30-16:50	287	Wenhao Pu, Ning Yang	Simulation On Gas-Molten Salt Heat Transfer In Bubble Column For Solar Thermal Storage
16:50-17:10	38	Himanshu Dehra	Modeling Of Energy Conversion And Noise Characterization In Outdoor Ducts Exposed To Solar Radiation
17:10-17:30	378	Yawei Shao, Shuai Deng, Pei Lu, Dongpeng Zhao, Li Zhao, Wen Su, Minglu Ma,	A Numerical Study On Heat Transfer Of R410A During Flow Boiling
17:30-17:50	1050	Junpeng Fu	Engineering Scale Design Of Gas-Solid Heat Transfer In Vertical Packed Bed

Room: HJ302

Session Name: Heat transfer enhancement, heat exchangers and heat pipe II

Session Chair: Rebei Bel Fdhila, Zaoxiao Zhang

Time	Paper ID	Author	Paper Title
15:50-16:10	388	Adekunle Adelaja, Oluwasegun Omosehin, Olabode Olakoyejo, Josua Meyer	The Influence Of Media Properties, Geometric And Operational Parameters On The Thermal Performance Of Bilayered Composite Cylinder
16:10-16:30	414	Limei Shen	The Experimental Study Of A Novel Metal Foam Heat Pipe Radiator
16:30-16:50	1374	Kai Zhu, Xueqiang Li, Zhen Yang, Hailong Li, Yabo Wang	Experimental Investigation On The Effect Of Heat Sink Temperature On Operational Characteristics Of A New-Type Loop Heat Pipe
16:50-17:10	477	Yuefen Gao, Tingting Gao	Simulation Study On The Performance Of Direct Expansion Geothermal Refrigeration System Using Carbon Dioxide Transcritical Cycle
17:10-17:30	492	Nguyen Ba Chien, Nguyen Xuan Linh, Jong-Taek Oh	Numerical Optimization Of Flow Distribution Inside Inlet Header Of Heat Exchanger
17:30-17:50	1134	Zaaquib Yunus Ahmed, Michel De Paepe, Steven Lecompte, Teun De Raad	Steady State Model Of A Reheating Furnace For Determining Slab Boundary Conditions

Room: BC304

Session Name: Geoenergy I

Session Chair: Zhenhua Rui, Fengshou Zhang

Time	Paper ID	Author	Paper Title
15:50-16:10	46	Wenhui Song, Jun Yao, Yang Li, Hai Sun, Yongfei Yang, Lei Zhang	Real Gas Transport In Shale By A Dynamic Pore Network Model Considering Multiple Transport Mechanisms
16:10-16:30	108	Nobuo Maeda	Nucleation Curve Of Carbon Dioxide Hydrate
16:30-16:50	163	Peng Fei, Luo Dongkun, Yin Chengfang	Tight Oil Accumulation Characteristics And Resource Potential Evaluation Of The Xiagou Formation In Qingxi Depression, Jiuquan Basin
16:50-17:10	180	Guopeng Yu, Zhibin Yu	Investigation Of Geothermally Sourced Combined Power And Freshwater Generation Systems
17:10-17:30	1298	Xianzhi Song, Gaosheng Wang, Yu Shi, Rui Zheng, Jiacheng Li	Numerical Analysis On Thermal Characteristics Of An Open Loop Geothermal System In A Single Well
17:30-17:50	1160	Aziz Rahman	Modelling Of Turbulent Effect In Near Wellbore Flow Using CFD

# Day 1

# Oral Presentations

16:10-17:50	<b>Panel Session: ESI UNi-LAB</b> <b>Room: HJ305</b>
18:00-19:00	<b>Editorial Board Meeting</b>



# Day 2

# Oral Presentations

**Room: BC202**

**Session Name: Biodiesel II**

**Session Chair: Kentaro Umeki, Tiejun Wang**

Time	Paper ID	Author	Paper Title
08:40-09:00	630	Sakda Thongchai, Yujin Kang, Ocktaeck Lim	A Study Of High-Pressure Gasoline Spray Added Biodiesel 5% In A Constant Volume Combustion Chamber
09:00-09:20	631	Lianmin Zhao, Xu Xie, Daokuan Jiao, Jiao Kui, Qing Du	Direct Numerical Simulation Of Primary Breakup For Power-Law Biodiesel Sprays
09:20-09:40	663	Kyeonghun Jwa, Vu Dinh Nam, Ocktaeck Lim	Experimental Study Of The Ignition Delay Of Gasoline/Biodiesel Blends Using A Rapid Compression Expansion Machine
09:40-10:00	992	Carlo Caligiuri, Massimiliano Renzi, Marco Bietresato	The Effect Of Using Diesel-Biodiesel-Bioethanol Blends On The Fuel Feed Pump Of A Small-Scale Internal Combustion Engine
10:00-10:20	512	Guangli Cao, Jiwen Wu, Lei Zhao, Congrong Wu, Zian Qi, Yachun Sheng	Optimization Of Culture Conditions For Enhanced Butanol Production By A High Butanol Tolerant Clostridium Beijerinckii F-6

**Room: FJ301**

**Session Name: Solar PV applications III**

**Session Chair: Pietro Campana**

Time	Paper ID	Author	Paper Title
08:40-09:00	113	Muhammad Burhan, Muhammad Wakil Shahzad, Seung Jin Oh, Kim Choon Ng	Long Term Electrical Rating Of Concentrated Photovoltaic (CPV) Systems In Singapore
09:00-09:20	199	Vishrut Parikh, Chintan Desai, Dhruvad Joshi, Nagababu Garlapati	Estimation Of Electricity Generation Potential By Solar Radiation On Sardar Sarovar Dam
09:20-09:40	228	Hazim Moria, Munner Khaleel, Ashraf Alghanmi, Yusli Yaakob, Taib Iskandar Mohamad	Experimental Study Of Solar Based Refrigerator Using Thermoelectric Effect
09:40-10:00	302	Kok Keong Chong, Boon-Han Lim, An-Chow Lai, Ming Hui Tan, Chee-Woon Wong	Optimization Study Of Parasitic Energy Losses In Photovoltaic System With Dual-Axis Solar Tracker Located At Different Latitudes
10:00-10:20	1102	Weilong Zhang, Lin Lu, Hong Zhong	Daylighting And Thermal Performance Of Glass Windows Using A Newly Developed Transparent Heat Insulated Glass Coating

**Room: BC305**

**Session Name: Solar PV applications IV**

**Session Chair: Vivien Lu, Qiuwang Wang**

Time	Paper ID	Author	Paper Title
08:40-09:00	942	Nand Meena, Abhishek Kumar, Arvind R. Singh, Anil Swarnkar, Nikhil Gupta, K Niazi, Praveen Kumar, Prof R C Bansal	Optimal Planning Of Hybrid Energy Conversion Systems For Annual Energy Cost Minimization In Indian Residential Buildings
09:00-09:20	940	Hao Lu, Lin Lu, Li-Zhi Zhang, Anjian Pan	Numerical Study On Polydispersed Dust Pollution Process On Solar Photovoltaic Panels Mounted On A Building Roof
09:20-09:40	995	Bo Sun, Zhang Xiaosong	Experimental Study On Liquid Desiccant Regeneration By Photovoltaic Electrodialysis
09:40-10:00	1005	Sandeep Manda, Piyush Chaubey, Srinivas Yeliseti, Sravan Kumar Kuralla, Nitish Kumar Yadav, Nand Meena	Exact Parameter Identification Of Photovoltaic Panel By Using Datasheet Details
10:00-10:20	1135	Tao Ma, Jiabin Zhao, Zhenpeng Li	Performance Analysis Of A Photovoltaic Panel Integrated With Phase Change Material

**Room: BC402**

**Session Name: Advanced combustion and gasification of fossil fuel II**

**Session Chair: Kunio Yoshikawa, Chi-Hwa Wang**

Time	Paper ID	Author	Paper Title
08:40-09:00	1017	Yuji Nakamura, Hiroki Yoshitome, Takuya Yamazaki, Tsuneyoshi Matsuoka, Jian Gao	Combustion of Activated Carbon Particles - Part.1: Experimental Investigation of the Two Distinctive Burning Modes in A Packed Bed
09:00-09:20	1061	Denghui Wang, Ning Dong, Shien Hui, Yanqing Niu	Analysis of Urea Pyrolysis Products in 132.5-190 °C
09:20-09:40	1191	Jian Gao, Peilai Tan, Tsuneyoshi Matsuoka, Yuji Nakamura, Jinhui Wu, Dongke Zhang, Xinyan Huang,	Combustion of Activated Carbon Particles - Part.2: Modeling Microscopic Thermochemical Structure of the Combustion Front
09:40-10:00	1332	Lav Kumar Kaushik, Muthukumar Palanisamy	Performance Assessment of a Porous Radiant Cook Stove Fueled with Blend of Waste Vegetable Oil (WVO) and Kerosene
10:00-10:20	448	Yang Meng, Luyao Tang, Yuxin YAN, Jumoke Oladejo, Peng Jiang, Tao WU, Cheng Heng Pang	Effects of Microwave-enhanced Pretreatment on Oil Shale Milling Performance

# Day 2

# Oral Presentations

**Room: BC404**

**Session Name: District heating & district cooling**

**Session Chair: Jinqing Peng, Xi Chen**

Time	Paper ID	Author	Paper Title
08:40-09:00	66	Wei-Hsin Chen	Performance Comparison Of Thermoelectric Generators Using Different Materials
09:00-09:20	112	Kim Choon Ng, Muhammad Wakil Shahzad, Muhammad Burhan, Seung Jin Oh	Approaches To Energy Efficiency In Air Conditioning: Innovative Processes And Thermodynamics
09:20-09:40	896	Truong Nguyen	Costs And Primary Energy Use Of Heating New Residential Areas With District Heat Or Electric Heat Pumps
09:40-10:00	999	Peng Xu, Xiaoli Ma, Xudong Zhao, Yaxuan Xiong, Yanbing Sun	Feasibility Analysis For A Novel Dew Point Air Cooler Applied In Warm And Humid Climate: A Case Study In Beijing
10:00-10:20	1004	Gerardo Augusto, Alvin Culaba	Identification Of Design Criteria For District Cooling Distribution Network With Loop-Type System

**Room: FJ302**

**Session Name: Heat pumps and refrigeration systems II**

**Session Chair: Yi Chen, Jialing Zhu**

Time	Paper ID	Author	Paper Title
08:40-09:00	217	Yan Shang	The Analysis Of The Evaporation Effect On Moisture Soil Under Intermittent Operation Of Ground-Source Heat Pump
09:00-09:20	220	Ziyang Zhang, Chunlu Zhang	Energy Performance Of An Advanced Direct-Expansion Outdoor Air Dehumidification System
09:20-09:40	286	Wei Wu	Novel Ionic-Liquid-Based Low-GWP Working Fluids Used For Hybrid Low-Temperature Absorption Cooling
09:40-10:00	384	Kang Li	Experimental Investigation On Dehumidifying Performance Of Secondary Coolant Heat Pump System In Electric Vehicles
10:00-10:20	585	Govind Harikumar, Hin Ho Ker, Kai Wang, Swapnil Dubey, Fei Duan	Thermoacoustic Energy Conversion In A Square Duct

**Room: FJ303**

**Session Name: Clean energy conversion technology I**

**Session Chair: Li Zhao, Luca Cioccolanti**

Time	Paper ID	Author	Paper Title
08:40-09:00	664	Hongsheng Jiang, Sujun Dong, Aicheng Li, Fanxin Meng	Online Parameter Estimation Of Cold Plate Based On Extended Kalman Filter
09:00-09:20	931	Zuoming Qu, Haoning Shi, Xingfei Yu, Qiuwang Wang, Ting Ma	Optimization Of Thermoelectric Generator Integrated Recuperator
09:20-09:40	679	Ying Liang, Lei Cai, Yanwen Guan, Wenbin Liu, Yixiao Han, Yanlei Xiang	Performance Simulation On An Integrated Natural Gas-, N2- And Organic Fluid-Cycle Thermal Power Plant
09:40-10:00	1172	Taixiu Liu, Qibin Liu, Zhang Bai, Jing Lei, Jun Sui	100 Kwe Solar Thermochemical Pilot Power Plant: Design, Model, Construction And Testing
10:00-10:20	1334	Dandan Wang, SHENG LI, Lin Gao	SNG Production With CO <sub>2</sub> Capture Based On Coal-Steam Gasification And One-Step Methanation

**Room: HJ203**

**Session Name: Smart buildings (energy system control and operation) II**

**Session Chair: Allan Schrøder Pedersen, Lijun Zhang**

Time	Paper ID	Author	Paper Title
08:40-09:00	731	Jun Mei, Xiaohua Xia	Distributed Resource Allocation For Multi-Zone Commercial Buildings
09:00-09:20	783	Agostino Gambarotta, Mirko Morini, Costanza Saletti	Development Of A Model-Based Predictive Controller For A Heat Distribution Network
09:20-09:40	994	Yi Zong, Wenijing Su, Jiawei Wang, Morten Herget Christensen, Chuhao Jiang, You Zhou, Shujun Mu	Model Predictive Control For Smart Buildings To Provide The Demand Side Flexibility In The Multi-Carrier Energy Context: Current Status, Pros And Cons, Feasibility And Barriers
09:40-10:00	1093	Gulsun Demirezen, Alan S. Fung	Application Of Artificial Neural Network In The Prediction Of Ambient Temperature For A Cloud-Based Smart Dual Fuel Switching System
10:00-10:20	1145	Dingming Liu, Yanyi Sun, Yupeng Wu, Robin Wilson	Evaluation Of The Colour Properties Of Cdte PV Windows

# Day 2

# Oral Presentations

Room: HJ209

Session Name: Electric vehicles II

Session Chair: Takuro Kobashi, Clemente Capasso

Time	Paper ID	Author	Paper Title
08:40-09:00	475	Xuning Feng, Siqi Zheng, Dongsheng Ren, Xiangming He, Li Wang, Xiang Liu, Maogang Li, Minggao Ouyang	Key Characteristics For Thermal Runaway Of Li-Ion Batteries
09:00-09:20	962	Bin Wang, Chaohui Wang, Guangliang Ma, Le Zhang	Power-Split Strategy Based On Average Power Method For Semi-Active Hybrid Energy Storage System In Small Electric Vehicles
09:20-09:40	949	Shuang Gao, Hongjie Jia, jiahao liu, Chunhua Liu	Integrated Configuration And Charging Optimization Of Aggregated Electric Vehicles With Renewable Energy Sources
09:40-10:00	993	Muhammad Aziz, Muhammad Huda	Utilization Of Electric Vehicles For Frequency Regulation In Danish Electrical Grid
10:00-10:20	1029	Kangda Chen, Fuquan Zhao, Han Hao, Zongwei Liu	Selection Of Lithium-Ion Battery Technologies For Electric Vehicles Under China's NEV Credit Regulation

Room: HJ210

Session Name: Energy market, scenarios and forecasting, and energy security I

Session Chair: Perry Yang, Yoshiki Yamagata

Time	Paper ID	Author	Paper Title
08:40-09:00	745	Reza Nadimi, Koji Tokimatsu	Fundamental Energy Needs Quantification Across Poor Households Through Simulation Model
09:00-09:20	751	Bai-Chen Xie, Mei Xu, Pu Xie	Study On China's Solar Photovoltaic Power Development Path For The Target Of 2050
09:20-09:40	753	Qian Li, Zhou Wu, Rui Ling, Mi Tan	Echo State Network-Based Spatio-Temporal Model For Solar Irradiance Estimation
09:40-10:00	796	Leena Heistrene, Poonam Mishra, Makarand Lokhande	Stochastic Market Clearing With Revenue Sufficiency Constraints
10:00-10:20	1294	Jianli Chen, Zhikai Peng, Perry Yang	The Energy Performance Evaluation Of Roof Retrofit Under Uncertainties For The Shanghai's Worker Village

Room: HJ304

Session Name: Life cycle assessments (LCA) I

Session Chair: Bin Chen, Jun Yuan

Time	Paper ID	Author	Paper Title
08:40-09:00	7	Douglas Aghimien, Clinton Aigbavboa, Ayodeji Oke	A Review Of The Application Of Data Mining For Sustainable Construction In Nigeria
09:00-09:20	1328	Cuncun Duan, Bin Chen	Energy Consumption Inequality In China
09:20-09:40	100	Xiaoyu Yan	Infrastructure-Integrated Photovoltaic (IIPV): A Boost To Solar Energy's Green Credentials?
09:40-10:00	164	Muhammad Rizwan, Yousef Saif, Ali Almansoori, Ali Elkamel	Environmental Performance Of Municipal Solid Waste Processing Pathways
10:00-10:20	468	Bojana Petrovic, Jonn Are Myhren, Xingxing Zhang, Marita Wallhagen, Ola Eriksson	Life Cycle Assessment Of Building Materials For A Single-Family House In Sweden

Room: FJ304

Session Name: Energy Water Nexus

Session Chair: Junguo Liu, Olli Varis

Time	Paper ID	Author	Paper Title
08:40-09:00	1291	Olli Varis	Economic Structure And Industrial Transitions Are Decisive To Water-Energy Nexus: Evidence From China In 2003-2012
09:00-09:20	866	Xin Ding, Saige Wang, Bin Chen	Evaluation On Utilization Of Energy And Water Resources Of Crop Production In Heilongjiang
09:20-09:40	968	Zhenzhen Tian, Saige Wang, Bin Chen	A Three-Scale Input-Output Analysis Of Blue And Grey Water Footprint For Beijing-Tianjin-Hebei Urban Agglomeration
09:40-10:00	1288	Junguo Liu	Energy Thirst For Water In China: A Challenge To Water Sustainability
10:00-10:20	1258	Othman Alnajdi, John Kaiser Calautit, Wu Yupeng	Development Of A Multi-Criteria Decision Making Approach For Sustainable Seawater Desalination Technologies Of Medium And Large-Scale Plants: A Case Study For Saudi Arabia's Vision 2030

# Day 2

# Oral Presentations

Room: QR512

Session Name: Electric energy storage II

Session Chair: Hongwen He

Time	Paper ID	Author	Paper Title
08:40-09:00	491	Cheng Xu, Shijie Cheng, Kangli Wang, Kai Jiang	A Fractional-Order Model For Liquid Metal Batteries
09:00-09:20	518	Zhining Duan, Zhiguo Qu, Xueliang Wang, Jianfei Zhang	A Modified Structure Of All Vanadium Redox Flow Battery With High Resistance To Electrochemical Corrosion
09:20-09:40	524	E Zhang, Cheng Xu, Guoan Liu, Kai Jiang, Kangli Wang	An Active Battery Equalization Scheme For Lithium Iron Phosphate Batteries
09:40-10:00	711	ligang wang, Megha Rao, Jan Van herle, Stefan Diethelm, Anke Hagen, François Maréchal	Effects Of Operating Pressure And Internal Methanation On The Performance Of Solid-Oxide Cell Based Power-To-Methane Systems
10:00-10:20	856	Tianyu Zhao, Manuel Ojeda, Jin Xuan, Zhan Shu, Huizhi Wang	Aluminum Storage In Rutile-Based Tio2 Nanoparticles

Room: HJ303

Session Name: Gas hydrates I

Session Chair: Praveen Linga, Kumar Rajnish

Time	Paper ID	Author	Paper Title
08:40-09:00	434	Yulong Liu	Analyzing The Process Of Depressurization-Induced Gas Production From Natural Marine Sediments
09:00-09:20	503	Zhenhe Li, Yi Wang, Xiao-Sen Li, Jianxing Yu	Experimental Investigation On Sediment Deformation During Gas Hydrate Decomposition For Different Hydrate Reservoir Types
09:20-09:40	554	Junjie Zheng, Niranjana Kumar Loganathan, Praveen Linga	Natural Gas Storage Via Clathrate Hydrate Formation: Effect Of Carbon Dioxide And Experimental Conditions
09:40-10:00	590	Bingbing Chen, Mingjun Yang, Huiru Sun, Dayong Wang, Yongchen Song	Visualization Study On The Promotion Of Depressurization And Water Flow Erosion For Gas Hydrate Production
10:00-10:20	608	Huiru Sun, Bingbing Chen, Mingjun Yang, Yi Zhang, Yongchen Song	Promotion Of Gas Hydrate Dissociation With Seawater Flow Through The Sediment

Room: QR504

Session Name: Heat transfer enhancement

Session Chair: Zaoxiao Zhang, Cheol Soo Park

Time	Paper ID	Author	Paper Title
08:40-09:00	1356	Kai Zhu, Xueqiang Li, Hailong Li, xiaoqing chen, Yabo Wang	Optimization Of A Loop Heat Pipe (LHP) With Wick Separated From Heating Surface
09:00-09:20	1371	Fenpinig Lu, Shengchun Liu, Baomin Dai, Zhifeng Zhong, Ihl Li, Zhili Sun	Experimental Study On Thermal Performance Of Transcritical CO2 Air Source Heat Pump For Space Heating
09:20-09:40	1319	Navin Raja Kuppusamy, Poh Seng Lee	Study On Thermal And Hydrodynamic Performance Of A Triple Fluid Heat Exchanger With Different Passes And Rows
09:40-10:00	854	Xin Cui, Xiaohu Yang, Xiangzhao Meng, Liwen Jin, Kian Jon Chua	Performance Investigation Of An Evaporative Pre-Cooled Air-Conditioning System In Tropics
10:00-10:20	1127	Zhongjun Yan, Zhun Yu, Tingting Yang, Shuishen Li, Guoqiang Zhang	Impact of ultrasound on the melting process and heat transfer of phase change material

Room: QR514

Session Name: Integrated planning and optimal operation of urban energy systems II

Session Chair: Dan Wang, Yanli Liu

Time	Paper ID	Author	Paper Title
08:40-09:00	303	Dan Wang	Household Microgrid Interaction Technology Based On Power Router
09:00-09:20	382	Qian Hu, Haiyu Li, Siqi Bu	The Prediction Of Electric Vehicles Load Profiles Considering Stochastic Charging And Discharging Behavior And Their Impact Assessment On A Real UK Distribution Network
09:20-09:40	476	Zheng Yang, Karan Gupta, Rishree Jain	DUE-A: Data-Driven Urban Energy Analytics For Understanding Relationships Between Building Energy Use And Urban Systems
09:40-10:00	581	Chen Cong, Xinwei Shen, Qinglai Guo, Hongbin Sun	Robust Planning-Operation Co-Optimization Of Energy Hub Considering Precise Model Of Batteries' Economic Efficiency
10:00-10:20	765	Steven Jige Quan	Smart Design For Sustainable Neighborhood Development

# Day 2

# Oral Presentations

Room: BC304

Session Name: Renewable energy systems

Session Chair: Jan Skvaril, Honglei Bai

Time	Paper ID	Author	Paper Title
08:40-09:00	1352	Xiaoxun Zhu, Jianhong Zhao, Dongnan Hou, Zhonghe Han	Vibration Fault Diagnosis Method For Turbine Rotor Based On VCNN
09:00-09:20	299	Aitong Li, Yuan Xu	The Governance For Offshore Wind In Japan
09:20-09:40	979	Jaydeep Patel, Vimal Savsani, Vivek Patel, Rajesh Patel	Layout Optimization Of A Wind Farm Using Geometric Pattern-Based Approach
09:40-10:00	213	Chuan Li	Composite Phase Change Materials For Thermal Energy Storage: From Molecular Modelling Based Formulation To Innovative Manufacture
10:00-10:20	1366	Yuxia Lv, Pengfei Si, Jianmin Liu, Wen Ling, Jinyue Yan	Performance Of A Hybrid Solar Photovoltaic - Air Source Heat Pump System With Energy Storage

## Panel Session: Porous Materials for Biogas Upgrading & Storage - I

Room: HJ305

Time	Paper ID	Author	Paper Title
08:40-10:20	08:40 - 09:20	Andreas Kaiser	Welcome/Organisational Remarks
		Michael D. Guiver	Composite Membranes With CO <sub>2</sub> -Selective Skin Layers
	09:20 - 09:40	Hannes Richter	Carbon Membranes For Biogas Upgrading (Paper ID 904)
	09:40 - 10:00	Wenjing Zhang	Electrospun Nanofiber Materials For Energy And Environmental Applications (Paper ID 1147)

10:20-10:40

**TEA/COFFEE BREAK**

Room: BC202

Session Name: Biodiesel III

Session Chair: Wei-Hsin Chen, David Chiaramonti

Time	Paper ID	Author	Paper Title
10:40-11:00	1075	Anand Ramanathan, Vinoth Thangarasu	Effect Of High-Frequency Microwave Irradiation On Aegle Marmelos Correa Oil Extraction: Kinetic And Thermodynamic Study
11:00-11:20	1141	Gregory Hope Soegiantoro, Jesslynn Chang	Home-Made Eco Green Biodiesel From Chicken Fat (CIAT) And Waste Cooking Oil (PAIL)
11:20-11:40	1181	Charles Felix, Aristotle Ubando, Cynthia Madrazo, Alchris Woo Go, Alvin Culaba, Jo-Shu Chang, Wei-Hsin Chen,	Investigation Of Direct Biodiesel Production From Wet Microalgae Under Subcritical Conditions Using Definitive Screening Design
11:40-12:00	1244	David Chiaramonti	Sustainable Aviation Fuels: The Challenge Of Decarbonization
12:00-12:20	365	Jinxing Long	Production Of Oxygen-Containing Fuel From Lignin Bio-Oil: Guaiacol As The Model Compound

Room: FJ301

Session Name: Other renewable energy systems I

Session Chair: Xiaonan Wang, Shan-Tung Tu

Time	Paper ID	Author	Paper Title
10:40-11:00	1329	Leonardo Nibbi, David Chiaramonti, Enrico Palchetti	Project Bbchina: A New Master Program In Three Chinese Universities On Bio-Based Circular Economy; From Fields To Bioenergy, Biofuel And Bioproducts
11:00-11:20	1375	Mahsa Daraei	Potential Biofuel Production In A Fossil Fuel Free Transportation System: A Scenario For The County Of Västmanland In Sweden.
11:20-11:40	1158	Gabriele Comodi, Luca Cioccolanti, Khamid Mahkamov, Roger Penlington, Magin Lapuerta, Juan Jose Hernandez, Electo Eduardo Silva Lora, Osvaldo Venturini, Vladimir Rafael Cobas, Jose Carlos Escobar Palacio, Francisco Gaudêncio Mendonça Freires, Ednildo Andrade Torres, Julio Augusto Mendes da Silva, Viatcheslav Kafarov	Analysis Of Labour Market Needs For Engineers With Enhanced Knowledge In Renewable Energy In Some European And Latin-American Countries
11:40-12:00	79	Yingjie Pan, Xing Yao, Lei Zhu	Policy Uncertainties: What Investment Choice For Solar Panel Producers?
12:00-12:20	1140	Luis Ramirez Camargo, Javier Valdes, Yunesky Masip Macia, Wolfgang Dorner	Assessment Of On-Site Steady Electricity Generation From Renewable Energy Sources In Chile

# Day 2

# Oral Presentations

**Room: BC305**

**Session Name: Solar PV applications V**

**Session Chair: Kai Wang, Zhicong Chen**

Time	Paper ID	Author	Paper Title
10:40-11:00	1173	Anu Antony, Yaodong Wang, Tony Roskilly	A Detailed Optimisation Of Solar Photovoltaic/Thermal Systems And Its Application.
11:00-11:20	1209	Qinghua Yu, Alessandro Romagnoli, Yulong Ding, Yongliang Li	Numerical Investigation On Utilization Of Microencapsulated Phase Change Material Slurry In Photovoltaic/Thermal System
11:20-11:40	1231	Alexander Kies, Jakub Jurasz, Paweł Dąbek	Market Value Of PV Battery Systems For Autonomous Rural Energy Supply
11:40-12:00	1273	Jun Han, Lin Lu, Hongxing Yang, Yuanda Cheng	Thermal Regulation Of PV Façade Integrated With Thin-Film Solar Cells Through A Naturally Ventilated Open Air Channel
12:00-12:20	1318	Ying Yu, Enshen Long, Xi Chen, Hongxing Yang	Performance Study On An Unglazed Photovoltaic Thermal Collector Running In Sichuan Basin

**Room: BC402**

**Session Name: Other renewable energy systems II**

**Session Chair: Jan Skvaril, Tony Roskilly**

Time	Paper ID	Author	Paper Title
10:40-11:00	455	Siming You	Identification And Quantification Of The Uncertainty And Complementarity Among Wind, Solar, Geothermal, And Biomass Energy In Glasgow
11:00-11:20	498	Tianxiao Li, Pei Liu, Zheng Li	Quantifying Cross-Provincial Power Transmission Barriers In China, Based On A Computable General Equilibrium Approach
11:20-11:40	154	Mosè Rossi, Alessandra Nigro, Massimiliano Renzi	A Predicting Model Of Pats Performance In Off-Design Operating Conditions
11:40-12:00	1040	Bijay Sharma, T. Edward Yu, Burton English, Christopher Boyer, James Larson	Stochastic Optimization Of Cellulosic Biofuel Supply Chain Incorporating Feedstock Yield Uncertainty
12:00-12:20	947	Isam Janajreh Janajreh, Khadije El Kadi, Raed Hashaikeh, Rizwan Ahmad	Design And Performance Evaluation Of A Portable Hybrid Desalination Unit Using Direct Contact Membrane Distillation In Dual Configuration

**Room: BC404**

**Session Name: Fuel cells IV**

**Session Chair: Dennis Leung, Tomaž Katrašnik**

Time	Paper ID	Author	Paper Title
10:40-11:00	347	Zongping Shao	A New Sodium-Ion-Conducting Layered Perovskite Oxide As Highly Active And Sulfur Tolerant Electrocatalyst For Solid Oxide Fuel Cells
11:00-11:20	351	Haoran XU, Jin Xuan	Modeling Of A Combined CH <sub>4</sub> -Assisted Solid Oxide Co-Electrolysis And Fischer-Tropsch Synthesis System For Low-Carbon Fuel Production
11:20-11:40	372	Shizhong Chen, Zhongxian Xia, Xuyang Zhang, Yuhou Wu	Numerical Studies Of Effect Of Interdigitated Flow Field Outlet Channel Width On PEM Fuel Cell Performance
11:40-12:00	433	Jian Zhao, Xianguo Li	Effect Of Catalyst Layer Fabrication Methods On Electrode Structure And Mass Transport In Polymer Electrolyte Membrane Fuel Cells
12:00-12:20	452	Mengqian Zhu, Xu Xie, Kangcheng Wu, Aezid-Ul-Hassan Najmi, Jiao Kui	Experimental Investigation Of The Effect Of Membrane Water Content On PEM Fuel Cell Cold Start

**Room: FJ302**

**Session Name: Heat pumps and refrigeration systems III**

**Session Chair: Mayken Espinoza-Andaluz, Vanja Subotic**

Time	Paper ID	Author	Paper Title
10:40-11:00	381	Kang Li	A Study On Heating Performance Of The Secondary Loop Heat Pump For Electric Vehicles
11:00-11:20	588	Sven Eggimann, Jim W. Hall, Nick Eyre	Exploring UK Demand Management Potential For Space And Water Heating Through High Resolution Spatio-Temporal Simulation Modelling
11:20-11:40	912	Mohammed Al-Tameemi, Youcai Liang, Zhibin Yu	Combined ORC-HP Thermodynamic Cycles For DC Cooling And Waste Heat Recovery For Central Heating
11:40-12:00	975	Yudong Xia, Qiang Ding	A New Degree Of Superheat Controller For Mitigating Hunting In A Direct Expansion Air Conditioning System
12:00-12:20	1058	Binjian Nie	Experimental Investigation Of Air Conditioning With Cold Storage For Transport Application

# Day 2

# Oral Presentations

Room: FJ303

Session Name: Clean energy conversion technology II

Session Chair: Li Zhao, Zhibin Yu

Time	Paper ID	Author	Paper Title
10:40-11:00	1179	Mingyu Hou, Zhanghua Wu, Jianying Hu, Limin Zhang, Ercang Luo	Experimental Study On A Thermoacoustic Combined Cooling And Power Technology For Natural Gas Liquefaction
11:00-11:20	293	Arif Darmawan, Koji Tokimatsu, Muhammad Aziz, Muhammad W. Ajiwibowo	Efficient Black Liquor Conversion To Power And H <sub>2</sub> By Adopting Negative Emission Technology
11:20-11:40	1150	Guanyu Fang, Wenjing Chen	A Novel Air Source Heat Pump Powered Bed-Based Space Heating (ASHP-BBSH) System For Improved Indoor Thermal Environment
11:40-12:00	935	Steven Lecompte, Maria Anna Chatzopoulou, Christos Markides, Michel De Paepe	Off-Design Comparison Of Subcritical And Partial Evaporating Orcs In Quasi-Steady State Annual Simulations
12:00-12:20	1345	Zhonghe Han, Peng Li	Multi-Objective Optimization And Improved Analysis Of An Organic Rankine Cycle Coupled With The Dynamic Turbine Efficiency Model

Room: HJ203

Session Name: Smart buildings (energy system control and operation) III

Session Chair: Steven Jige Quan, Allan Schrøder Pedersen

Time	Paper ID	Author	Paper Title
10:40-11:00	315	Luis Ramirez Camargo, Katharina Gruber, Felix Nitsch, Wolfgang Dorner	Hybrid Renewable Energy Systems To Supply Electricity Self-Sufficient Residential Buildings In Central Europe
11:00-11:20	878	Millot Ariane, Nadia Maizi, Vincent Mazauric	From Phase Transition To Energy Transition: What Can We Learn From Physics?
11:20-11:40	1187	Choongwan Koo, Wenzhuo Li, Seung Hyun Cha, Joseph H.K. Lai, Jinsoo Lee	A Conceptual Framework For The Real-Time Monitoring And Diagnostic System For The Optimal Operation Of Smart Building: A Case Study In Hotel ICON Of Hong Kong
11:40-12:00	1236	Sally Salome Shahzad, John Kaiser Calautit, Ben Richard Hughes, Satish BK, Hom B. Rijal	Visual Thermal Landscaping (VTL) Model: A Qualitative Thermal Comfort Approach Based On The Context To Balance Energy And Comfort
12:00-12:20	1290	Kaisheng Lam, Xiaowei Luo, Zhuang ZHENG	Electricity Load Decomposition For Small Appliances: Prototype Development And Testing

Room: HJ209

Session Name: Energy conservation in buildings I

Session Chair: Xiaohu Yang, Xiaojing Zhang

Time	Paper ID	Author	Paper Title
10:40-11:00	709	Mengjie Song, Ning Mao	Uneven Frost Distribution On Negative Effect Of Downwards Flowing Melted Frost During Defrosting For An Air Source Heat Pump Unit
11:00-11:20	715	Hilal Bahlawan, Mirko Morini, Michele Pinelli, Witold-Roger Pogonietz, Pier Ruggero Spina, Mauro Venturini	Optimal Design Of A Hybrid Energy Plant By Accounting For The Cumulative Energy Demand
11:20-11:40	723	Michal Pomianowski, Yovko Ivanov Antonov, Per Heiselberg	Development Of Energy Renovation Packages For The Danish Residential Sector
11:40-12:00	738	Danny H W Li, Shuyang Li, Wenqiang Chen	Estimating The Switching Frequency And Energy Saving For Daylight-Linked Lighting On-Off Controls
12:00-12:20	594	Shu Li	Reduced Scale Experimental Study And CFD Analysis On The Resistance Characteristic Of Utility Tunnel's Ventilation System

Room: HJ210

Session Name: Energy planning I

Session Chair: Xiaoling Zhang, Reinhard Madlener

Time	Paper ID	Author	Paper Title
10:40-11:00	305	Tingru Yang, Hua Liao	Does The Low Carbon Achievement Affect The Subsequent Goal? Evidence From China's Cities
11:00-11:20	375	Christoph Mueller, Tobias Falke, Andre Hoffrichter, Lothar Wyrwoll, Carlo Schmitt, Marc Trageser, Michael Metzger, Matthias Huber, Martin Kueppers, Dieter Most, Simon Paulus, Hans Joerg Heger	Integrated Planning And Evaluation Of Multi-Modal Energy Systems For Decarbonization Of Germany
11:20-11:40	425	Karin Schuermann, Anna Ernst, Diana Schumann, Juergen-Friedrich Hake	Transformation Of Energy Systems As Common Projects: An Integration Of Different Scientific Approaches To Address Real-World Challenges
11:40-12:00	456	Siming You, Matthew Dowds	Economic Analysis Of The Routes For Fulfilment Of Net-Zero Energy Building (NZEB) In The UK
12:00-12:20	549	Hadi Farabi-Asl	Ground Source Heat Pump Status And Supportive Energy Policies In Japan

# Day 2

# Oral Presentations

Room: HJ304

Session Name: Urban Energy Systems Design in the IoT Era

Session Chair: Perry Yang, Yoshiki Yamagata

Time	Paper ID	Author	Paper Title
10:40-11:00	1037	Daisuke Murakami, Yoshiki Yamagata, Takahiro Yoshida, Tomoko Matsui	Optimization Of Local Microgrid Model For Energy Sharing Considering Daily Variations In Supply And Demand
11:00-11:20	1116	Takahiro Yoshida, Yoshiki Yamagata, Daisuke Murakami	Energy Demand Estimation Using Quasi-Real-Time People Activity Data
11:20-11:40	923	Soowon Chang, Nirvik Saha, Daniel Castro-Lacouture, Perry Yang	Generative Design And Performance Modeling For Relationships Between Urban Built Forms, Sky Opening, Solar Radiation And Energy
11:40-12:00	1297	Yoshiki Yamagata, Daisuke Murakami, Yihan Wu, Perry Yang, Takahiro Yoshida, Robert Binder	Big-Data Analysis For Carbon Emission Reduction From Cars: Towards Walkable Green Smart Community
12:00-12:20	40	Stephen Jia Wang, Patrick Moriarty, Xiaoyu Yan	Liquid Biofuels: Not A Long-Term Transport Solution

Room: FJ304

Session Name: Energy resilient urban planning

Session Chair: SK Chou

Time	Paper ID	Author	Paper Title
10:40-11:00	1027	Xiaonan Liu, Kai Hou, Hongjie Jia, Yunfei Mu, Ma Shiqian, Fei Wang, Yunkai Lei, CHAOYU DONG	The Impact-Increment State Enumeration Method Based Component Level Resilience Indices Of Transmission System
11:00-11:20	1188	Portia Murray, Kristina Orehounig, Jan Carmeliet	Optimal Design Of Multi-Energy Systems At Different Degrees Of Decentralization
11:20-11:40	907	Saurabh Ratra	Optimal Coordinated Control Of Olts Using Taguchi Method To Enhance Voltage Stability Of Power Systems
11:40-12:00	1324	Yan Li, Qi Zhang, Xuefei Liu, Hailong Li, Ge Wang	Study On The Optimal Deployment For Photovoltaic Components Recycle In China
12:00-12:20	762	Dan Song	Exergy Conversion Efficiency Analysis Of A Cement Production Chain

Room: QR512

Session Name: Emissions reduction II

Session Chair: Xi Jiang, Taehoon Hong

Time	Paper ID	Author	Paper Title
10:40-11:00	51	Lijuan Cao, Zhijun Li, He Li, Boxi Shen, Zhu Lingya, Wu Yue	Influence Of CO <sub>2</sub> Concentration And Inlet Temperature On Adsorption Path Of Lean Nox Trap
11:00-11:20	135	Xiuxiu Sun, Xingyu Liang, Peilin Zhou, Hanzhengnan Yu, Xinyi Cao	Computational Study Of NOx Reduction On A Marine Diesel Engine By Application Of Different Technologies
11:20-11:40	161	Alexander Soh, Swapnil Dubey, Kenny Hedlund, Jayant Kaushal	Field Testing Of General Ventilation Devices And Systems For Particles Removal Efficiency And Pressure Drop
11:40-12:00	215	Enxing Zhang, Peijian Yang, Fei Zhang, Xingyu Liang, Xinyi Cao, Hanzhengnan Yu, Xiaohui Wang	Evaluation Of Exhaust Gas Recirculation And Fuel Injection Strategies For Emission Performance In Marine Two-Stroke Engine
12:00-12:20	216	Fei Zhang, Xingyu Liang, Peijian Yang, Enxing Zhang, Xinyi Cao, Xiaohui Wang, Qingling Liu	Structure Optimization For SCR Reactor Based On RSM Method

Room: HJ303

Session Name: Gas hydrates II

Session Chair: Yong-Chen Song, Ju Dong Lee

Time	Paper ID	Author	Paper Title
10:40-11:00	767	Ju Dong Lee, Seong Jun Cho, Hai Truong Lam Son	In-Situ Raman And Kinetic Study On The Methane Hydrate Formation And Decomposition
11:00-11:20	847	Yi Wang, Jing-Chun Feng, Xiao-Sen Li	Large Scale Experimental Investigation Of Influence Of Heat Conduction And Heat Convection On Hydrate Dissociation By Depressurization In Sandy Sediment
11:20-11:40	927	Zhiming Xia, Xiao-Sen Li, Zhaoyang Chen	Gas Hydrate Formation Process For Simultaneously Capture Of CO <sub>2</sub> And H <sub>2</sub> S
11:40-12:00	1110	Rupeng Wei, Lei Yang, Jiafei Zhao, Yongchen Song	Evolution Of Effective Thermal Conductivity During Hydrate Formation And Decomposition In Natural Sediments
12:00-12:20	431	Guo Xianwei	Effect Of Thermal Properties On The Production Behavior From Water-Saturated Methane Hydrate-Bearing Sediments Using Depressurization



# Day 2

# Oral Presentations

Room: QR504

Session Name: Micro- and nano-technologies I

Session Chair: Zan Wu, Xianguo Li

Time	Paper ID	Author	Paper Title
10:40-11:00	1100	Shashank Sundriyal, Sunita Mishra, Akash Deep	Supercapacitor Electrode Performance Of Manganese- 1,4-Benzenedicarboxylate Metal Organic Framework With High Energy Density
11:00-11:20	233	Xiao-ying Lu	PDDA-Mediated Synthesis Of Uniform Calliandra-Like Mnco2o4.5 Anodes With Micro/Nanostructures For Advanced Lithium-Ion Batteries
11:20-11:40	1185	Zan Wu, Zhen Cao, Sahar Abbood, Bengt Sunden	An Analysis Of Pool Boiling Heat Transfer On Nanoparticle-Coated Surfaces
11:40-12:00	1257	Ying Chen	Fluorescence Of CdSe/ZnS Quantum Dots In Toluene: Effect Of Cyclic Temperature
12:00-12:20	1060	Wei-Chun Chen, Chi-Min Shu, Yih-Wen Wang, Wun-Cheng Jhang	Explosion Energy And Safety Distance Appraisal For Li-Ion Polymer Batteries

Room: QR514

Session Name: Integrated planning and optimal operation of urban energy systems III

Session Chair: Dan Wang, Yanli Liu

Time	Paper ID	Author	Paper Title
10:40-11:00	867	Akane Uemichi, Masaaki Yagi, Ryo Oikawa, Yudai Yamasaki, Shigehiko Kaneko	Multi-Objective Optimization To Determine Installation Capacity Of Distributed Power Generation Equipment Considering Energy-Resilience Against Disasters
11:00-11:20	894	Truong Nguyen	Final And Primary Energy Use For Heating New Residential Area With Varied Exploitation Levels, Building Energy Performance And District Heat Temperatures
11:20-11:40	900	Chao Ding, Wei Feng, Xiwang Li, Nan Zhou	Urban-Scale Building Energy Consumption Database: A Case Study For Wuhan, China
11:40-12:00	1163	Xinwei Shen, Qinglai Guo, Hongbin Sun	Regional Integrated Energy System Planning Considering Energy Price Uncertainties A Two-Stage Stochastic Programming Approach
12:00-12:20	510	Meng-Jie Li	Comparisons Of Thermal Performance And Cost For Three Thermal Energy Storage Systems Utilized In Supercritical CO <sub>2</sub> Brayton Cycle

Room: BC304

Session Name: Other renewable energy systems III

Session Chair: Xiaohua Xia

Time	Paper ID	Author	Paper Title
10:40-11:00	773	Ke Sun, Zhanhong Wan	Simulation Of Wave Energy Converter With Designed Pendulum-Slope Combination
11:00-11:20	780	Hongyu Zhu, Junyi Cao	Damping Characteristic Analysis Of An Airflow Energy Harvesting System
11:20-11:40	1072	Jiyun Du	Study On The Effects Of Outer Blade Angle On The Performance Of Inline Cross-Flow Turbine
11:40-12:00	1144	Bing Xu	Performance Evaluation Of Alternative Jet Fuels Using A Hybrid MCDA Method
12:00-12:20	537	Yifei Wang, Wending Pan, Yu Ho Kwok, Xu Lu, Dennis Y.C. Leung	Low-Cost Al-Air Batteries With Paper-Based Solid Electrolyte

**Panel Session: Porous Materials for Biogas Upgrading & Storage - II**

Room: HJ305

10:40-12:20	10:40 – 11:20	George Shimizu	Practical CO <sub>2</sub> Sorbents From Metal Organic Frameworks
	11:20 – 11:40	Farid Akhtar	Optimized Cesium And Potassium Ion-Exchanged Zeolites A And X Granules For Biogas Upgrading
	11:40 – 12:00	Carlos Grande	Towards A Design Of A Pressure Swing Adsorption Unit For Small Scale Biogas Upgrading
	12:00 – 12:20	Przemyslaw Rzepka	Upgrading Of Raw Biogas Into Biomethane With Structured Nano-Sized Zeolite  Nak -A Adsorbents In A PVSA Unit

12:20-13:20

**LUNCH**

13:20-14:00

**POSTER SESSION II**

Room: AG206

# Day 2

# Oral Presentations

**Room: BC202**

**Session Name: Biomass combustion I**

**Session Chair: Wenbin Yu, Tamer Ismail**

Time	Paper ID	Author	Paper Title
14:00-14:20	882	Dagnija Blumberga	Experimental And Analytical Analysis Of The Flue Gas Condenser – Fog Unit
14:20-14:40	951	Wei-Chieh Kuo, Yueh-Heng LI, Yanru Wang	Combustion Behavior Of Australian Coal Blended With Torrefied Alee Trees
14:40-15:00	1066	Wenhan Cao	Experimental Study On The Influences Of Operating Parameters On The Retention Of Potassium In Biomass
15:00-15:20	439	Zhiqiang Wu, Yaowu Li, Donghai Xu, Haiyu Meng	Thermal Effect And Kinetic Analysis On Co-Pyrolysis Of Furnace Slag With Cellulose From Biomass
15:20-15:40	1317	Najibeh Tolouefarrokh, Hannu Suopajarvi, Petri Sulasalma, Timo Fabritius	A Thermogravimetric Analysis Of Lignin Char Combustion

**Room: FJ301**

**Session Name: Biomass pyrolysis and gasification I**

**Session Chair: Kunio Yoshikawa, Adi Surjosatyo**

Time	Paper ID	Author	Paper Title
14:00-14:20	913/914	Khanh-Quang Tran	Energy Crops For Sustainable Phytoremediation – Part 1: Fuel Characterization Energy Crops For Sustainable Phytoremediation – Part 2: Thermal Decomposition Kinetics
14:20-14:40	930	Jian Wang	Residence Time Effects On Rice Straw During Two-Step Liquefaction In Carbon Dioxide Atmosphere And Its Behaviors: Ethanol-Water Co-Solvent
14:40-15:00	1213	Prashant Kamble	Biomass Gasification Of Hybrid Seed Miscanthus In Glasgow's Downdraft Gasifier Testbed System
15:00-15:20	1230	Daniele Antolini, Francesco Patuzzi, Marco Baratieri, Snehes Shivananda Ail, Maurizio Grigiante	Experimental And Modeling Analysis Of Air And CO <sub>2</sub> Biomass Gasification In A Reverse Lab Scale Downdraft Gasifier
15:20-15:40	93	Bo-Jhih Lin, Wei-Hsin Chen, Michal Safar	Effects Of Impregnated Potassium On Biomass Torrefaction

**Room: BC305**

**Session Name: Waste to energy conversion I**

**Session Chair: Zhang Bai, Yaodong Wang**

Time	Paper ID	Author	Paper Title
14:00-14:20	43	Shaojie Zhang	Pilot Study On Ascension-Pipe Heat Exchanger Used For Waste Heat Recovery Of Coke Oven Gas
14:20-14:40	270	Baskoro Lokahita, Ganjar Samodro, Muhammad Aziz, Haryono Huboyo, Fumitake Takahashi	Energy Recovery Potential From Excavating Municipal Solid Waste Dumpsite In Indonesia
14:40-15:00	760	Meixi Liu, Dawei Wu	A New Fresh Water Generation System Under High Vacuum Degrees Intensified By LNG Cryogenic Energy
15:00-15:20	945	Yaojie Tu	Effect Of Different Operating Conditions On The Performance Of A 32 MW Woodchip-Fired Grate Boiler
15:20-15:40	617	Xiaonan Ma, Gequn Shu, Hua Tian, Haoqi Yang, Tianyu Chen	Optimization Of Length Ratio In Segmented Thermoelectric Generators For Engine's Waste Heat Recovery

**Room: BC402**

**Session Name: Future engines of high efficiency and low emissions I**

**Session Chair: Yiji Lu, Min Chen**

Time	Paper ID	Author	Paper Title
14:00-14:20	91	Liu Jie, Junle Wang, Hongbo Zhao	Optimization Of The Combustion Chamber And Fuel Injection Of A Diesel/Natural Gas Dual Fuel Engine
14:20-14:40	749	Muhammad Khristamto Aditya Wardana, Hyun Jo, Ocktaeck Lim	A Study Of Urea Injection Timing To Predict The Nox Conversion In SCR Systems
14:40-15:00	95	Guo Chendong, Zuo Zhengxing, Jia Boru, Ziwei Zhang, Feng Huihua, Tony Roskilly	Parametric Analysis Of A Dual-Piston Type Free-Piston Gasoline Engine Linear Generator
15:00-15:20	103	He Lv, Jingyuan Li, Xiumin Yu, Mengliang Li, Tian Yang	Numerical Study On Combustion And Emission Characteristics Of A PFI Gasoline Engine With Hydrogen Direct-Injection

# Day 2

# Oral Presentations

Room: BC404

Session Name: Future engines of high efficiency and low emissions II

Session Chair: Chen Yue, Tony Roskillly

Time	Paper ID	Author	Paper Title
14:00-14:20	429	Cheng Chen, Xi Jiang, Yi Sui	Prediction Of Transport Properties Of Fuels In Supercritical Conditions By Molecular Dynamic Simulation
14:20-14:40	640	Nguyen Xuan Khoa, Yujin Kang, Ocktaeck Lim	The Effects Of Combustion Duration On Residual Gas, Effective Real Energy And Engine Power Of Motorcycle Engine At Full Load
14:40-15:00	666	Bambang Wahono, Kyeonghun Jwa, Ocktaeck Lim	A Study On In-Cylinder Flow Of Small Engine Using Steady-State Flow Benches
15:00-15:20	718	Taib Iskandar Mohamad, Hazim Moria	Performance And Emissions Of A Hydrogen-Enriched Natural Gas Spark Ignition Engine With A Dynamic-Homogeneous Mixer
15:20-15:40	742	G M Hasan Shahariar, Hyun Jo, Ocktaeck Lim	Analysis Of The Spray Wall Impingement Of Urea-Water Solution For Automotive SCR De-NOx Systems

Room: FJ302

Session Name: Heat pumps and refrigeration systems IV

Session Chair: Dengjia Wang

Time	Paper ID	Author	Paper Title
14:00-14:20	1047	Suola Shao, Huan Zhang, Lingfei Jiang, Shijun You, Wandong Zheng	Numerical Investigation And Thermal Analysis Of A Refrigerant-Heated Radiator Heating System Coupled With Air Source Heat Pump
14:20-14:40	151	Youcai Liang, Zhibin Yu	Working Fluid Selection For A Combined System Based On Coupling Of Organic Rankine Cycle And Air Source Heat Pump Cycle
14:40-15:00	1107	Altamash Baig, Kajen Ethirveerasingham, Alan S. Fung	Development Of A Monitoring System For A Gas-Fired Absorption Heat Pump And Results For Testing In Heating And Cooling Mode
15:00-15:20	1157	Guanyu Fang, Wenjing Chen	An Experimental Study On A Novel Direct Expansion Based Temperature And Humidity Independent Control Air Conditioning System
15:20-15:40	1302	Asmaa A. Harraz, James Freeman, Kai Wang, Niall Mac Dowell, Christos Markides	Diffusion-Absorption Refrigeration Cycle Simulations In Gproms Using SAFT- $\Gamma$ Mie

Room: FJ303

Session Name: ORC I

Session Chair: Alexander Soh, Kian Jon Chua

Time	Paper ID	Author	Paper Title
14:00-14:20	1143	Alessia Arteconi, Luca Del Zotto, Roberto Tascioni, Khamid Mahkamov, Chris Underwood, Luisa F. Cabeza, Alvaro De Gracia, Piero Pili, André Charles Mintsa, Carlo Maria Bartolini, Toni Gimbernat, Teresa Botargues, Elvedin Halimic, Luca Cioccolanti	Simulation Analysis Of An Innovative Micro-Solar 2kwe Organic Rankine Cycle Plant Coupled With A Multi-Apartments Building For Domestic Hot Water Supply
14:20-14:40	1353	Wei Fan	Influence Of Internal Heat Exchanger On The Performance Of Organic Rankine Cycle(ORC) System Of Cryogenic Flue Gas Heating
14:40-15:00	1301	Michael Simpson, Maria Anna Chatzopoulou, Oyenyi Oyewunmi, Christos Markides	Technoeconomic Analysis Of Internal Combustion Engine – Organic Rankine Cycle Cogeneration Systems In Energy-Intensive Buildings
15:00-15:20	317	Yilin Zhu, Weiyi Li, Guanzhong Sun	Thermodynamic Analysis Of Evaporation Temperature Glide Of Zeotropic Mixtures On The ORC-CCHP System Integrated With Ejector And Heat Pump
15:20-15:40	458	Guibing Chen, Qingsong An, Jun Zhao, Nini Chang, Yongzhen Wang, Hongmei Yin, Likai Hu, Yulie Gong, Li Xiaowei	The Active Design Of Mixtures Based On Transition Temperature Of Heat Source For Organic Rankine Cycle

Room: HJ203

Session Name: Smart grid - demand response, power dispatch I

Session Chair: Jianzhong Wu, Yi Ding

Time	Paper ID	Author	Paper Title
14:00-14:20	167	Peng Li, Haoran Ji, Guanyu Song, Mingkun Yao, Chengshan Wang, Jianzhong Wu	A Combined Central and Local Voltage Control Strategy of Soft Open Points in Active Distribution Networks
14:20-14:40	243	Weilin Li, Liu Yang, Baisong Ning	Effect Evaluation of Chiller-side Demand Response Strategies in Demand Response of Chinese Commercial Buildings
14:40-15:00	397	Mariz Arias, Myunchin Kim, Sungwoo Bae	Impact of Electric Vehicle Charging Demand on Commercial Demand
15:00-15:20	427	Hanjie Yuan, Gengfeng Li	Distribution System Reliability Assessment Considering Cyber-Physical Integration
15:20-15:40	445	Gaochen Cui, Bo Liu, Wenpeng Luan	Neural Network with Extended Input for Estimating Electricity Consumption Using Background-based Data Generation

# Day 2

# Oral Presentations

Room: HJ209

Session Name: Energy conservation in buildings II

Session Chair: Xiaohu Yang, Sally Shahzad

Time	Paper ID	Author	Paper Title
14:00-14:20	12	Xiaojing Zhang	Data Center Cooling Energy Analysis Based On Subsystem Modeling And Simulation
14:20-14:40	459	Chaobo Zhang, Yang Zhao, Xuejun Zhang	An Improved Association Rule Mining-Based Method For Discovering Abnormal Operation Patterns Of HVAC Systems
14:40-15:00	536	Hangxin Li	Probabilistic Optimal Design And On-Site Adaptive Commissioning Of Building Air-Conditioning Systems Concerning Uncertainties
15:00-15:20	727	Anna Marszal-Pomianowska	High Resolution Measuring System For Domestic Hot Water Consumption. Development And Field Test.
15:20-15:40	804	Meltiani Belekoukia, Jeannie Ziang Yie Tan, Mercedes Maroto-Valer, Jin Xuan, John Andresen, Huizhi Wang	Laser Induced Plasmonic Heating With Au Decorated TiO <sub>2</sub> Nanoparticles

Room: HJ210

Session Name: Energy planning II

Session Chair: Michele Zinzi, Andrea Trianni

Time	Paper ID	Author	Paper Title
14:00-14:20	638	Hao Ding, Dequn Zhou, Peng Zhou	Optimal Policy Supports For Renewable Energy Technologies Considering The Cost-Efficiency
14:20-14:40	750	Takuro Kobashi, Masaru Yarime	Techno-Economic Assessment Of The Residential Photovoltaic Systems Integrated With Electric Vehicles: A Case Study Of Japanese Households Towards 2030
14:40-15:00	792	Tiaan Gildenhuys, Lijun Zhang, Xianming Ye, Xiaohua Xia	Optimization Of The Operational Cost And Environmental Impact Of A Multi-Microgrid System
15:00-15:20	816	Donglan Zha	Resist Or Not? Response Of Scale And Leverage Of Thermal Power Enterprises In China
15:20-15:40	1025	Pengfei Jin, Delin Fang, Bin Chen	Exergy Analysis For Urban Energy-Water Nexus Based On Input-Output Model

Room: HJ304

Session Name: Life cycle assessments (LCA) II

Session Chair: Xiaoyu Yan, Krushna Mahapatra

Time	Paper ID	Author	Paper Title
14:00-14:20	613	Zhiyi Yuan	Life Cycle Analysis On Liquefied Natural Gas And Compressed Natural Gas In Heavy-Duty Trucks With Methane Leakage Emphasized
14:20-14:40	1033	Saige Wang, Bin Chen	Trade-Offs And Synergies In Energy-Water Nexus Technologies Based On Life Cycle Analysis
14:40-15:00	675	Chizhi Zhang, Kong Fah Tee	Application Of Gamma Process And Maintenance Cost For Fatigue Damage Of Wind Turbine Blade
15:00-15:20	887	Tianduo Peng, Xunmin Ou, Xiaoyu Yan	Life-Cycle Analysis Of Energy Consumption And GHG Emissions Of Aluminum Production In China
15:20-15:40	1113	Huanhuan Tong, Yen Wah Tong	A Comparative Life Cycle Assessment On Mono- And Co-Digestion Of Food Waste And Sewage Sludge

Room: FJ304

Session Name: Life cycle assessments (LCA) III

Session Chair: Victor Nian, Jun Yuan

Time	Paper ID	Author	Paper Title
14:00-14:20	1216	Ambrose Dodoo, Leif Gustavsson, Uniben Tettey	Effects of end-of-life management options for materials on primary energy and greenhouse gas balances of building systems
14:20-14:40	806	Yating Liu, Saige Wang, Bin Chen	Optimization of national food production layout based on comparative advantage index
14:40-15:00	649	Qing Yang, Zhiyu Wei, Hewen Zhou, Jiashuo Li, Haiping Yang, Hanping Chen	Greenhouse Gas Emission Analysis of Biomass Moving-bed Pyrolytic Polygeneration Systems based on Aspen Plus and Hybrid LCA in China
15:00-15:20	8	Ayodeji Oke, Douglas Aghimien, Clinton Aigbavboa, Chanda Musenga	Drivers of Sustainable Construction Practices in the Zambian Construction Industry
15:20-15:40	809	Lijing Zhu, Peize Wang	Study On Indirect Network Effects On The Construction Of Electric Vehicle Charging Piles Based On Game Theory Analysis

# Day 2

# Oral Presentations

Room: QR512

Session Name: Emissions reduction III

Session Chair: Xi Jiang

Time	Paper ID	Author	Paper Title
14:00-14:20	273	xingyu liang, Xinyi Cao, Fei Zhang, Enxing Zhang, Peijian Yang, Hanzhengnan Yu	Comparison of the Performance of Different Mechanisms on Soot Generation of Low-Speed Two-Stroke Marine Engines
14:20-14:40	292	Srikanth Allamsetty, Sankarsan Mohapatro	Prediction of NO and NO2 Concentrations in Ozone Injected Diesel Exhaust after NTP Treatment Using Dimensional Analysis
14:40-15:00	396	Hanzhengnan Yu, Mengliang Li, Jingyuan Li, Yu Liu, He Lv, Kunqi Ma	Real-road NOx Emission and Fuel Consumption Characteristics of China Public Transit Buses
15:00-15:20	413	Haitao Zhao, Shufan Yin	CeO2 Based Catalysts For Elemental Mercury Capture
15:20-15:40	754	Fanghua Ye, Jiangqiang Deng, Kai Liu	CFD Simulation on Cavitation in a Rotary Vane Energy Recovery Device

Room: HJ303

Session Name: Emissions reduction IV

Session Chair: Jong-Taek Oh, Rebei Bel Fdhila

Time	Paper ID	Author	Paper Title
14:00-14:20	37	Sneha Ponnada, Tunuguntla Subrahmanyam, Sureddy Vishveshwara Naidu	An Experimental Investigation On Heat Transfer And Friction Factor Of Silicon Carbide/Water Nanofluids In A Circular Tube
14:20-14:40	106	Wei Wang, Zuo Zhengxing, Jinxiang Liu	The Effect Of Wall Thermal Conductivity On The Thermal Performance Of A Partially Filled Micro Porous Combustor
14:40-15:00	162	Huimin Wei, Xianwei Huang, Lin Chen, Lijun Yang, Xiaoze Du	Performance Of A Novel Natural Draft Hybrid Cooling Tower For Thermal Power Generation
15:00-15:20	173	Yu Wang, Rongtang Liu, Ming Liu, Junjie Yan	Numerical Investigation On Erosion Characteristics Of Coplanar Elbows Connection For Gas-Solid Flow
15:20-15:40	359	Pan Zhang, Ting Ma, Hanbing Ke, Wang Wei, Lin Yuansheng, Qiuwang Wang	Numerical Investigation On Local Thermal Characteristics Of Printed Circuit Heat Exchanger For Natural Gas Liquefaction

Room: QR504

Session Name: Thermodynamic analysis I

Session Chair: Sheng Li, Weifeng He

Time	Paper ID	Author	Paper Title
14:00-14:20	793	Maoli Huang, Depeng Gu, Yun Li	Transient Thermal Analysis Of BOG Compressor During Start-Up Process
14:20-14:40	828	Stefano Dettori, Alessandro Maddaloni, Valentina Colla, Orlando Toscanelli, Federico Bucciarelli, Damaso Checcacci, Annamaria Signorini	Nonlinear Model Predictive Control Strategy For Steam Turbine Rotor Stress
14:40-15:00	950	Raphael Wittenburg	Effects Of Rising Dynamic Requirements On The Lifetime Consumption Of A Combined Cycle Gas Turbine Power Plant
15:00-15:20	1082	Ward De Paepe, Diederik Coppitters, Simon Abraham, Panagiotis Tsirikoglou, Ghader Ghorbaniasl, Francesco Contino	Robust Operational Optimization Of A Typical Micro Gas Turbine
15:20-15:40	1130	Xuetian Lu, Fujun Zhang, Yuhang Liu, Sufei Wang	Analysis On Influences Of Scavenging Ports Width To Scavenging Process Based On Opposed Piston Two Stroke Diesel Engine

Room: QR514

Session Name: Transactive energy system for integrating distributed energy resources I

Session Chair: Can Wan, Zhenyuan Zhang

Time	Paper ID	Author	Paper Title
14:00-14:20	178	Anjian Meng	Kalman Filtering Based Interval State Estimation For Attack Detection
14:20-14:40	266	Pengbang Wei	Microgrid in China: A review in the perspective of application
14:40-15:00	438	Xichang Wen	Interval State Estimation for Attack Detection Base on PQ decomposition
15:00-15:20	579	Peiling Li, Guibin Wang, Huizhi Wang, Zhongxue Fu, Chao Wu	Optimal Operation of Coupled Distribution System and Traffic System using Traffic Flow and OPF Analysis
15:20-15:40	1026	Biao Li, Can Wan, Kai Yuan, Yi Song	Demand Response for Integrating Distributed Energy Resources in Transactive Energy System

# Day 2

# Oral Presentations

Room: BC304

Session Name: Other renewable energy systems IV

Session Chair: Umberto Desideri, T. Edward Yu

Time	Paper ID	Author	Paper Title
14:00-14:20	208	Wending Pan, Yifei Wang, Yu Ho Kwok, Dennis Y.C. Leung	A Low-Cost Portable Cotton-Based Aluminum-Air Battery With High Energy Density
14:20-14:40	1098	Hong Zhong, Yuanhao Wang, Hongxing Yang, Weilong Zhang	A Novel Transparent Thermal Insulation Bilayer Coating Based On ATO/Black TiO <sub>2</sub>
14:40-15:00	791	Mingeon Kim, Arunkumar Chandrasekhar Chandrasekhar, Vivekananthan Venkateswaran, Woo Joong Kim, Minhyeok Bae, Sang Jae Kim	Bio-Mechanical Energy Scavenging Triboelectric Nanogenerator As Smart Computer Mouse
15:00-15:20	557	Charoenporn Lertsatitthanakorn	Experimental Performance Study Of A Solar Parabolic Dish Photovoltaic - Thermoelectric Generator
15:20-15:40	1165	Francesca Bonfà, Miriam Benedetti, Stefano Ubertaini, Vito Introna, Annalisa Santolamazza	New Efficiency Opportunities Arising From Intelligent Real Time Control Tools Applications: The Case Of Compressed Air Systems' Energy Efficiency In Production And Use

14:00-15:40

**Panel session: The development of hydrate exploitation and utilization technology in future**  
Room: HJ305

15:40-16:00

**TEA/COFFEE BREAK**

Room: BC202

Session Name: Solar thermal energy III

Session Chair: Charoenporn Lertsatitthanakorn, Tao Ma

Time	Paper ID	Author	Paper Title
16:00-16:20	678	Tao Wen	Investigation On The Regeneration Characteristics Of LiCl Solution With PVP And Mwnts
16:20-16:40	801	Jian Qu, Ruomei Zhang, Zhihao Wang	Photo-Thermal Conversion Characteristics Of Hybrid GO-MWCNT/Therminol® 66 Nanofluids For Direct Absorption Solar Collectors
16:40-17:00	1201	Biplab Das, Suman Debnath, Pitambar Randive	Influences Of Pentagonal Ribs On The Performance Of Rectangular Solar Air Collector
17:00-17:20	821	xuechuan zhang, Jing Ding, Xiaolan Wei	The Effect Of Nano-MgO On Thermal Properties Of Ternary Chloride Fluid
17:20-17:40	840	Xiaochen Lu	Exergy Analysis Of A Lunar Based Solar Thermal Power System With Finite-Time Thermodynamics
17:40-18:00	943	Baiju V, Rahul Raj	Thermodynamic Analysis Of A Solar Powered Adsorption Cooling And Desalination System

Room: FJ301

Session Name: Solar thermal energy IV

Session Chair: Dengjia Wang, Yuexia Lv

Time	Paper ID	Author	Paper Title
16:00-16:20	952	Isam Janajreh Janajerh, Khadije El Kadi, Sherien Elagroudy	Flow Simulation And Assessment Of A Salinity Gradient Solar Pond Development
16:20-16:40	1081	Michael K.H. Leung, Wei He, Hong Xiaoqi	Thermal Behaviour Of Trombe Wall With Venetian Blind In Summer And Transition Seasons
16:40-17:00	1111	Lu Li, Jie SUN, Lu Li, Ya-Ling He, Haojie Xu	Transient Response Characteristics Of Direct-Steam-Generation Parabolic-Trough Loop
17:00-17:20	521	Dan Liu, Tong Tai, Yurong He	Solar Heated Graphene-Melamine Foam For Absorbing Oil And Organic Solvents
17:20-17:40	1320	Tiantian Zhang, Hongxing Yang	Determination Of The Optimal Thickness Of Vertical Air Channels In Double-Skin Solar Façades
17:40-18:00	1115	Haojie Xu, Lu Li, Jie SUN, Ya-Ling He, Lu Li	Comparative Study On Transient Characteristics Of Parabolic-Trough Loop: Oil Vs. Salt

# Day 2

# Oral Presentations

Room: BC305

Session Name: Fuel cells V

Session Chair: Wenbin Hao, Xi Li

Time	Paper ID	Author	Paper Title
16:00-16:20	858	Guido Lorenzi, Marco Gorgoroni, Carlos Silva, Massimo Santarelli	Life Cycle Assessment Of Biogas Upgrading Via High-Temperature Electrolysis And Methanation
16:20-16:40	915	Vanja Subotic, Arianna Baldinelli, Linda Barelli, Robert Scharler, Christoph Hochenauer, Andres Anca-Couce	Optimization Of An Integrated Biomass Gasifier-Fuel Cell System: An Experimental Study On The Cell Response To Process Variations
16:40-17:00	970	Bin Chen	Integration Of Reversible Solid Oxide Cells With Methane Synthesis (Resoc-MS) In Grid Stabilization
17:00-17:20	991	Zunyan Hu, Liangfei Xu, Jianqiu Li, Xin Xu, Minggao Ouyang, ziyou Song, Xiaoli Du,	The Uniformity And Consistency Analysis Of A Fuel Cell Stack With Multipoint Voltage-Monitoring Method
17:20-17:40	1009	Pu He, Li Chen, Yu-Tong Mu, Wen-Quan Tao	Modeling Of The Effect Of Ionomer Volume Fraction On Water Management For Proton Exchange Membrane Fuel Cell
17:40-18:00	1030	Dengcheng Liu, Shixiang Xia, Benjamin Dutruel, Rui Lin	Application Of A 2-Phase Dummy Load Coupled To An Air Purge During The Shut-Down Process On A PEMFC Stack

Room: BC402

Session Name: Cogeneration and polygeneration

Session Chair: Qibin Liu, Ting Ma

Time	Paper ID	Author	Paper Title
16:00-16:20	680	Jingyun Liu, Wencan Zhou, Senqing Fan, Zeyi Xiao	Study Of The Co-Production Of Butanol And Hydrogen By Immobilizing Clostridium Acetobutylicum CICC8012
16:20-16:40	1178	Zhang Bai, Qibin Liu, Liang Gong, Jing Lei	Performances Evaluation Of A Mid-/Low-Temperature Solar Thermochemical System With Cooling, Heating And Power Production
16:40-17:00	1095	Yiji Lu	Study Of A Novel Hybrid Refrigeration System For Industrial Waste Heat Recovery
17:00-17:20	1071	Ivan Henderson Gue, Aristotle Ubando, Kathleen Aviso, Raymond Tan	Optimal Design Of A Trigeneration Plant Using Fuzzy Linear Programming With Global Sensitivity Analysis On Product Price Uncertainty
17:20-17:40	1240	Andrea Baccioli, Lorenzo Ferrari, Francesco Vizza, Umberto Desideri	Feasibility Analysis Of Coupling An ORC To A mGT In A Biogas Plant
17:40-18:00	1272	Yongyi Li, Guoqiang Zhang, Yujia Liu, Xiaowei Song, Yongping Yang	A Cold And Power Cogeneration System Utilizing LNG Cryogenic Energy And Low-Temperature Waste Heat

Room: BC404

Session Name: Future engines of high efficiency and low emissions III

Session Chair: Francesco Melino, Tomaž Katrašnik

Time	Paper ID	Author	Paper Title
16:00-16:20	777	Jianguo Du, Balaji Mohan, Jaeheon Sim, William L Roberts	Experimental Study On The Non-Reacting Spray Characterization Of Gasoline Compression Ignition Fuel
16:20-16:40	836	Dongdong Liu, Yanyan Chen, Wei Dai, Ercang Luo	Numerical Analysis Of Bi-Directional Impulse Turbine Performance For Thermoacoustic Power Generators
16:40-17:00	911	Simon Emhardt, Guohong Tian, John Chew	Heat Release Modelling Of A Range Extender Scroll Engine
17:00-17:20	987	Yuedong Chao, Haifeng Lu, Guangyu Dong, Jun Deng, Liguang Li	Abnormal Combustion Diagnosis And Combustion Period Based Phase Estimation With A Modified Form Tandem Ion Current Detection System On SI Gasoline Engines
17:20-17:40	1162	Dawei Wu	A Preliminary Experimental Study On A Lab-Scale Linear Joule Engine Prototype
17:40-18:00	165	Jing Li, Xiang Ling, Dezhi Zhou, Wenming Yang	Effects Of Effective Compression Ratio By Modifying IVC Timing And Stroke Length In A Reactivity-Controlled Compression Ignition Engine

Room: FJ302

Session Name: Energy economics, finance and investment II

Session Chair: Krishan Pandey, Cheng Cheng

Time	Paper ID	Author	Paper Title
16:00-16:20	1041	Lu-Tao Zhao, Guan-Rong Zeng, Shi-Qiu Guo	Analysis Of Timeliness Of Oil Price News Information Based On SVM
16:20-16:40	1246	Yinghui Ding, Shupe Huang, Yuhan Zhao	Is World Oil Market Globalized Or Regionalized? A Reinvestigation From Multi-Scale Systemic Spillovers Perspective
16:40-17:00	1316	Zhaohua Wang, Ru Huo, Bo Wang, Bin Zhang	Provincial Abatement Cost And Regional Differences In China Under The Constraint Of Reduction Targets
17:00-17:20	555	Georgios Pardalis, Brijesh Mainali, Krushna Mahapatra	One-Stop-Shop As An Innovation, And Construction Smes: A Swedish Perspective
17:20-17:40	1326	Yanyan Tang, Qi Zhang, Hailong Li, Yaoming Li, Boyu Liu	Economic Analysis On Repurposed EV Batteries In A Residential PV System Under Sharing Business Models

# Day 2

# Oral Presentations

**Room: FJ303**

**Session Name: Energy monitoring and evaluations I**

**Session Chair: Jürgen-Friedrich Hake, Victor Nian**

Time	Paper ID	Author	Paper Title
16:00-16:20	864	Marco Sorrentino, Marco Bruno, Alena Trifirò, Gianfranco Rizzo	A Novel Energy Efficiency Metric For Model-Based Fault Diagnosis Of Telecommunication Central Offices
16:20-16:40	906	Dagnija Blumberga	Cleaner Production Nodes In Fish Processing. Case Study In Latvia
16:40-17:00	957	Himanshu Dehra	Acoustic Filters For Sensors And Transducers
17:00-17:20	959	Jun Yuan	Evaluation Of Mitigation Strategies In Shipping Industry Using A Metamodel Based Method
17:20-17:40	795	Delin Fang, Siyuan Yang, Bin Chen	Inequality Of Air Pollution And Carbon Emission Embodied In Inter-Regional Transport
17:40-18:00	1207	Rina Haiges, Yaodong Wang, Atanu Ghoshray, Tony Roskilly	Unconventional Fuel Pathways For Decarbonizing The Electrical Power Generation In Malaysia By 2050

**Room: HJ203**

**Session Name: Energy planning III**

**Session Chair: Michele Zinzi, Yuejun Zhang**

Time	Paper ID	Author	Paper Title
16:00-16:20	4	Corentin Kuster, Jean-Laurent Hippolyte, Yacine Rezgui, Monjur Mourshed	A Simplified Geo-Cluster Definition For Energy System Planning In Europe
16:20-16:40	21	Jiayu Wang, Ke Wang	A Frontier Based Environmental I-O Model For Synergistic Reduction Effects Analysis Over Environmental Taxes In China
16:40-17:00	42	Stephen Jia Wang, Patrick Moriarty	Energy Savings From Smart Cities: A Critical Analysis
17:00-17:20	964	Ismael Matino, Stefano Dettori, Valentina Colla, Valentine Weber, Sahar Salame	Application Of Echo State Neural Networks To Forecast Blast Furnace Gas Production: Pave The Way To Off-Gas Optimized Management
17:20-17:40	49	Yinghui Wang	Numerical Simulation Of Thermal Performance Of Indoor Airflow In Heating Room
17:40-18:00	1342	Yajing Li, Saige Wang, Bin Chen	Driving Force Analysis Of The Consumption Of Water, Energy And Energy-Related Water In China Based On LMDI Method

**Room: HJ209**

**Session Name: Energy market, scenarios and forecasting, and energy security II**

**Session Chair: Xunpeng Shi, Koji Tokimatsu**

Time	Paper ID	Author	Paper Title
16:00-16:20	501	Zhe Li, Renjin Sun, Kangyin Dong, Keng H. Chung	Increasing Stringent Regional Environmental Regulations Impact Gasoline Demand In China
16:20-16:40	530	Lu-Tao Zhao, Shi-Qiu Guo, Yi Wang	Oil Market Risk Factor Identification Based On Text Mining Technology
16:40-17:00	626	Huan Wang, Wen-Ying Chen	Gaps Between Pre-2020 Climate Policies With NDC Goals And Long-Term Mitigation Targets: Analyses On Major Regions
17:00-17:20	144	Andrea Trianni, Enrico Cagno, Davide Accordini	A Review Of Energy Efficiency Measures Within Electric Motors Systems
17:20-17:40	672	Jimwell Soliman, Neil Stephen Lopez, Jose Bienvenido Manuel Biona	Assessing Sustainability Of Long-Term Energy Supply Using Desirability Functions
17:40-18:00	843	Harshit Vallecha, Prabha Bhola	Prioritization Of Challenges And Enablers Associated With Community Energy Projects In Indian Context

**Room: HJ210**

**Session Name: Energy monitoring and evaluations II**

**Session Chair: Qie Sun**

Time	Paper ID	Author	Paper Title
16:00-16:20	1233	Vincent Mazaauric, Nadia Maizi	From Centralized To Decentralized Power Systems: The Shift On Finitude Constraints
16:20-16:40	818	Tao Cao, Saige Wang, Bin Chen	Urban Energy-Water Nexus From A System Dynamics Perspective: A Case Study Of Beijing
16:40-17:00	277	Jiayi Luo, Hongwen He, Jiankun Peng, Bing Lu	Lithium-Ion Battery SOC Estimation Study Based On Cubature Kalman Filter
17:00-17:20	495	Anggoro Cahyo Fitrianto, Arif Darmawan, Koji Tokimatsu, Kunio Yoshikawa	Spatial Distribution Of Empty Fruit Bunch Production As Potential Electric Resource Using Remote Sensing Technique
17:20-17:40	988	Yanyi Sun, Yupeng Wu, Robin Wilson	Integrated Cdte PV Glazing Into Windows: Energy And Daylight Performance For Different Window-To-Wall Ratio
17:40-18:00	1122	Abby Francisco, John Taylor	Designing Community-Scale Energy Feedback



# Day 2

# Oral Presentations

Room: HJ304

Session Name: Thermal energy management I

Session Chair: Jingli Fan, Geoffrey Hammond

Time	Paper ID	Author	Paper Title
16:00-16:20	109	Vincent J.L. Gan, Min Deng, Yi Tan, Weiwei Chen, Jack Chen	BIM-Based Framework To Analyze The Effect Of Natural Ventilation On Thermal Comfort And Energy Performance In Buildings
16:20-16:40	181	Janie Ling-Chin	UK Policies And Industrial Stakeholder Perspectives On Building Thermal Performance
16:40-17:00	376	Xin Huang	Experimental Investigation And Optimization Of Total Energy Consumption In Humidification-Dehumidification System
17:00-17:20	566	Zuming Liu, Iftekhar Karimi	Simulation Of A Combined Cycle Gas Turbine Power Plant In Aspen HYSYS
17:20-17:40	737	Yang Luo, John Andresen, Henry Clarke, Matthew Rajendra, Mercedes Maroto-Valer	A Framework For Waste Heat Energy Recovery Within Data Centre
17:40-18:00	583	Joseph Lai, Mengxue Lu	Building Energy: A Review On Consumptions, Policies, Rating Schemes And Standards

Room: FJ304

Session Name: Electric energy storage III

Session Chair: Shouguang Yao, Shuang Gao

Time	Paper ID	Author	Paper Title
16:00-16:20	892	Guillaume Jeanmonod, ligang wang	Optimal Selection Of Design Points For Power-To-Methane System With Solid-Oxide Electrolyzer Swept By Oxygen
16:20-16:40	1038	Guodong Xu, Ce Shang, Songli Fan, Zhenchuan Ma, Haozhong Cheng	Sizing Battery Energy Storage System For Industrial Customers With Photovoltaic Power
16:40-17:00	1054	Yu Tang, ximing Cheng	Influences Of Structure Components On Thermal Distribution Of A Cylindrical Lithium-Ion Battery
17:00-17:20	1065	Dan Xu, Le Zhang, Bin Wang, Guangliang Ma	Estimation Of Supercapacitor Energy Based On Particle Swarm Optimization Algorithm For Its Equivalent Circuit Model
17:20-17:40	1085	Mei Zhou, Yuegu Wang	Ammonia As An Environmentally Benign Energy Carrier For The Fast Growth Of China
17:40-18:00	1168	Ilari Alaperä, Samuli Honkapuro, Ville Tikka, Janne Paananen	Dual-Purposing UPS Batteries For Energy Storage Functions: A Business Case Analysis

Room: QR512

Session Name: Thermal and mechanical energy storage technologies I

Session Chair: Danny Müller, Xin Cui

Time	Paper ID	Author	Paper Title
16:00-16:20	50	Ashmore Mawire, Katlego Lentswe	Dynamic Thermal Performance Of Four Encapsulated PCM Spheres For Domestic Medium Temperature Applications
16:20-16:40	53	Peng Xu, Sichuan Xu, Pengcheng Liu, Yuan Gao, Xingyu Liu	Investigation Of Heat Source Location On Solid-Liquid Phase Change Using Lattice Boltzmann Method
16:40-17:00	597	Karem Elfeky, N. Ahmed, Qiuwang Wang	Numerical Investigation Of The Melting Temperature Effect On The Performance Of Thermocline Thermal Energy Storage Tank For CSP
17:00-17:20	166	Zhaoyu He, Yijie Qian, Chao Xu, Lijun Yang, Xiaoze Du	Static And Dynamic Thermocline Evolution In The Water Thermocline Storage Tank
17:20-17:40	168	N.H. Steven Tay, Martin Belusko, Ming Liu, Frank Bruno	Experimental Validation Of High Temperature Tube-In-Tank PCM System Using E-NTU Technique
17:40-18:00	201	Daniel Mahon, Gianfranco Claudio, Philip Eames	A Study Of Novel High Performance And Energy Dense Zeolite Composite Materials For Domestic Interseasonal Thermochemical Energy Storage

Room: HJ303

Session Name: Gas hydrates III

Session Chair: Ju Dong Lee, Zhiming Xia

Time	Paper ID	Author	Paper Title
16:00-16:20	191	Lei Wang, Weiguo Liu, Yanghui Li, Peng Wu, Shi Shen	Mechanical Behaviors Of Methane Hydrate-Bearing Sediments Using Montmorillonite Clay
16:20-16:40	30	ZHIMING XIA, Xiao-Sen Li, Zhaoyang Chen, Yi Wang, Yu Zhang	Drilling Simulation In Hydrate-Bearing Sediment Using A Novel Hydrate Drilling Simulator
16:40-17:00	31	Qiu-Nan Lv	Seawater Desalination By Hydrate Formation And Pellet Production Process
17:00-17:20	32	Jing Cai, Xiao-Sen Li	Formation And Dissociation Behavior Studies Of Hydrogen Hydrate In The Presence Of Tetrahydrofuran By Using High Pressure DSC
17:20-17:40	174	Tingting Luo, Yanghui Li, Weiguo Liu, Yongchen Song	Experimental Studies On Gas Production Rate Of In-Situ Hydrate-Bearing Clay In Thermal Recovery And Depressurization Methods
17:40-18:00	1156	Gaurav Bhattacharjee, Vivek Barmecha, Nilesh Choudhary, Naval Pandey, Parivesh Chugh, Rajnish Kumar	Methane Hydrate Dissociation In The Presence Of Novel Benign Additives

# Day 2

# Oral Presentations

**Room: QR504**

**Session Name: Heat transfer enhancement, heat exchangers and heat pipe III**

**Session Chair: Massimiliano Renzi, Rebei Bel Fdhila**

Time	Paper ID	Author	Paper Title
16:00-16:20	496	Yuefen Gao, Tingting Gao, Zhao Liu	Study On The Heat Transfer Performance Of Boiling In Vertical Buried Tube Of Direct Expansion Ground Source Heat Pump
16:20-16:40	499	Zhoutuo Tan, Zhigang Guo, Jian Yang, Qiuwang Wang	Numerical Investigation Of Heat Transfer For Elliptical Tube In Granular Flow Using DEM
16:40-17:00	508	Dongling Wu, Ping Zhou, Chenn Zhou	Numerical Study On Pulverized Coal Combustion In A Raceway From The Viewpoint Of Coal Plume
17:00-17:20	550	Jundika Kurnia, Agus Sasmito	Latent Heat Thermal Capacitor In Heat Exchangers- A Computational Investigation
17:20-17:40	565	Abdul Raouf Tajik, Tariq Shamim, Ahmed Ghoniem, Rashid Abu Al-Rub	Optimization Of Aluminum Anode Baking Process Employing A Response Surface Methodology
17:40-18:00	1131	Xinting Wang, Zhichun Liu, Wei Liu	Multi-Objective Optimization Of Spirally Corrugated Tubes On Heat Transfer And Flow Performance Using CFD And Genetic Algorithm

**Room: QR514**

**Session Name: Geoenery II**

**Session Chair: Guozhi Liao, Zhang Bai**

Time	Paper ID	Author	Paper Title
16:00-16:20	969	Jieyun Jiang, ZHENHUA RUI, Randy Hazlett, Jun Lu	An Integrated Technical-Economic-Environmental Assessment Of CO2 Enhanced Oil Recovery Development
16:20-16:40	1032	Zhengxuan Liu, Zhun Yu, Tingting Yang, Shuishen Li, Mohamed El Mankibi, Letizia Roccamena, Di Qin, Guoqiang Zhang	Designing And Evaluating A New Earth-To-Air Heat Exchanger System In Hot Summer And Cold Winter Areas
16:40-17:00	1080	Fengshou Zhang, Zirui Yin, Shawn Maxwell	Repeated Fault Reactivation And Induced Seismicity During Multi-Stage Hydraulic Fracturing: A Case Study In Sichuan Basin, Southwestern China
17:00-17:20	1091	Yang Ning, Kaiyi Zhang, Shuai He, Tianluo Chen, Hongyan Wang, Guan Qin	Numerical Modeling Of Gas Transport In Shales To Estimate Rock And Fluid Properties Based On Multiscale Digital Rocks
17:20-17:40	1092	Chang Su, Hatem Madani, Björn Palm	Spatial Data Assisted Ground Source Heat Pump Potential Analysis In China, A Case Of Qingdao City
17:40-18:00	1280	Mingyan Liu, Xiuxiu Sun, Junchao Song, Yangshuhan Xu	Corrosion Of Carbon Steel With Phosphate Coatings In Simulated Hot-Dry-Rock Geothermal Water

**Room: BC304**

**Session Name: Geoenery III**

**Session Chair: Nobuo Maeda, Yuhe Wang**

Time	Paper ID	Author	Paper Title
16:00-16:20	309	Xu Jin, Jianming Li, Xiaoqi Wang, He Liu, Xiaodan Liu	Exploration Of The Microscopic Pore Structure Of Unconventional Energy Resource Using Electrodeposition
16:20-16:40	352	Nan Li, Guangjin Chen, Changyu Sun, Zhenfeng Sun	A Novel Method To Greatly Increase Methane Hydrate Exploitation Efficiency Via Forming Impermeable Overlying CO <sub>2</sub> Cap
16:40-17:00	392	Yang Li, Jianchun Guo, Shibin Wang	The Damage Mechanisms Of Fracturing Fluid On Production In Tight Gas Reservoirs
17:00-17:20	395	Yuhe Wang	Beyond Multiple-Porosity Modeling For The Simulation Of Complex Flow Mechanisms In Shale Reservoirs
17:20-17:40	446	Xuyang Guo, Li Du, Pengguang Sun, Jie Zhang, Xinlei Shi, Hongqing Song	An Integrated Approach To Sustainable Heat Recovery In A Sedimentary Geothermal Reservoir Considering Surface Energy Demands
17:40-18:00	1296	Xianzhi Song, Yu Shi, Gensheng Li, Gaosheng Wang, Rui Zheng, Jiacheng Li, Feixue YuLong	Numerical Investigation On Thermal Performance Of Multilateral-Well EGS With A Discrete Fracture Network Based On A Thermal-Hydraulic-Mechanical Coupling Model

**Panel Session: UniLab – DEM**

**Room: HJ305**

16:10-17:50	<b>Panel Session: UniLab – DEM Room: HJ305</b>		
18:00-22:00	<b>CONFERENCE BANQUET</b>		

# Day 3

# Oral Presentations

<b>Room: BC202</b> <b>Session Name: Biogas and Bioethanol I</b> <b>Session Chair: Adi Surjosatyo, Yen Wah Tong</b>			
Time	Paper ID	Author	Paper Title
08:40-09:00	1146	Sangjukta Devi, Niranjan Sahoo, P Muthukumar	Combustion Of Biogas In Porous Radiant Burner: Low Emission Combustion
09:00-09:20	1287	Zhiquan Wang, Yan Lin, Wei Zhang, Deyi Wu, Hainan Kong	Optimisation Of Enzymatic Saccharification Of Wheat Straw Pre-Treated With Sodium Hydroxide
09:20-09:40	1343	Jingjing Chen	Designing Heat Exchanger For Enhancing Heat Transfer Of Slurries In Biogas Plants
09:40-10:00	1367	Chaudhary Awais Salman	Identification Of Thermochemical Pathways For The Energy And Nutrient Recovery From Digested Sludge In Wastewater Treatment Plants
10:00-10:20	805	Evangelos Kalamaras, Jin Xuan, Mercedes Maroto-Valer, Huizhi Wang, John Andresen	Thermodynamic Analysis Of The Efficiency Of Photoelectrochemical CO <sub>2</sub> Reduction To Ethanol
<b>Room: FJ301</b> <b>Session Name: Biomass pyrolysis and gasification II</b> <b>Session Chair: Haitao Zhao</b>			
Time	Paper ID	Author	Paper Title
08:40-09:00	785	Adi Surjosatyo, Hafif Dafiqurrohman, Muhammad Barryl Angggriawan, Andika Akbar Hermawan	Comparison Between Secondary Thermal Cracking Methods And Venturi Scrubber Filtering In Order To Reduce Tar In Biomass Gasification
09:00-09:20	830	Alexander Mosqueda	Effect Of Hydrothermal And Washing Treatment Of Banana Leaves On Co-Gasification Reactivity Of Coal
09:20-09:40	884	David Antonio Buentello Montoya, Xiaolei Zhang, Simão Marques, Marco Geron	Investigation Of Competitive Tar Reforming Using Activated Char As A Catalyst
09:40-10:00	402	Haiyu Meng, Shuzhong Wang, Zhiqiang Wu, Jun Zhao, Lin Chen, Jiake Li	Thermochemical Behavior And Kinetic Analysis During Co-Pyrolysis Of Starch Biomass Model Compound And Lignite
<b>Room: BC305</b> <b>Session Name: Waste to energy conversion II</b> <b>Session Chair: Tamer Ismail, Yu Qin</b>			
Time	Paper ID	Author	Paper Title
08:40-09:00	525	Chun Lung Lui, Chung Leung Li, Kwan Ming Dao, Wai Hung Ho	From Waste To Energy - Development & Use Of Renewable Energy In Sewage Treatment Facilities
09:00-09:20	610	Yurong Yang, Shixue Wang, Wei He	Simulation Study On Regenerative Thermoelectric Generators For Dynamic Waste Heat Recovery
09:20-09:40	523	Baskoro Lokahita, Muhammad Aziz, Kurniawan Winarto, Fumitake Takahashi	Py-GC-MS Of Refuse Materials In Waste To Energy Point Of View
09:40-10:00	692	Ahmad Tawfieurrahman Yuliansyah	Hydrothermal Treatment Of Oil Palm Biomass In Batch And Semi-Flow Reactors
10:00-10:20	698	Sirawasith Ruksathamcharoen, Pimpet Pimpet	Effects Of Hydrothermal Treatment And Pelletizing Temperature On Physical Properties Of Empty Fruit Bunch Pellets
<b>Room: BC402</b> <b>Session Name: Wind Power I</b> <b>Session Chair: Dongran Song, Kanzumba Kusakana</b>			
Time	Paper ID	Author	Paper Title
08:40-09:00	1305	Vilas Warudkar, Vilas Warudkar, Siraj Ahmed	Effect Of Atmospheric Stability On The Wind Resource Extrapolating Models For Large Capacity Wind Turbines: A Comparative Analysis Of Power Law, Log Law, Deaves And Harris Model
09:00-09:20	380	Yi-Xin Peng, You-Lin Xu, Sheng Zhan	Variable Pitch To High-Solidity Straight-Bladed Vawts For Power Enhancement
09:20-09:40	642	Honglei Bai	Positive Interactions Of Two Savonius-Type Vertical-Axis Wind Turbines For Performance Improvement
09:40-10:00	290	Riyanto ., Nugroho Agung Pambudi, Rusdi Febriyanto, Kukuh Mukti Wibowo, Nova Dany Setyawan, Nyenyep Sri Wardani, Lip Huat Saw, Bayu Rudiyanto	The Performance Of Shrouded Wind Turbine At Low Wind Speed Condition
10:00-10:20	284	Zhaohua Liang, Lei Wang	Adaptive Structural Control Of Floating Wind Turbine With Application Of MR Damper

# Day 3

# Oral Presentations

Room: BC404

Session Name: Other renewable energy systems V

Session Chair: Umberto Desideri

Time	Paper ID	Author	Paper Title
08:40-09:00	1340	Pietro Elia Campana, Luca Cioccolanti, Baptiste François, Jakub Jurasz, Yang, Zhang, Bengt Stridh, Jinyue Yan	A Multi-Country Economic Analysis Of Lithium-Ion Batteries For Peak Shaving And Price Arbitrage In Commercial Buildings
09:00-09:20	14	Julio Barzola-Monteses, Mayken Espinoza-Andaluz	Performance Analysis Of Hybrid Solar/H2/Battery Renewable Energy System For Residential Electrification
09:20-09:40	116	Min Li, Gang Liu, Liwen Zhang	Estimation Of Thermal Properties Of The Ground And Backfilling Materials From Thermal Response Tests (Trts) Using Ground Heat Exchangers
09:40-10:00	156	Massimiliano Renzi, Mosè Rossi	A Generalized Theoretical Methodology To Forecast Flow Coefficient, Head Coefficient And Efficiency Of Pumps-As-Turbines (Pats)
10:00-10:20	849	Jie Jia, W.L. Lee, Yuanda Cheng	Constant-Temperature Thermal Response Test (TRT) With Both Heat Injection And Extraction For Ground Source Heat Pump Systems: Methodology And A Case Study

Room: FJ302

Session Name: Hydrogen energy II

Session Chair: Meng Ni, Trevor Kwan

Time	Paper ID	Author	Paper Title
08:40-09:00	464	Diederik Coppitters, Ward De Paepe, Francesco Contino	Techno-Economic Uncertainty Quantification And Robust Design Optimization Of A Directly Coupled Photovoltaic-Electrolyzer System
09:00-09:20	509	Chao Wang, Mingzheng Liao	Efficient Hydrogen Production From Partial Oxidation Of Propane Over Sic Doped Ni/Al <sub>2</sub> O <sub>3</sub> Catalyst
09:20-09:40	686	Jinsheng Xiao, Xin Zhou, Pierre Bénard, Tianqi Yang, Richard Chahine	Estimation Of Filling Time For Compressed Hydrogen Refueling
09:40-10:00	687	Muhammad W. Ajiwibowo, Arif Darmawan, Muhammad Huda, Adi Surjosatyo, Muhammad Aziz	Integrated Power-To-Gas And Power Generation System Through Chemical Looping Combustion: A Conceptual Design
10:00-10:20	899	Francesco Romagnoli, Maksims Feofilovs, Armands Gravelins, Andrea Jonathan Pagano	Increasing Resilience Of The Natural Gas System With Implementation Of Biomethane In The Context Of Latvia: A System Dynamics Model

Room: FJ303

Session Name: Next generation advanced gas turbine cycle I

Session Chair: Min Chen

Time	Paper ID	Author	Paper Title
08:40-09:00	282	Zihao Jia, Min Chen, Hailong Tang	Research on Integrated Design of Multi-variable Combination Adjusting Laws of Inlet/TBCC Engine
09:00-09:20	285	Xin MENG, Zhili ZHU, Min Chen	Performance Optimization of Adaptive Cycle Engine during Subsonic Climb
09:20-09:40	332	Yihao Xu, Hailong Tang, Min Chen	Measurement Parameter Selection on Adaptive Cycle Engine Gas Path Fault Diagnosis
09:40-10:00	399	Junchao Zheng, Hailong Tang, Min Chen	Optimal Matching Control Schedule Research On an Energy System
10:00-10:20	484	Siyuan Xu, Xin Meng	Research on the Starting Characteristic and Control Law of Two Spool Turbofan Engine

Room: HJ203

Session Name: Smart grid - demand response, power dispatch II

Session Chair: Jianzhong Wu, Bin Ye

Time	Paper ID	Author	Paper Title
08:40-09:00	500	Peng Li, Hongzhi Su, Li Yu, Zhelin Liu, Chengshan Wang, Jianzhong Wu	Voltage Control Method of Distribution Networks Using PMU Based Sensitivity Estimation
09:00-09:20	650	Jiawei Wang, Shi You, Yi Zong, Chresten Træholt, You Zhou, Shujun Mu	Optimal dispatch of combined heat and power plant in integrated energy system: A state of the art review and case study of Copenhagen
09:20-09:40	707	Xue Tan, YAN-MING Jin, Nan Li, Shi Lei, Zhou Kai	Methodology System for Comprehensive Benefit Evaluation of Transcontinental Grid
09:40-10:00	803	Yanli Liu, Liangchen Deng, Ning Gao, Xu Sun	A Reliability Assessment Method of Cyber Physical Distribution System
10:00-10:20	811	Afshin Afshari, Shahzad Muzaffar	Short-Term Load Forecasts Using LSTM Networks

# Day 3

# Oral Presentations

Room: HJ209

Session Name: Energy conservation in buildings III

Session Chair: Yi Zong, Yongjun Sun

Time	Paper ID	Author	Paper Title
08:40-09:00	1271	Yaodong Wang	Investigating The Impact Of Building's Facade On The Building's Energy Performance – A Case Study
09:00-09:20	603	Jiale Chai, Pei Huang, Yongjun Sun	Life-Cycle Analysis Of Nearly Zero Energy Buildings Under Uncertainty And Degradation Impacts For Performance Improvements
09:20-09:40	850	Ning Mao, Mengjie Song, Borui Cui	Comparative Analysis Of Energy Consumption Of A Bedroom TAC System Applied In Different Climate Zones Of China
09:40-10:00	1238	John Kaiser Calautit, Dominic O'connor, Sally Salome Shahzad, Katrina Calautit, Ben Richard Hughes	Numerical And Experimental Analysis Of A Natural Ventilation Windcatcher With Passive Heat Recovery For Mild-Cold Climates
10:00-10:20	1357	Yabo Wang, Zhuo Cui, Kai Zhu, Xueqiang Li	Evaluation of Water Cooling Heat Sink Performance and Dynamic flow effect

Room: HJ210

Session Name: Electric vehicles III

Session Chair: Clemente Capasso, Lijun Zhang

Time	Paper ID	Author	Paper Title
08:40-09:00	55	Xiaopeng Tang, Ke Yao, Changfu Zou, Boyang Liu, Furong Gao	Predicting Battery Aging Trajectory Via A Migrated Aging Model And Bayesian Monte Carlo Method
09:00-09:20	104	Zhenpo Wang, Jin Zhang, Peng Liu, Changhui Qu, Xiaoyu Li	Driving Cycle Construction For Electric Vehicles Based On Markov Chain And Monte Carlo Method: A Case Study In Beijing
09:20-09:40	107	Jingwen Wei, Guangzhong Dong, Chen Zonghai	Model-Based Fault Diagnosis Of Lithium-Ion Battery Using Strong Tracking Extended Kalman Filter
09:40-10:00	339	Yiguang Chen, Zhenmao Bao, Chenghan Lin, Xiaobin Zhao	Fault-Tolerant SVPWM Control Strategy For Five-Phase PMSM Under Single-Phase Open-Circuit Fault
10:00-10:20	367	Mingbiao Chen, Fanfei Bai, Shili Lin, Wenji Song, Yang Li, Ziping Feng	Thermal Performance Of Battery Module Based On Multilayer Electro-Thermal Coupling Model

Room: HJ304

Session Name: Thermal energy management II

Session Chair: Gaosheng Wei, Jia Yin Sze

Time	Paper ID	Author	Paper Title
08:40-09:00	634	Fanfei Bai, Mingbiao Chen, Wenji Song, Yang Li, Ziping Feng, Yongliang Li	Thermal Performance Of Pouch Lithium-Ion Battery Module Cooled By Phase Change Materials
09:00-09:20	182	Janie Ling-Chin	Moving Towards Low-Carbon Manufacturing In The UK Automotive Industry
09:20-09:40	766	Xiaofang Shan	Dynamic Performance Of Indoor Environment And Energy Consumption Under Intermittent Mode Of Air Conditioning System
09:40-10:00	868	Paul Griffin, Geoffrey Hammond	Analysis Of The Potential For Energy Demand And Carbon Emissions Reduction In The Iron And Steel Sector
10:00-10:20	916	Hosein Kalantari, Ali Ghoreishi	Study Of Mine Exhaust Heat Recovery System With Coupled Heat Exchangers

Room: FJ304

Session Name: Cryogenic and Cold Energy Storage and Utilization I

Session Chair: Alessandro Romagnoli, Qiqiang Li

Time	Paper ID	Author	Paper Title
08:40-09:00	1192	Xipeng Lin, Liang Wang, Ningning Xie, Shuqian Li, Haisheng Chen	Thermodynamic Analysis Of The Cascaded Packed Bed Cryogenic Storage Based Supercritical Air Energy Storage System
09:00-09:20	86	Lars Hüttermann, Roland Span, Pascal Maas, Viktor Scherer	Investigation Of A Liquid Air Energy Storage (LAES) System With Different Cryogenic Heat Storage Devices
09:20-09:40	96	Li Xiaowei, Shunmin Zhu	A High-Efficiency Free-Piston Stirling Cooler With 350 W Cooling Capacity At 80 K
09:40-10:00	207	Yaokang Zhang, Lin Su, Kaijun Dong, Tengqing Liu	Experimental Study Of Ice Slurry Production System Using Direct Contact Heat Transfer Of RC318 And Water In A Horizontal Pipe
10:00-10:20	61	Bing-Chuan Han, Bing-Chuan Han	Thermodynamic Analysis Of A Novel Ammonia-Water Power/Cooling Combined System With Adjustable Refrigeration-To-Power Ratio

# Day 3

# Oral Presentations

Room: BC203

Session Name: Pollutant control and waste treatment II

Session Chair: Chi-Hwa Wang, Siming You

Time	Paper ID	Author	Paper Title
08:40-09:00	149	Xuekun Shan, Hao Peng, Xiang Ling, Juan Li	Experimental Investigation On Particles Characteristics In Molten Aluminum Ligament Granulation For Waste Energy Recovery
09:00-09:20	221	Rokhsareh Akbarzadeh, Tien-Chien Jen, Anvar Asadi, Peter Ozaveshe Oviroha	Titanate Based Photocatalysts For Climate-Efficient Water Treatment
09:20-09:40	222	Anvar Asadi, Rokhsareh Akbarzadeh, Tien-Chien Jen, Akbarz Eslami, Peter Ozaveshe Oviroha	Effect Of Synthesis Method On NS-TiO <sub>2</sub> Photocatalytic Performance
09:40-10:00	671	Xian Li, Xiang Kan, Xiangyu Sun, Yao Zhao, Tianshu Ge, Yanjun Dai, Chi-Hwa Wang,	Performance Analysis Of A Biomass Gasification Based CCHP System With Variable-Effect Libr-H <sub>2</sub> O Absorption Cooling And Desiccant Dehumidification
10:00-10:20	683	Liwei Ma, Shuzhong Wang, Jun Zhao, Xi Zhang, Zhongqing Zhang, Zefeng Jing, Haiyu Meng	Numerical Simulation Of Liquid Slag Flow In Liquid Slag Storage Device From Energy Saving Of Steel Industry

Room: BC301

Session Name: Micro- and nano-technologies II

Session Chair: Lichao Jia, Michael K.H. Leung

Time	Paper ID	Author	Paper Title
08:40-09:00	206	Xiao-Ying Lu, Shifeng Wang	Hydrothermal Synthesis Of Mesoporous Co <sub>3</sub> O <sub>4</sub> Nanorods As High Capacity Anode Materials For Lithium Ion Batteries
09:00-09:20	1183	Zan Wu, Zhen Cao, Anh Duc Pham, Bengt Sunden	Nucleate Pool Boiling Heat Transfer Of Acetone And HFE7200 On Copper Surfaces With Nanoparticle Coatings
09:20-09:40	606	Jianqiao Ding, Yufeng Su, Kun Zhang	Structure Analysis And Output Performance Of Vibration Energy Harvester Based On Diamagnetic Levitation
09:40-10:00	670	Yi'ang Li	A Study On Thermophysical Property Of MEPCM/Grapheme Hybrid Suspension
10:00-10:20	797	Menggang Wen, Yun Li, Jingya Feng	Experimental Study On Dynamic Contact Angle Of Liquid-Liquid Displacement In Microscale Capillaries

Room: BC302

Session Name: Thermodynamic analysis II

Session Chair: Ward De Paepe, Qibin Liu

Time	Paper ID	Author	Paper Title
08:40-09:00	444	Dongpeng Zhao, Shuai Deng, Yawei Shao, Li Zhao, Pei Lu, Wen Su	A New Energy Analysis Model Of Seawater Desalination Based On Thermodynamics
09:00-09:20	541	Fen Lai, Xiangyuan Zhu, Guojun Li, Liping Zhu, Fengming Wang	Numerical Research On The Energy Loss Of A Single-Stage Centrifugal Pump With Different Vaned Diffuser Outlet Diameters
09:20-09:40	1125	Jin Li, Enshen Long, Fei Liang, Hang Zou, Ning Mao	Experimental Study On Dynamic Heat Release Performance Of Water Tank With Phase Change Materials
09:40-10:00	574	Jiaxu Wang, Xuefeng Liu, Shu Li	Research On Quantitative Relationship Between Fire Separations And Ampacity In Underground Pipe Gallery Electric Cabin
10:00-10:20	624	Chen Yue, Wang Pengen	Thermal Analysis On Vehicle Energy Supplying System Based On Waste Heat Recovery ORC

Room: BC303

Session Name: Transactive energy system for integrating distributed energy resources II

Session Chair: Can Wan, Zhenyuan Zhang

Time	Paper ID	Author	Paper Title
08:40-09:00	1171	Jie Shi	Generation Scheduling Optimization Of Wind-Energy Storage Generation System Based On Feature Extraction And MPC
09:00-09:20	1260	Zhenyuan Zhang, Haoyue Tang, Qi Huang	Risk Implemented Simultaneous Game-Theoretic Approach For Energy Trading In Residential Microgrids
09:20-09:40	1276	Shiqi Guo, Yunfei Mu, Hongjie Jia	Optimization Of AC / DC Hybrid Distributed Energy System With Power Electronic Transformer
09:40-10:00	1284	Shuang Gao, Chunhua Liu, Baotong Yang, Hongjie Jia	Coordinated Optimal Dispatch Of Photovoltaic Units With Updated Power Electronic Transformer
10:00-10:20	1323	David Zhang	Application Of Blockchain Technology In Converting Rural Wastes To Clean Energy In Developing Nations: A Case Study On Yitong System

# Day 3

# Oral Presentations

Room: BC304

Session Name: Electric vehicles IV

Session Chair: Siqi Bu, Hongwen He

Time	Paper ID	Author	Paper Title
08:40-09:00	371	Yang Li, Mingbiao Chen, Fanfei Bai, Wenji Song, Ziping Feng	Thermal Equilibrium Characteristic Of Large-Size Lithium-Ion Pouch Battery: Resting Time Between Charge And Discharge
09:00-09:20	404	Yiguang Chen, Chenghan Lin, Zhenmao Bao, Xiaobin Zhao	Modified Super-Twisting Algorithm With An Anti-Windup Coefficient Adopted In PMSM Speed Loop Control
09:20-09:40	406	Kunqi Ma, Zaizhou Wang, Hai Liu, Hanzhengnan Yu, Changyin Wei	Numerical Investigation On Fuzzy Logic Control Energy Management Strategy Of Parallel Hybrid Electric Vehicle
09:40-10:00	453	Jinquan Guo, Jiankun Peng, Hongwen He	Real-Time Energy Management For Plug-In Hybrid Electric Vehicle Based On Economy Driving System Pro
10:00-10:20	562	Bernard, Lip Huat Saw, Wen Tong Chong, Chin tsan Wang, Ming Chian Yew, Ming Kun Yew, Hiew Mun Poon	Numerical Modeling Of Hybrid Supercapacitor Battery Energy Storage System For Electric Vehicles

**Panel Session: Clean Combustion of Solid Fuels**

Room: HJ303

08:40-10:20

10:20-10:40

**TEA/COFFEE BREAK**

Room: BC202

Session Name: Biomass combustion II

Session Chair: Kunio Yoshikawa, Liang Wang

Time	Paper ID	Author	Paper Title
10:40-11:00	294	Hongpeng Xu, Anqi Zhou, Wenming Yang, Zhao Feiyang, Yaojie Tu	Numerical investigation the effect of air supply on the biomass combustion in the grate boiler
11:00-11:20	356	Yuxin Yan, Cheng Heng Pang, Tao Wu, Edward Lester, Luyao Tang, Yang Meng, Yuexi Fang,	The Kinetics Studies and Thermal Characterisation of Biomass
11:20-11:40	361	Yu Wenbin, Feiyang Zhao, Wenming Yang	Predictive control of CO <sub>2</sub> emissions from a grate boiler based on fuel nature structures using intelligent neural network and Box-Behnken design
11:40-12:00	483	Tamer Ismail, Kunio Yoshikawa, Hisham Sherif, Mohamed Abd El-Salam	Mathematical Modeling of Hydrothermal Treatment of MSW to form a Solid Fuel in a Commercial Scale Plant
12:00-12:20	28	Yueh-Heng Li, Tzu-No Hsu, Wendwaoga Florent Davy Sawadogo	Micro Combined Heat and Power System with Combustion-driven Thermophotovoltaic Power System and Stirling Engine

Room: FJ301

Session Name: Biomass pyrolysis and gasification III

Session Chair: Kentaro Umeki

Time	Paper ID	Author	Paper Title
10:40-11:00	407	Riyang Shu	Hydrogenolysis Of Dealkaline Lignin Catalyzed By Noble Metal Cooperated With Metal Chloride
11:00-11:20	430	Yano Surya Pradana, Daniyanto Daniyanto, Muhamad Hartono, Laras Prasakti, Arief Budiman	Effect Of Calcium And Magnesium Catalyst On Pyrolysis Kinetic Of Indonesian Sugarcane Bagasse For Biofuel Production
11:20-11:40	532	Xin Dai, Kunio Yoshikawa, Sarut Theppitak	Pelletization Of Carbonized Wood Using Organic Binders With Biomass Gasification Residue As Additive
11:40-12:00	450	Yingqi Zhao, Qian Huang, Shuiqing Li	Mechanisms On The Fouling Mitigation From Active Control Of The Surface Property Of Heat Transfer Tube
12:00-12:20	142	Baptiste Colin	Prediction Of Higher Heating Values (Hhvs) And Energy Yield During Torrefaction Via Kinetics

# Day 3

# Oral Presentations

Room: BC305

Session Name: Waste to energy conversion III

Session Chair: Ramesh Bansal, Sheng Li

Time	Paper ID	Author	Paper Title
10:40-11:00	724	Ahmad Muzammil Bin Idris, Wai Shin Ho	Product-Energy Cascade Analysis (PENCA) For Integrated Product And Energy System Optimization
11:00-11:20	759	Yi Li, Dawei Wu	Pressure Drop Study On An Organic Rankine System Utilizing LNG Cryogenic Energy And Waste Heat
11:20-11:40	1322	Yi Chen, Huaxia Yan	Development And Optimization Of A Novel Controller For Regenerative Indirect Evaporative Cooler
11:40-12:00	770	Chi Hun An, Arunkumar Chandrasekhar Chandrasekhar, Gaurav Khandelwal, Woo Joong Kim, Jeyong Yeon, Sang Jae Kim	Efficient Blue Energy Harvesting Triboelectric Nanogenerator As Smart Buoy
12:00-12:20	786	Anand Ramanathan, Santhoshkumar A.	Feasibility Analysis Of Pyrolysis Waste Engine Oil In CRDI Diesel Engine

Room: BC402

Session Name: Wind power II

Session Chair: Xiaoxia Gao, Honglei Bai

Time	Paper ID	Author	Paper Title
10:40-11:00	648	Honglei Bai, Kai Ming Li	Performance-Based Optimizations On Savonius-Type Vertical-Axis Wind Turbines Using Genetic Algorithm
11:00-11:20	160	Haiying Sun, Hongxing Yang	Comparative Study On A Newly-Developed Three-Dimensional Wind Turbine Wake Model
11:20-11:40	1051	Xiong Liu, Cheng Lu, Shi Liang, Ajit Godbole, Yan Chen	Improved Dynamic Stall Prediction Of Wind Turbine Airfoils
11:40-12:00	1105	Xiaoxia Gao, Lu Xia, Yonghua Li, Xiaoxun Zhu, Wei Fan, Qinaiqian Yin	Performances Of Different Wake Models In Wind Farm Layout Optimization
12:00-12:20	1235	Isam Janajreh Janajerh, Khadije El Kadi, Jabir Parakkal, Ameen El-Sinawi	Numerical Analysis Of VAWT Wind Turbines: Joukowski Vs Classical NACA Rotor's Blades

Room: BC404

Session Name: Other renewable energy systems VI

Session Chair: Haitao Zhao

Time	Paper ID	Author	Paper Title
10:40-11:00	875	Xiaojiao Luo, Jin Xuan, Mercedes Maroto-Valer, Eva Sanchez Fernandez	Modeling And Simulation For Photoelectrochemical CO <sub>2</sub> Utilization
11:00-11:20	1097	Steven Lim, Danny Chin Wei-Kit, Pang Yean Ling, Leong Loong Kong, Lim Chun Hsion	Investigation Of Organosolv Pretreatment To Natural Microbial-Degraded Empty Fruit Bunch For Sugar Based Substrate Recovery
11:20-11:40	703	Xi Zhang, Shuzhong Wang, Jun Zhao, Liwei Ma, Pengfei Yu, Zhiqiang Wu, Haiyu Meng	Energy Saving From Furnace Slag: Study On Centrifugal Granulation Characteristics Of The Rotating Cup
11:40-12:00	568	Chi-Hyeon Lee	A Conducting Polymer Coated Perovskite Supported On Glass Fiber Substrate For Gas-Phase CO <sub>2</sub> Conversion To Methane
12:00-12:20	1341	Mobyen Uddin Ahmed, Peter Andersson, Tim Andersson, Elena Tomás-Aparicio, Hampus Baaz, Shaibal Barua, Albert Bergström, Daniel Bengtsson, Jan Skvaril, Jesus Zambrano	Real-Time Biomass Characterization In Energy Conversion Processes Using Near Infrared Spectroscopy - A Machine Learning Approach

Room: FJ302

Session Name: Large scale power generation systems including new advanced cycles

Session Chair: Peng Xue, Zhang Bai

Time	Paper ID	Author	Paper Title
10:40-11:00	13	Rui Long, Zhengfei Kuang, Baode Li, Zhichun Liu, Wei Liu	Exergy Analysis And Performance Optimization Of Kalina Cycle System 11 (KCS-11) For Low Grade Waste Heat Recovery
11:00-11:20	120	Enhui Sun, Jinliang Xu, Han Hu, Bingguo Zhu, Jian Xie, Yawen Zheng	Analysis Of A Coal-Fired Power System Integrated With A Reheat S-CO <sub>2</sub> Cycle
11:20-11:40	612	Jia-Qi Guo, Ming-Jia Li, Jinliang Xu	Performance Comparison Of SPT Systems Integrated With Various Supercritical CO <sub>2</sub> -Based Mixture Brayton Cycles Based On Multi-Objective Optimization
11:40-12:00	674	Yanlei Xiang, Lei Cai, Yanwen Guan, Wenbin Liu, Yixiao Han, Ying Liang	Study On The Integrated System Of LNG Oxy-Fuel Power Plant And The Application Of Supercritical CO <sub>2</sub>
12:00-12:20	772	Tuantuan Xin, Cheng Xu, Wenyi Liu, Gang Xu, Yongping Yang	Thermodynamic Analysis Of A Novel Oxy-Combustion Supercritical Carbon Dioxide Power Cycle Integrating Solar-Driven Coal Gasification



# Day 3

# Oral Presentations

Room: FJ303

Session Name: ORC II

Session Chair: Steven Lecompte, Yiji Lu

Time	Paper ID	Author	Paper Title
10:40-11:00	45	Xiaochen Hou, Hongguang Zhang	Performance Study On Free Piston Expander-Linear Generator For Small Scale Organic Rankine Cycle
11:00-11:20	278	Weicong Xu, Shuai Deng, Yue Zhang, Dongpeng Zhao, Li Zhao	How To Give Full Play To The Advantages Of Zeotropic Working Fluids In Organic Rankine Cycle (Orc)
11:20-11:40	283	Manuel Jimenez-Arreola, Christoph Wieland, Alessandro Romagnoli	Dynamic Response Comparison Of Direct And Indirect Evaporation Options In Orc Systems For Waste Heat Recovery
11:40-12:00	1300	Maria Anna Chatzopoulou, Steven Lecompte, Michel De Paepe, Christos Markides	Off-Design Operation Of Orc Engines With Different Heat Exchanger Architectures In Waste Heat Recovery Applications
12:00-12:20	289	Cheng Zhang, Qibin Li, Chao Liu	Multi-Factor Evaluation Method For The Assessment Of Trans-Critical Organic Rankine Cycle With Low Gwp Fluids

Room: HJ203

Session Name: Smart grid - demand response, power dispatch III

Session Chair: Yunfei Mu, Di Chen

Time	Paper ID	Author	Paper Title
10:40-11:00	920	Piyush Chaubey, Jagdip Singh Lather, Srinivas Yeliseti, Sandeep Manda, Nitish Kumar Yadav	Robust Power System Stabilizer Based On Static Output Feedback Approach To Enhance Power System Stability
11:00-11:20	1267	Yue Zhou, meng Cheng, Jianzhong Wu, Chao Long	Decentralized Control Of Industrial Heating Loads For Providing Multiple Levels And Types Of Primary Frequency Control Service
11:20-11:40	1330	Zili Yin, Gonglin Zhang, Lin Li, Lijia Du, Wanqing Chen, Shiqi Guo	Risk Assessment Of Power System Based On A Three Level Capability From Active Distribution Network
11:40-12:00	189	Wei Lin, Xiaolong Jin, Yunfei Mu, Hongjie Jia, Xiaodan Yu, Tianjiao Pu, Naishi Chen,	Game-Theory Based Trading Analysis Between Distribution Network Operator And Multi-Microgrids
12:00-12:20	366	Rui Jing	A Hierarchical And Multi-Objective Approach For District-Level Urban Energy Network Optimal Planning Considering Uncertainties

Room: HJ209

Session Name: Energy conservation in buildings IV

Session Chair: Ward De Paepe, Leif Gustavsson

Time	Paper ID	Author	Paper Title
10:40-11:00	1039	Michele Zinzi	Thermo-Chromic Glazing In Buildings: A Novel Methodological Framework For A Multi-Objective Performance Evaluation
11:00-11:20	1104	Ronghui Qi, Jinghui Zhi, Li-Zhi Zhang	Wetting Improvement Of Plastic Working Plate For Liquid Desiccant Dehumidification Systems
11:20-11:40	1148	Runqi Liang, Yanyi Sun, Yupeng Wu, Robin Wilson	Cooperative Performance Of Potential Developed Thermochromic Glazing Under Difference Climates
11:40-12:00	1175	Jing Du, Yudong Xia, Shiming Deng	Energy Saving And Thermal Comfort Performances Using Radiation-Based Task/Ambient Air Conditioning (R-TAC) Systems In Sleeping Environments
12:00-12:20	1234	Sally Salome Shahzad, Hom B. Rijal	Preferred Vs Neutral Temperatures And Their Implications On Thermal Comfort And Energy Use: Workplaces In Japan, Norway And The UK

Room: HJ210

Session Name: Distributed energy systems I

Session Chair: Sven Eggimann, Peng Li

Time	Paper ID	Author	Paper Title
10:40-11:00	643	Yuehao Zhao, Ke Peng, Yuquan Liu, Yu Han	Applied Engineering Programs Of Energy Blockchain In US
11:00-11:20	756	Hector Bastida, Carlos E. Ugalde-Loo, Muditha Abeysekera, Meysam Qadrdan, Jianzhong Wu, Nicholas Jenkins	Dynamic Modelling And Control Of Thermal Energy Storage
11:20-11:40	513	Xiaonan Wang, Wentao Yang, Miao Guo, Koen H. van Dam	Blockchain-Based Smart Contract For Energy Demand Management
11:40-12:00	879	Naveed Arshad, Huzaifa Rauf, Muhammad Shuzub Gull	Integrating Floating Solar PV With Hydroelectric Power Plant: Analysis Of Ghazi Barotha Reservoir In Pakistan
12:00-12:20	1063	Siamak Sheykhha, Seyed Omid Sobhani, Mohammad Reza Azimi, Reinhard Madlener	Two-Level Distributed Demand-Side Management Using The Smart Energy Hub Concept

# Day 3

# Oral Presentations

Room: HJ304

Session Name: Thermal energy management III

Session Chair: Geoffrey Hammond, Bin Ye

Time	Paper ID	Author	Paper Title
10:40-11:00	936	Hongxun Hui, Yi Ding, Shihai Yang	Modeling And Analysis Of Inverter Air Conditioners For Primary Frequency Control Considering Signal Delays And Detection Errors
11:00-11:20	1120	Wangying Shi, Hao Meng, Min-Fang Han	Energy Management Of Solid Oxide Fuel Cell-CHP System With Performance Degradation Model
11:20-11:40	1132	Hongli Gao	Effect Of Characteristic Parameters On The Magnetic Properties Of Voice Coil Motor For Direct Fuel Injection In Gasoline Engine
11:40-12:00	1232	Uniben Tettey, Ambrose Doodoo, Leif Gustavsson	Carbon Balances For A Low Energy Apartment Building With Different Structural Frame Materials
12:00-12:20	67	Narameth Nananukul, Galih Pambudi	Wind Turbine Site Selection In Indonesia, Based On A Hierarchical Dual Data Envelopment Analysis Model

Room: FJ304

Session Name: Cryogenic and Cold Energy Storage and Utilization II

Session Chair: Alessandro Romagnoli, Ilari Alaperä

Time	Paper ID	Author	Paper Title
10:40-11:00	902	Chunping Xie, Yongliang Li, Yulong Ding, Jonathan Radcliffe	Evaluating Levelized Cost Of Storage (LCOS) Based On Price Arbitrage Operations: With Liquid Air Energy Storage (LAES) As An Example
11:00-11:20	958	Xiaohui She, Xiaodong Peng, Yulong Ding, Tongtong Zhang, Lin Cong	Preliminary Study Of Liquid Air Energy Storage Integrated With LNG Cold Recovery
11:20-11:40	1094	Agus Sasmito, Mahmoud Alzoubi, Ferri Hassani, Ali Ghoreishi	Freezing On Demand (FoD): An Energy Saving Technique For Artificial Ground Freezing
11:40-12:00	1128	Wei Lu	Investigation On Ternary Salt-Water Solutions As Phase Change Materials For Cold Storage
12:00-12:20	1136	Stefano Mazzoni, Sean Ooi, Alessio Tafone, Emiliano Borri, Gabriele Comodi, Alessandro Romagnoli	Liquid Air Energy Storage As A Polygeneration System To Solve The Unit Commitment And Economic Dispatch Problems In Micro-Grids Applications

Room: BC203

Session Name: Gas hydrates IV

Session Chair: Praveen Linga, Yi Wang

Time	Paper ID	Author	Paper Title
10:40-11:00	358	Binbin Ge, Yi-Yu Lu, Dongliang Zhong	Influence Of Water Saturation And Particle Size On Methane Hydrate Formation And Dissociation In A Fixed Bed Of Silica Sand
11:00-11:20	363	Hang Zhou, Pengfei Wang, Mingjun Yang, Shima Ma, Yongchen Song, Weixin Pang	Hydrate-Based Co <sub>2</sub> Capture From Flue Gas In Constant Flow Process With The Presence Of Tbab And Thf
11:20-11:40	383	Shima Ma, Jia-Nan Zheng, Qingping Li, Xin Lv, Mingjun Yang, Yongchen Song	DSC Measurement On Formation And Dissociation Process Of Methane Hydrate In Shallow Sediments From South China Sea
11:40-12:00	401	Ronghui Sun	In-Situ Observation Of Mh Formation/Decomposition In Unconsolidated Sands Recovered From The South China Sea
12:00-12:20	903	Yi Wang, Jing-Chun Feng, Xiao-Sen Li	Experimental Investigation Of Influence Of Well Spacing On Hydrate Dissociation By Heat Stimulation In Sandy Sediment

Room: BC301

Session Name: New materials for energy use I

Session Chair: Christian Knoll

Time	Paper ID	Author	Paper Title
10:40-11:00	62	Wen Ying Li, Lan Yi	Separation Of Phenolic Compounds From Coal Liquefaction Oil By Choline Chloride-Glycerol Deep Eutectic Solvents
11:00-11:20	229	Zhou Sunxi, Xuelai Zhang	Performance Study On Expand Graphite/Organic Composite Phase Change Material For Cold Thermal Energy Storage
11:20-11:40	288	Bing-Chuan Han, Yi-Huan Huang	Effect Of Anisotropic Thermal Conductivity On Thermal Control Performance Of Form-Stable Phase Change Material
11:40-12:00	502	Suimin Li	An Organic/Inorganic Eutectic Phase Change Material With High Latent Heat Based On Magnesium Hexahydrate Nitrate
12:00-12:20	569	Yaxuan Xiong, Zhenyu Wang, Peng Xu, Chen Hongbing, Yuting Wu	Experimental Investigation Into The Thermos-Physical Properties By Dispersing Nanoparticles To The Nitrates

# Day 3

# Oral Presentations

Room: BC302

Session Name: Thermodynamic analysis III

Session Chair: Roland Span

Time	Paper ID	Author	Paper Title
10:40-11:00	242	Chaoyang Wang, Yongliang Zhao, Zhu Wang, Ming Liu, Junjie Yan	Irreversibility Analysis Of A Recuperative Heater During Undergoing The Flow Rate Impulsive Disturbance Transient Processes
11:00-11:20			
11:20-11:40	150	Yongliang Zhao, Peipei Fan, Ming Liu, Daotong Chong, Junjie Yan	Fatigue Lifetime Estimation Of A Heater In Coal-Fired Power Plants Under A Flexible Operational Framework-Regulating Extraction Steam Of High-Pressure Heaters
11:40-12:00	357	Yuan Chi, Yi Zhang, Guanchu Li, Qian Zhang, Changzhong Zhao, Shuyang Liu, Lei Yuan, Shezhan Liu, Yongchen Song	CO <sub>2</sub> /CH <sub>4</sub> Adsorption Property On Shale From China For ESGR Operation
12:00-12:20	420	Anas A. Rahman, Xiaoqing Zhang	Single-Objective Optimization For Stack Unit Of Standing Wave Thermoacoustic Refrigerator Through Particle Swarm Optimization Method

Room: BC303

Session Name: Zero or low energy buildings

Session Chair: Xi Chen, Pietro Elia Campana

Time	Paper ID	Author	Paper Title
10:40-11:00	65	Xi Chen, Junchao Huang, Weilong Zhang, Hongxing Yang	Exploring The Optimization Potential Of Thermal And Power Performance For A Low-Energy High-Rise Building
11:00-11:20	123	Cheol Soo Park	Identification Of Heat Removal Rate Of Heat Pumps
11:20-11:40	311	Yuekuan Zhou, Sunliang Cao	Investigation Of The Flexibility Of A Residential Net-Zero Energy Building (NZEB) Integrated With An Electric Vehicle In Hong Kong
11:40-12:00	428	Yang Yang	Numerical Study On The Thermal Performance Of Pipe-Embedded PCM Building Envelope In The Heating Season
12:00-12:20	1335	Yupeng Wu	Numerical Investigations On The Thermal Performance Of Adaptive ETFE Foil Cushions

Room: BC304

Session Name: Optimal Operation of Hydro, Wind, Solar Power and Their Integration II

Session Chair: Wei Hu, Weijia Yang

Time	Paper ID	Author	Paper Title
10:40-11:00	387	Bin Xu, Feilin Zhu, Bin Xu, Weifeng Liu	Influence Of Complementing Power Load Uncertainty On The Long-Term Benefits Of Hydropower Operations
11:00-11:20	472	Liangcheng Ye	Impacts Of Minimum Load Level Of Thermal Power Plants On Vres Curtailment In China
11:20-11:40	519	Hongxuan Zhang, Wei Hu, Rui Yu, Maolin Tang	Coordinated Optimal Short-Term Operation Of Hydro-Wind-Solar Integrated Systems
11:40-12:00	548	Eid Gul, Chuanxiong Kang, Jinwen Wang	Multi-Objective Short-Term Integration Of Hydro-Thermal Operation With Wind And Solar Power Using Nonlinear Programming
12:00-12:20	752	Zhongzheng He, Jianzhong Zhou	Integrated Scheduling Of Hydro, Thermal And Wind Power With Spinning Reserve

Panel Session: Scientific writing

Room: HJ303

10:40-12:20

12:20-13:20

LUNCH

Room: BC202

Session Name: Biogas and Bioethanol II

Session Chair: Eva Thorin, Francesco Romagnoli

Time	Paper ID	Author	Paper Title
13:20-13:40	24	Senqing Fan, Jianfeng Li, Yicai Liu, Zeyi Xiao	Bioethanol Production In Membrane Distillation Bioreactor With Permeate Fractional Condensation And Mechanical Vapor Compression
13:40-14:00	490	Xin Zhang, Xiao Sen Hou	Experimental Research On Low Calorific Value Gas Blended With Hydrogen Engine
14:00-14:20	898	Francesco Romagnoli, Artūrs Gruduls, Massimilian Dorella, Massimo Collotta, Giuseppe Tomasoni	Anaerobic Co-Digestion Of Baltic Seaweeds With Wheat Straw And Straw Pellets: Synergetic Effects On Biomethane Yield And Kinetic Biodegradability Constant
14:20-14:40	1106	Yu Qin	Biohydrogen And Biomethane Recovery By Recirculated Temperature-Phased Anaerobic Co-Digestion Of Food Waste And Paper Waste
14:40-15:00	1384	Haitao Lu	Accurately Measurement And Efficiently Recovery Of Ionic Liquid In Energy Utilization Of Microalgae

# Day 3

# Oral Presentations

Room: FJ301

Session Name: Biomass pyrolysis and gasification IV

Session Chair: Liang Wang, Baptiste Colin

Time	Paper ID	Author	Paper Title
13:20-13:40	70	Bo-Jhih Lin, Wei-Hsin Chen	A Study Of Hygroscopic Property Of Biomass Pretreated By Torrefaction
13:40-14:00	97	Wei-Hsin Chen	Analysis Of Physicochemical Properties Of Liquefaction Bio-Oil From Food Waste
14:00-14:20	138	Donghai Xu, Shuwei Guo, Liang Liu, Zhiqiang Wu, Yang Wang, Guike Lin	Characterizations Of Water-Soluble And -Insoluble Biocrudes From Hydrothermal Liquefaction Of Chlorella With Heterogeneous Catalysts
14:20-14:40	1312	Xinhai Yu, Zhongqiu Fang	Catalytic Oxidation Of NO On Activated Carbons
14:40-15:00	1386	Liang Wang, Øyvind Skreiberg, Roger Khalil	Effect Of Fuel Mixing On Melting Behavior Of Spruce Wood Ash

Room: BC305

Session Name: Waste to energy conversion IV

Session Chair: Kentaro Umeki

Time	Paper ID	Author	Paper Title
13:20-13:40	874	T. Adefarati, Ramesh Bansal	Economic And Environmental Analysis Of A Cogeneration Power System With The Incorporation Renewable Energy Resources
13:40-14:00	886	Noor Asma Fazli Bin Abdul Samad, Suriyati Saleh	Properties Prediction Of Torrefied Municipal Solid Waste Using Linear Correlation Model
14:00-14:20	960	Houde Jing, Ying Wang, Shao-Yuan Leu	Substrate-Related Features To Maximize Bioenergy Potential Of Chemical Enhanced Primary Treatment Sludge
14:20-14:40	298	Andile Blessings Maqhuzu, Fumitake Takahashi, Kunio Yoshikawa	Potential For Thermal Conversion Of Brewer's Spent Grain Into Biocoal Via Hydrothermal Carbonization In Africa
14:40-15:00	1355	A drying model for large biomass particle pyrolysis using finite volume method	Xiyan Li, Chungeng Yin

Room: BC402

Session Name: Wind power III

Session Chair: Honglei Bai, Xiaoxi Gao

Time	Paper ID	Author	Paper Title
13:20-13:40	253	Jinhua Zhang, Jie Yan, Wenjing Wu	Research On Short-Term Forecasting And Uncertainty Of Wind Turbine Power Based On Relevance Vector Machine
13:40-14:00	268	Dongran Song, Jian Yang, Li Li, Young Hoon Joo	Model Predictive Control Using Multi-Step Prediction Model For The Yaw Control System Of Horizontal-Axis Wind Turbines
14:00-14:20	647	Honglei Bai, Chun-Man Chan	Optimization Of Savonius Turbine Clusters Using An Evolutionary Based Genetic Algorithm
14:20-14:40	1299	Vilas Warudkar, Vilas Warudkar, Siraj Ahmed	Analysis Of A Terrain Characteristic Using Wasp And Windpro
14:40-15:00	369	Yi-Xin Peng, You-Lin Xu, Sheng Zhan	Hybrid DMST Model For High-Solidity Straight-Bladed Vawts

Room: BC404

Session Name: Other renewable energy systems VII

Session Chair: Xiaonan Wang, Jinliang Xu

Time	Paper ID	Author	Paper Title
13:20-13:40	157	Massimiliano Renzi, Pavel Rudolf, David Štefan, Alessandra Nigro, Mosè Rossi	Energy Recovery In Oil Refineries Through The Installation Of Axial Pumps-As-Turbines (Pats) In A Wastewater Sewer: A Case Study
13:40-14:00	18	Huaxu Liang, Ziming Cheng, Hao Wang, Huaxu Liang	Investigation on Optical Properties and Solar Energy Conversion Efficiency of Spectral Splitting PV/T system
14:00-14:20	83	Ali Kuyuk, Ghoreishi-Madiseh Seyed Ali, Ferri Hassani, Agus Sasmito, Leyla Amiri, Jeffrey Templeton	Performance and economic assessment of large-scale deep-lake cooling systems: A Canadian example
14:20-14:40	153	Mosè Rossi, Alessandra Nigro, Giuseppe Roberto Pisaturo, Massimiliano Renzi	Technical and economic analysis of Pumps-as-Turbines (PaTs) used in an Italian Water Distribution Network (WDN) for electrical energy production
14:40-15:00	702	Xiaonan Wang, Lanyu Li, Siming You	Optimal Design of Standalone Hybrid Renewable Energy Systems with Biochar Production in Remote Rural Areas: A Case Study

# Day 3

# Oral Presentations

Room: FJ302

Session Name: Next generation advanced gas turbine cycle II

Session Chair: Min Chen

Time	Paper ID	Author	Paper Title
13:20-13:40	239	Jiyuan Zhang, Hailong Tang, Min Chen	Robust Design Methodologies To The Adaptive Cycle Engine System Performance: Preliminary Analysis
13:40-14:00	240	Pengcheng Dong, Hailong Tang, Min Chen	A Trade-Off Analysis On The Paralleled Heat Release And Compression System Of A Hypersonic Aeroengine
14:00-14:20	241	Dalu Cao	Dcrsm-Based Aeroengine Cycle Selection Approach For Multi-Operating Conditions Performance Reliability
14:20-14:40	247	Minghe Zhang, Hailong Tang, Min Chen, Yihao Xu	Modeling And Performance Analysis Of The Integrated Power Unit
14:40-15:00	255	Shanxuan Tang, Hailong Tang, Min Chen	Multi-State Data-Driven Gas Path Analysis Method

Room: FJ303

Session Name: ORC III

Session Chair: Steven Lecompte, Kian Jon Chua

Time	Paper ID	Author	Paper Title
13:20-13:40	1174	Simon Emhardt, Panpan Song, Guohong Tian, John Chew, Minshan Wei	CFD Analysis Of Variable Wall Thickness Scroll Expander Integrated Into Small Scale ORC Systems
13:40-14:00	460	Andrea De Pascale, Michele Bianchi, Lisa Branchini, Francesco Melino, saverio ottaviano, Noemi Torricelli	Performance Prediction Of A Reciprocating Piston Expander With Semi-Empirical Models
14:00-14:20	564	Yiji Lu	Analysis Of A Combined Trilateral Cycle - Organic Rankine Cycle (TLC-ORC) System For Waste Heat Recovery
14:20-14:40	763	ChunWee Ng, Ivan CK Tam, Dawei Wu	System Modelling Of Organic Rankine Cycle For Waste Energy Recovery System In Marine Applications
14:40-15:00	873	Xianglong Luo	Conceptual Design And Thermodynamic Optimization Of A Novel Composition Tunable Zeotropic Organic Rankine Cycle

Room: HJ203

Session Name: Distributed energy systems II

Session Chair: Pietro Elia Campana

Time	Paper ID	Author	Paper Title
13:20-13:40	1250	Gm Shafiullah	Techno-Economic Evaluation Of Utilizing A Small-Scale Microgrid
13:40-14:00	1129	You Zhou, C.C. Chan, Ding Zhang, Shujun Mu, Yi Zong, Shi You	Smart Energy Evolution Road-Map Based On The Correlation Between Energy And Information
14:00-14:20	1279	Lingshi Wang, Fu Xiao, Borui Cui, Maomao Hu, Tao Lu	Performance Analysis Of Absorption Thermal Energy Storage For Distributed Energy Systems
14:20-14:40	1346	Yuyan Du, Chao Wang, Hailong Li, Jingjing Song	Clustering Heat Users Based On Consumption Data
14:40-15:00	1042	Chengchu Yan, Shuangjun Xu, Chen Jin	Design Optimization Of Hybrid Renewable Energy Systems For Sustainable Building Development Based On Energy-Hub

Room: HJ209

Session Name: Electric vehicles V

Session Chair: Ottorino Veneri, Takuro Kobashi

Time	Paper ID	Author	Paper Title
13:20-13:40	696	Shi Li, Changfu ZOU, Mirco Küpper, Stefan Pischinger	Model-Based State Of Charge Estimation Algorithms Under Various Current Patterns
13:40-14:00	729	Nguyen Ba Hung, Ocktaeck LIM	A Simulation And Experimental Study Of Dynamic Performance And Electric Consumption Of An Electric Bicycle
14:00-14:20	869	Jun Xu, Xuesong Mei, Junping Wang	A High Power Low-Cost Balancing System For Battery Strings
14:20-14:40	883	Clemente Capasso	Design Of A Hybrid Propulsion Architecture For Midsize Boats
14:40-15:00	925	Xiaomeng Li, Xiaodan Yu, Hongjie Jia, Yunfei Mu, Jianzhong Wu, Mingshen Wang, CHAOYU DONG,	Structure Constrained Controller Design For Power Plants And EV Aggregator In Frequency Regulation Considering Time Delays

# Day 3

# Oral Presentations

**Room: HJ210**

**Session Name: Distributed energy systems III**

**Session Chair: Vincent J.L. Guan, Peng Li**

Time	Paper ID	Author	Paper Title
13:20-13:40	121	Rui Tang, Wang Shengwei, Lei Xu	Model Predictive Control For Active Thermal Storage Operation During Fast Demand Response Events In Smart Grids
13:40-14:00	454	yinghao chen, zhaoxia jing	Multiple Energies Retailing Based On Stackelberg Game Model
14:00-14:20	636	GM Shafiullah, Yuli Astriani	Additional Controls To Enhance The Active Power Management Within Islanded Microgrids
14:20-14:40	607	Francesco Melino, Andrea De Pascale, Lisa Branchini, Antonio Peretto, Michele Bianchi, Jessica Rosati, Maria Alessandra Ancona	Combined Heat And Power Generation Systems Design For Residential Houses
14:40-15:00	1078	Jizhe Wang, Shuang Liu, Liangliang Li	Experiments And Modeling On Thermoelectric Power Generators Used For Waste Heat Recovery From Hot Water Pipes

**Room: HJ304**

**Session Name: Energy planning IV**

**Session Chair: Ismael Matino, Leena Heistrene**

Time	Paper ID	Author	Paper Title
13:20-13:40	917	Adrienne Hille, Yilong Han, John Taylor, Tripp Shealy, Annie Pearce, Neda Mohammadi	Empirical Examination Of Pro-Environmental Behaviors In Traditional, Green Featured, And LEED Certified Buildings
13:40-14:00	1006	Wan-Yu Liu, Chun-Cheng Lin	Fuzzy Multi-Objective Forest Biomass-To-Biofuel Facility Location Problem With Social Consideration
14:00-14:20	1133	Wen Hui Liu, Ming Yang Lee, Haslenda Hashim, Jeng Shiun Lim, Jiri J. Klemes, Ahmad Muzammil Idris, Wai Shin Ho	Extended Electric System Cascade Analysis (ESCA) For Optimal Power System Targeting Considering Generation Flexibility And Heat Rate Factor
14:20-14:40	204	Adorkor Bruce-Konuah, Rory Jones, Alba Fuertes, Pieter De Wilde	Central Heating Settings In Low Energy Social Housing In The United Kingdom
14:40-15:00			

**Room: FJ304**

**Session Name: Cryogenic and Cold Energy Storage and Utilization III**

**Session Chair: Alessandro Romagnoli**

Time	Paper ID	Author	Paper Title
13:20-13:40	1142	Emiliano Borri, Alessandro Romagnoli, Alessio Tafone, Jia Yin Sze, Yongliang Li, Gabriele Comodi	An Experimental And Numerical Method For Thermal Characterization Of Phase Change Materials For Cold Thermal Energy Storage
13:40-14:00	1153	Mohamed Fadhel Ayachi, Lizhong Yang, Fabio Dal Magro, Antonella Meneghetti, Alessandro Romagnoli	Assessment Of LNG Cold Energy Utilization For Road Vehicles And Data-Centres Cooling Using Liquid Air
14:00-14:20	1155	Alessio Tafone, Alessandro Romagnoli, Emiliano Borri, Gabriele Comodi	Parametric Performance Maps For Design And Selection Of Liquid Air Energy Storage System For Mini To Micro-Grid Scale Applications
14:20-14:40	1194	Juwon Kim, Daejun Chang	Pressurized Cryogenic Air Energy Storage For Efficiency Improvement Of Liquid Air Energy Storage
14:40-15:00	1348	Rui Tang, Chaoqun Zhuang, Wang Shengwei	Optimal Design Of Multi-Zone Air-Conditioning Systems For Buildings Requiring Strict Humidity Control

**Room: BC203**

**Session Name: Gas hydrates V**

**Session Chair: Kumar Rajnish, Mingjun Yang**

Time	Paper ID	Author	Paper Title
13:20-13:40	310	Jin Fu	A Theoretical Model For Hydrate Removal In Gas-Dominated Pipelines
13:40-14:00	318	Yi Gao, Zhan Quan Ma, Mingjun Yang, Yongchen Song, Xin Lv	Dissociation Characteristic Of Remolded Methane Hydrates Deposits From South China Sea Using Depressurization
14:00-14:20	325	Florian Filarsky, Carsten Schmuck, Heyko Juergen Schultz	Development Of A Gas Hydrate Absorption For Energy Storage And Gas Separation – Proof Of Concept Based On Natural Gas
14:20-14:40	333	Zhenyuan Yin, Zheng Rong Chong, Praveen Linga	Effect Of Multi-Stage Cooling On The Kinetic Behavior Of Methane Hydrate Formation In Sandy Medium
14:40-15:00	346	Zheyuan Liu	Analyzing The Joule-Thomson Effect On Wellbore In Methane Hydrate Depressurization With Different Back Pressure

# Day 3

# Oral Presentations

Room: BC301

Session Name: New materials for energy use II

Session Chair: Xiaohu Yang, Jia Yin Sze

Time	Paper ID	Author	Paper Title
13:20-13:40	635	Wenbo Zhang	Novel shape-stabilized Mg(NO <sub>3</sub> ) <sub>2</sub> •6H <sub>2</sub> O/g-C <sub>3</sub> N <sub>4</sub> composite phase change material with improved thermal reliability
13:40-14:00	741	Adilet Zhakeyev, John Tobin, Huizhi Wang, Filipe Vilela, Jin Xuan	Additive Manufacturing Of Photoactive Polymers For Visible Light Harvesting
14:00-14:20	1046	Jing Ding, Weilong Wang, Xiaolan Wei, Chao Yu	Characteristics of Alkali Nitrates Molten Salt-Promoted MgO as a Moderate-Temperature CO <sub>2</sub> Absorbent
14:20-14:40	1087	Michael K.H. Leung, Rong-hua Yuan, Meng NI, yun he	La <sub>0.8</sub> Sr <sub>0.2</sub> MnO <sub>3</sub> Based Perovskite With A-Site Deficiencies As High Performance Bifunctional Electrocatalyst For Oxygen Evolution And Reduction Reaction In Alkaline
14:40-15:00	1124	Shouguang Yao, yu li, Likang Xu, Jie Cheng	Pore Scale Simulation of Internal Reaction Mechanism of cathode for Zinc-nickel Single-flow Battery

Room: BC302

Session Name: Thermodynamic analysis IV

Session Chair: Roland Span

Time	Paper ID	Author	Paper Title
13:20-13:40	105	Afshin Afshari	Increasing The Accuracy Of Radiation Heat Transfer Estimation In A Lumped Parameter Urban Canopy Model
13:40-14:00	111	Guangya Zhu, T. T. Chow, Fong Kwong Fai, C K Lee	Investigation On Humidified Gas Turbine Cycles With Maisotsenko-Cycle-Based Air Saturator
14:00-14:20	337	Dongsheng Yang, Dongsheng Yang	Study On The Matching Of Thermal Load Characteristics And Photovoltaic Power Control In Typical Buildings
14:20-14:40	176	Zhu Wang, Ming Liu, Chaoyang Wang, Daotong Chong, Junjie Yan	Study On Dynamic Characteristics Of A 600MW Ultra-Supercritical Double-Reheat Boiler
14:40-15:00	183	Xianhua Nie, Li Zhao, Shuai Deng	Molecular Simulation Studies On Vapor-Liquid Equilibria And Thermal Decomposition Of Working Fluids – A Review

Room: BC303

Session Name: Optimal Operation of Hydro, Wind, Solar Power and Their Integration III

Session Chair: Yu Tian, Bin Xu

Time	Paper ID	Author	Paper Title
13:20-13:40	69	Yaoyao He	Uncertainty Forecasting For Streamflow Based On Support Vector Regression Method With Fuzzy Information Granulation
13:40-14:00	89	Kanzumba Kusakana	Optimal Energy Management Of A Residential Grid-Interactive Wind Energy Conversion System With Battery Storage
14:00-14:20	124	Yu Wang, Ronald Wennersten, Qie Sun, Luyao Liu	Peak Shaving And Valley Filling Potential Of Energy Management System In High-Rise Residential Building
14:20-14:40	187	Diyi Chen, Beibei Xu	Modeling A Pumped Storage Power Integration To A Hybrid Power System With Solar-Wind Power And Its Stability Analysis
14:40-15:00	330	Zhengcao Hua, Chao Ma, Mancang Ma, Lingling Bin, Xiulan Pang	Operation Characteristics Of Multiple Solar Trackers Under Typical Weather Conditions In A Large-Scale Photovoltaic Base

Room: BC304

Session Name: Optimal Operation of Hydro, Wind, Solar Power and Their Integration IV

Session Chair: Xin Wen, Siyu Cai

Time	Paper ID	Author	Paper Title
13:20-13:40	813	Jingchun Chu, Ling Yuan, Lei Pan, Qian Liu, Yongqian Liu, Jie Yan	NWP Combination Correction Model Based on Variable-weight Stacking Algorithm
13:40-14:00	871	Evangelos Kalamaras, Huizhi Wang, Jin Xuan, Meltiani Belekoukia, Zhengyu Lin, Bing Xu	Techno-economic Assessment of a Hybrid Off-grid DC System for Combined Heat and Power Generation in Remote Islands
14:00-14:20	890	S Sahoo, Gulshan Sharma, Akhilesh Panwara, Ramesh Bansal	Frequency Regulation of Wind Integrated Power System using Dual Mode Fuzzy
14:20-14:40	891	Akhilesh Panwara, Gulshan Sharma, S Sahoo, Ramesh Bansal	Active Power Regulation of Hydro Dominating Energy System using IDD optimized FPA
14:40-15:00	972	Wei Hu, Shuang Wu	Research on Optimal Operation Strategy of Multi-energy Power System Considering Complementary Coordination

15:00-15:20

**TEA/COFFEE BREAK**

# Day 3

# Oral Presentations

**Room: BC202**

**Session Name: Solar thermal energy V**

**Session Chair: Yanhua Lai, Himanshu Dehra,**

Time	Paper ID	Author	Paper Title
15:20-15:40	479	Sajjad Mahmoudi Nezhad	Numerical Parametric Study On The Performance Of CPV-TEG Hybrid System
15:40-16:00	515	Xinzhi Wang, Siyuan Luo, Tianqi Tang, Xing Liu, Yurong He	A MCRT-FVM-FEM Coupled Simulation For Optical-Thermal-Structural Analysis Of Parabolic Trough Solar Collectors
16:00-16:20	582	Peng Xu, Xiaoyu Guo, yaxuan xiong	The Effect Of Added Magnesium Nitrate On The Thermophysical Property Of Sodium Nitrate
16:20-16:40	646	Fei Yang	Simulation Analysis Of Household Solar Assistant Radiant Floor Heating System In Cold Area
16:40-17:00	1303	Kai Wang, María Herrando, antonio pantaleo, Christos Markides	Thermoeconomic Assessment Of A PV/T Combined Heating And Power System For University Sport Centre Of Bari
17:00-17:20	1359	Zhenqian Chen, Zhenqian Chen	Experimental Study On Thermal Performance Of Solar Absorber With CuO Nano Structure Selective Coating

**Room: FJ301**

**Session Name: Fuel cells VI**

**Session Chair: Ni Meng, Xi Li**

Time	Paper ID	Author	Paper Title
15:20-15:40	1059	Yanbo Chen, Yu Luo, Yixiang Shi, Ningsheng Cai	Theoretical Modeling Of Methane Production In Pressurized Micro-Tubular R-SOFC
15:40-16:00	1086	Michael K.H. Leung, yun he, Chengxu ZHANG	Nife Layered Double Hydroxide/Bivo4 Photoanode Based Dual-Photoelectrode Photocatalytic Fuel Cell For Enhancing Degradation Of Azo Dye And Electricity Generation
16:00-16:20	1108	Dengjie Chen	An Enhanced Non-Noble Perovskite-Based Oxygen Electrocatalyst
16:20-16:40	1261	Vanja Subotic, Stefan Pofahl, Vincent Lawlor, Norbert H. Menzler, Thomas Thaller, Christoph Hochenauer	Online Monitoring Tools For SoH Diagnostic And Prognostic Of Remaining Lifetime Of Reversible Solid Oxide Cell (Rsoc) Systems
16:40-17:00	1118	Zhen Wu, Meng Ni, Zaoxiao Zhang	Dynamic Modeling Of A NG-Fueled SOFC-PEMFC Hybrid System Coupled With TSA Process For Fuel Cell Vehicle
17:00-17:20	1166	Yongliang Zhang, Minfang Han	La0.6Sr0.4Co0.2Fe0.8O3-Δ Nanoparticles Modified Ni-Based Anode For Direct Methane-Fuelled SOFCs

**Room: BC305**

**Session Name: Geoenergy IV**

**Session Chair: Siwei Meng, Jianming Li**

Time	Paper ID	Author	Paper Title
15:20-15:40	736	Yuekun Xing, Guangqing Zhang, Yongwang Jiang, Hui Zhao	Enhanced Geothermal Systems: Rock Fracturing Characteristics Under Sudden Thermal Shock
15:40-16:00	757	Mohammad Kazemi, Siyan Liu, Ali Takbiri-Borujeni, Zhong Zhi	Molecular Simulation Of Enhanced Oil Recovery In Shale
16:00-16:20	862	Renfeng Yang, Guangwei Liu	Seepage Law And Superposition Method Of Fluid Transporting Through Different Rock-Type Reservoir
16:20-16:40	885	Mao Sheng, Zhe Huang	Pre-Existing Fracture Sliding Due To EGS Hydro-Shearing Stimulation: Numerical Modeling And Experimental Validations
16:40-17:00	276	Lingling Xu, Liang Pu, Di Qi, Yanzhong Li	Influences Of Structure Parameters On Performance Of Tree-Shaped Ground Heat Exchanger
17:00-17:20	905	Akshat Chandna, Sanjay Srinivasan	Modeling Natural Fracture Networks Using Improved Geostatistical Inferences

**Room: BC402**

**Session Name: Geoenergy V**

**Session Chair: Xianzhi Song, Qier An**

Time	Paper ID	Author	Paper Title
15:20-15:40	534	Qiang Liu, Jie Sun, Yuanyuan Duan	Effects Of Reinjection Temperature On Thermodynamic Performance Of Dual-Pressure And Single-Pressure Geothermal Organic Rankine Cycles
15:40-16:00	542	Ahinoam Pollack, Tapan Mukerji	What Earth Properties And Engineering Decisions Most Influence The Productivity Of An Enhanced Geothermal System?
16:00-16:20	561	Weifeng He, Hongxing Yang, Dong Han	Thermodynamic Analysis Of A Novel Humidification Dehumidification Desalination System Driven By Heat Pump
16:20-16:40	621	Ying Xin, Zhixue Sun, Li Zhuang, Jun Yao, Kai Zhang, Dongyan Fan, Kelvin Bongole, Tong Wang, Chuanyin Jiang	Numerical Simulation Of The Mass And Heat Transfer In EGS With Thermal-Hydraulic-Mechanical Coupling Method Based On A Rough Fracture Model
16:40-17:00	721	Sharon Cheng, Jundika Kurnia, Agus Sasmito	The Effect Of Triangular Protrusions On Geothermal Wellbore Heat Exchanger From Retrofitted Abandoned Oil Wells
17:00-17:20	1325	Siyuan Chen, Qi Zhang, Yanyan Tang, Yaoming Li, Hailong Li, Boyu Liu	Investment Strategy For Shallow Geothermal Resource Based On Real Option Model



# Day 3

# Oral Presentations

**Room: BC404**

**Session Name: Energy monitoring and evaluations III**

**Session Chair: Bin Ye, Jürgen-Friedrich Hake**

Time	Paper ID	Author	Paper Title
15:20-15:40	546	ziwei Huang	Post-Evaluation Of Energy Consumption Of The Green Retrofit Building
15:40-16:00	973	Stefano Dettori, Ismael Matino, Valentina Colla, Valentine Weber, Sahar Salame	Neural Network-Based Modeling Methodologies For Energy Transformation Equipment In Integrated Steelworks Processes
16:00-16:20	601	Fei Wu	On Modelling The Joint Production Of Desirable And Undesirable Outputs In Efficiency Analysis
16:20-16:40	616	Adorkor Bruce-Konuah, Rory Jones, Alba Fuertes, Pieter De Wilde	Central Heating Settings And Heating Energy Demand In Low Energy Social Housing In The United Kingdom
16:40-17:00	632	Yulan Zheng, Xuefeng Liu	Analysis Of Parallel Operation Characteristics Of Chillers Under Partial Load Conditions
17:00-17:20	701	Christine Milchram, Carolin Märker, Juergen-Friedrich Hake	The Role Of Values In Analyzing Energy Systems: Insights From Moral Philosophy, Institutional Economics And Sociology

**Room: FJ302**

**Session Name: Energy monitoring and evaluations IV**

**Session Chair: Lijing Zhu, Reinhard Madlener**

Time	Paper ID	Author	Paper Title
15:20-15:40	705	Haibo Dai, Jinshi Wang, Gen Li, Weixiong Chen, BinBin Qiu, Junjie Yan	A Multi-Criteria Comprehensive Evaluation Method For Distributed Energy System
15:40-16:00	719	michele zinzi, Benedetta Mattoni	On The Cost Reduction Of A Nearly Zero Energy Multifamily House In Italy: Technical And Economic Assessment
16:00-16:20	728	Danyang Li, Wen-ying Chen	Prospective Influences Of The Substitution Of Electric Vehicles For Liquid Vehicles: TIMES Modeling Of The Global Energy System
16:20-16:40	965	Ismael Matino, Stefano Dettori, Valentina Colla, Valentine Weber, Sahar Salame	Two Innovative Modelling Approaches In Order To Forecast Consumption Of Blast Furnace Gas By Hot Blast Stoves
16:40-17:00	817	Linan Yang, Lu Lin	Estimating Embodied Energy Consumption Via China's Industrial Transfer At Provincial Level: Based On Multi-Regional Input-Output Analysis
17:00-17:20	833	Khoa Le, Ming Jun Huang, Nihilkumar Shah, Christopher Wilson, Paul Mac Artain, Raymond Byrne, Neil Hewitt	High Temperature Air Source Heat Pump Coupled With Thermal Energy Storage: Comparative Performances And Retrofit Analysis

**Room: FJ303**

**Session Name: Energy for developing countries III**

**Session Chair: Victor Nian, Jun Yuan**

Time	Paper ID	Author	Paper Title
15:20-15:40	5	Wenchao Li, Rondi Guan, Lixin Tian	Can Interactive Innovation Make Energy-Saving Transformation Of Manufacturing Enterprises?
15:40-16:00	33	Yang Shen, Yongchen Guo, Wenlin Chen	Safety Analysis Of China's Marine Energy Channel Based On Multi - Agent Simulation
16:00-16:20	125	Tanveer Ahmad, Huanxin Chen, Yao Huang	Short-Term Energy Prediction For District-Level Load Management Using Machine Learning Based Approaches
16:20-16:40	136	Bastian Gillessen, Heidi Ursula Heinrichs, Jürgen-Friedrich Hake	Energy Security In Context Of Transforming Energy Systems: A Case Study For Natural Gas Transport In Germany
16:40-17:00	863	Han CHEN, Wen-ying Chen	Development Of High-Resolution Emission Inventory For China's Building Sector And Emission Reductions Evaluation Of Coal Replacement Policy
17:00-17:20	131	Xin Qin, Xinwei Shen, Hongbin Sun, Qinglai Guo	A Quasi-Dynamic Model And Corresponding Calculation Method For Integrated Energy System With Electricity And Heat

**Room: HJ203**

**Session Name: Energy market, scenarios and forecasting, and energy security III**

**Session Chair: Leena Heistrene**

Time	Paper ID	Author	Paper Title
15:20-15:40	223	Huanxin Chen, Yao Huang, Tanveer Ahmad, Yabin Guo, Jiangyu Wang, Yue Yuan	A Novel Energy Demand Prediction Strategy For Residential Buildings Based On Ensemble Learning
15:40-16:00	224	Eriko Yasuoka, Koji Tokimatsu, Masahiro Nishio	Exploring The 2 °C Target With 100 Percent Renewable Energy Under Uncertainty In Climate Sensitivity
16:00-16:20	1327	Yaoming Li, Qi Zhang, Hailong Li, Yanyan Tang, Boyu Liu	The Impact Of Dual-Credit Scheme On New Energy Vehicle Penetration And Typical Automakers' Strategies
16:20-16:40	320	Kelvin Say, Michele Rosano	A Simulation Framework For The Dynamic Assessment Of Energy Policy Impacts On Customer PV-Battery Adoption And Associated Energy Market Impacts
16:40-17:00	353	Reza Nadimi, Koji Tokimatsu	Evaluation Of The Energy System Through Data Envelopment Analysis: Assessment Tool For Paris Agreement
17:00-17:20	494	Wei Wang, Jiayu Chen	Investigation On Correlation Of Energy Consumption Of Multi-Buildings On Campus Area

# Day 3

# Oral Presentations

Room: HJ209

Session Name: AI for energy-cyber-physical systems

Session Chair: Ming Jin

Time	Paper ID	Author	Paper Title
15:20-15:40	52	Fredrik Ahlgren, Maria Mondejar, Marcus Thern	Predicting Dynamic Fuel Oil Consumption On Ships With Automated Machine Learning
15:40-16:00	193	Zhicong Chen	An Intelligent Fault Diagnosis Method For PV Arrays Based On Optimal Rotation Forest Algorithm
16:00-16:20	423	Shengyuan Zhong, Shuai Deng, Jun Zhao, Yongzhen Wang, Pengwei Su	A Case Study Of Operation Optimization On A Renewable Energy Building By E-CPS Method: From Both Sides Of Supply And Demand
16:20-16:40	544	Ming Jin, Ruoxi Jia, Hari Prasanna Das, Wei Feng, Costas Spanos	Biscuit: Building Intelligent System Customer Investment Tools
16:40-17:00	547	Ruoxi Jia, Ming Jin, Costas Spanos	Advanced Building Control Via Deep Reinforcement Learning
17:00-17:20	563	Siyao Liu, Zhong Zhi, Ali Takbiri-Borujeni, Mohammad Kazemi, Qinwen Fu, Yuhao Yang	A Case Study On Homogeneous And Heterogeneous Reservoir Porous Media Reconstruction By Using Generative Adversarial Networks

Room: HJ210

Session Name: Heat transfer enhancement, heat exchangers and heat pipe IV

Session Chair: Xiaoze Du

Time	Paper ID	Author	Paper Title
15:20-15:40	768	Francesco Lonis, Yang Luo, John Andresen, Mercedes Maroto-Valer	Capture Of Cold Energy From Liquid Nitrogen Using A Braze Plate Heat Exchanger
15:40-16:00	788	Nguyen Ba Chien, Jong-Taek Oh, Hideyo Asano, Yasushi Tomiyama	Investigation Of Experiment And CFD Simulation Of A Plate Heat Exchanger
16:00-16:20	839	Xin Cui, Yanhua Liu, Liwen Jin, Xiangzhao Meng	Studying The Performance Of A Liquid Desiccant Indirect Evaporative Cooling System
16:20-16:40	865	Jian Wang, Yuwei Sun, Mingjian Lu, Jiawei Wang, Yan Xinping	Study On Thermal-Hydraulic Performance Of Sinusoidal Channeled Printed Circuit Heat Exchanger
16:40-17:00	432	Xinlong Li	Numerical Study Of Droplet Formation In The T-Junction Microchannel With Wall Velocity Slip
17:00-17:20	1306	Xiao Niu	Numerical Investigation Of The Asymmetric Cross-Corrugated Heat Exchanger

Room: HJ304

Session Name: Thermal and mechanical energy storage technologies II

Session Chair: Alessandro Romagnoli, Jia Yin Sze

Time	Paper ID	Author	Paper Title
15:20-15:40	403	Mengdi Yuan, Feng Ye, Chao Xu	Supercooling Study Of Erythritol/EG Composite Phase Change Materials
15:40-16:00	419	Qiuwang Wang, Xinyi Li, Ting Ma, Hao Zhang, Jun Liu, Ziliang Zhu, Zirui Xu	Effect Of Supergravity On Heat Transfer Characteristics Of PCM With The Pore-Scale Lattice Boltzmann Method
16:00-16:20	449	Sarula Chen	Sensitivity Analysis On Borehole Thermal Energy Storage Under Intermittent Operation Mode
16:20-16:40	214	Chuan Li	Effects Of Mgo Particle Size And Density On Microstructure Development Of Mgo Based Composite Phase Change Materials
16:40-17:00	909	Christian Knoll	Magnesium Oxide From Natural Magnesite Samples As Thermochemical Energy Storage Material

Room: FJ304

Session Name: thermal and mechanical energy storage technologies III

Session Chair: Shaopeng Guo, Weilong Wang

Time	Paper ID	Author	Paper Title
15:20-15:40	210	Mohamed Fadl, Philip Eames	A Numerical Investigation Into The Heat Transfer And Melting Process Of Lauric Acid In A Rectangular Enclosure With Three Values Of Wall Heat Flux
15:40-16:00	341	Penghui Feng, Yang Liu, Iqra Ayub, Zhen Wu, Fusheng Yang, Zaoxiao Zhang	Techno-Economic Analysis Of Screening Metal Hydride Pairs For A Large-Scale Thermal Energy Storage System
16:00-16:20	348	Jieyao Hu	Thermal Energy Storage Of R1234yf/MOF-5 And R1234ze/MOF-5 Nanofluids: A Molecular Simulation Study
16:20-16:40	910	Danny Müller, Christian Knoll, Georg Gravogl, Werner Artner, Andreas Werner, Jan M. Welch, Ronald Miletich, Michael Harasek, Peter Weinberger	Low-Temperature Carbonatization Of Metal Oxides
16:40-17:00	368	Shengni Zhou, Jianjun Zhang, Wenji Song, Ziping Feng	Modeling On Heat Transfer Performance Of Supercritical Compressed Air In A Casing Heat Exchanger
17:00-17:20	377	Xiaoyi Chen	Parameter Analysis Of Discharging Process For CaCO <sub>3</sub> /CaO Thermochemical Energy Storage

# Day 3

# Oral Presentations

Room: BC203

Session Name: Thermal and mechanical energy storage technologies IV

Session Chair: Xiaohu Yang, Gaosheng Wei

Time	Paper ID	Author	Paper Title
15:20-15:40	934	Wenjun Xie, Jing Ding, Xiaolan Wei, Weilong Wang, Gaofei Xia, Juntong Xing	Corrosion Resistance Of Stainless Steel And Pure Metal In Ternary Molten Nitrate For Thermal Energy Storage
15:40-16:00	474	Muthukumar Palanisamy, Gurpreet Singh Sodhi, K Vigneshwaran	Assessment Of Heat Transfer Characteristics Of A Latent Heat Thermal Energy Storage System: Multi Tube Design
16:00-16:20	961	Fan Yuan	Study On The Compressed Ion Layer And The Specific Heat Of The Phase Change Materials Doping Charged Single-Walled Carbon Nanotubes
16:20-16:40	998	Yaxuan Xiong Peng Xu, Yulong Ding, Chen Hongbing	Performance Analysis Of ED-PR System With Dual Expanders And ORC For Pressure Energy Recovery
16:40-17:00	1083	Agus Sasmito, Mahmoud Alzoubi, Matthew Fong, Jundika Kurnia	Performance Evaluation Of Ground-Coupled Seasonal Thermal Energy Storage With High Resolution Weather Data: Case Study Of Calgary, Canada
17:00-17:20	769	Wei Lu	Analytical Solution Of Phase Change Heat Transfer In Micro-Particles With Convection Boundary

Room: BC301

Session Name: Gas hydrates VI

Session Chair: Shibin Wang, Jing-Chun Feng

Time	Paper ID	Author	Paper Title
15:20-15:40	185	Yanghui Li, Zhaoran Wu, Weiguo Liu	Effect Of Reformation Of Gas Hydrate On The Gas Phase Permeability Of Montmorillonite
15:40-16:00	190	Zaixing Liu, Weiguo Liu, Chen Lang, Yanghui Li	Effect Of Surfactant HLB Value On Methane Hydrate Formation In Non-Ionic Surfactant-Oil Water Emulsions Systems
16:00-16:20	195	Asheesh Kumar, Hari Prakash Veluswamy, Rajnish Kumar, Praveen Linga	Kinetic Promotion Of Mixed Methane-THF Hydrate By Additives: Opportune To Energy Storage
16:20-16:40	271	Tao Lv, Xiao-Sen Li, Zhaoyang Chen, Ke-Feng Yan, Yu Zhang	Effect Of Fulvic Acid On Methane Hydrate Formation And Dissociation In Mixed Porous Media
16:40-17:00	272	Bin Wang, Jiafei Zhao	Dynamical Mechanism Of Hydrate Formation Resulting From Free Gas Migration Into Seeping Seafloor Sediments
17:00-17:20	1211	Jing Cai	Study On The Temperature Characteristics In The Process Of Cyclopentane-Methane Binary Hydrate Formation With A Set Of Large-Scale Equipment

Room: BC302

Session Name: Heat transfer enhancement, heat exchangers and heat pipe V

Session Chair: Janie Ling-Chin, Philip Eames

Time	Paper ID	Author	Paper Title
15:20-15:40	989	Yimo Luo	Molecular Dynamics Simulation On LiCl-H <sub>2</sub> O Interfacial Phenomenon For Liquid Desiccant Dehumidification
15:40-16:00	1000	Qianmei Fu, Jing Ding, Jiewei Lao, Weilong Wang, Jianfeng Lu, Wenjun Xie	Numerical Simulation Of Heat Transfer Performance Between Molten Salt And Supercritical CO <sub>2</sub> In Double-Pipe Heat Exchanger
16:00-16:20	1043	Chuanshuai Dong, Lin Lu	Enhancing The Dehumidification Efficiency Of Solar-Assisted Liquid Desiccant Air Dehumidifiers Using Nanoscale TiO <sub>2</sub> Super-Hydrophilic Coating
16:20-16:40	1044	Qiuwang Wang, S.M.A. Naqvi, Karem Elfeky	Numerical Analysis On Performances Of Shell Side In Segmental Baffles, Helical Baffles And Novel Clamping Anti-Vibration Baffles With Square Twisted Tubes Heat Exchangers
16:40-17:00	1338	Md Lokman Hosain, Rebei Bel-Fdhila, Konstantinos Kyprianidis	Simulation And Validation Of Flow And Heat Transfer In An Infinite Mini-Channel Using Smoothed Particle Hydrodynamics

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Room: AG206			
Poster Session I			
August 23, 13:00-13:40			
Poster ID	Paper ID	Author	Paper Title
P1-1	1011	Arnusorn Saengprajak, Wutthisat Chockua	Prospective Of Application The Direct-Biogas Solid Oxide Fuel Cell System To The Biogas Plant In Thailand
P1-2	1369	Pietro Elia Campana, Hailong Li, Yong Hao, Hongguang Jin, Jinyue Yan	Optimal C-PV/T System Integrated In Biomethane Production
P1-3	1368	Chaudhary Awais Salman	Synergistic Combination Of Pyrolysis, Anaerobic Digestion, And CHP Plants
P1-4	593	Jiayin Zhu	Thermal Performance Of Courtyard Cave Dwellings In Western Henan Province
P1-5	74	Ye Yang, Zhu Jinjiao, Li Yang, Yuezhao Zhu	CO-Gasification Characteristics Of Scrap Tyre With Pine Sawdust Using Thermogravimetric And A Whole-Tyre Gasifier Reactor
P1-6	114	Zhiqiang Wu	Fast Pyrolysis Behavior Of Lignocellulosic Biomass Model Compound: Releasing Properties, Kinetic Analysis Of The Primary Gaseous Products And Char Structure Evolution From Cellulose
P1-7	235	Jiangjiang Wang, Jing Wu	Distributed Biomass Gasification Power Generation System Based On Concentrated Solar Radiation
P1-8	655	Denis Svishchev, Alexander Kozlov, Maxim Penzik	Unstratified Downdraft Gasification: Conditions For Pyrolysis Zone Existence
P1-9	1036	Alexander Kozlov, Oleg Marchenko, Sergei Solomin	The Modern State Of Wood Biomass Gasification Technologies And Their Economic Efficiency
P1-10	296	Shuoya Cheng	Multi-Objective Network Reconfiguration Considering V2G Of Electric Vehicles In Distribution System With Renewable Energy
P1-11	314	Hongwei Fang, Liting Jin	Investigation On Resonance Response Of Mass-Adjustable Float In Wave Energy Conversion System
P1-12	319	Hongwei Fang, Hongxu Chen	Analysis And Reduction Of The Cogging Torque Of Flux-Modulated Generator For Wave Energy Conversion
P1-13	88	Haixiang Zang, Miaomiao Wang, Lilin Cheng, Zhinong Wei, Guoqiang Sun	Application Of DBN For Estimating Daily Solar Radiation On Horizontal Surfaces In Lhasa, China
P1-14	200	Ze Cheng, Qi Liu	A Hybrid Probabilistic Estimation Method For Photovoltaic Power Generation Forecasting
P1-15	411	Jingkai Wu, Cao Bin, Wei Lin	Simulation Analysis Of Harmonic Characteristics Of Photovoltaic Power Generation System Based On MATLAB
P1-16	417	Liyang Zhu	Implementation And Simulation Analysis Of GMPPT Algorithm Under Partial Shadow Condition
P1-17	516	Yingya Chen, Yanfeng Liu, Zhijun Tian, Yong Zhou, Yu Dong, Xiaowen Wang, Dengjia Wang	Experimental Study On The Effect Of Dust Deposition On Photovoltaic Panels
P1-18	533	Haiyan Lei, Guo Wei, Chuanshan Dai	Experimental Study Of A Micro-Refrigeration System Driven By Photovoltaic Power Generation
P1-19	611	Ning Li, Zhao Yang, Qiang Zhang, Rui Feng, Yukang Wu	Numerical Study On Windbreaks With Different Porosity In Photovoltaic Power Plants

# Day 1

# Poster Presentations

P1-20	841	Mo Po Jen	Preparation Of Moisture-Resisted Perovskite Layers In PSCs
P1-21	977	Chengsi Yong, Ying Chen	An Optimization Method Of Active Distribution Network Considering Uncertainties Of Renewable DGs
P1-22	1024	Zhicong Chen, Lijun Wu	Parameter Extraction Of PV Models Using A Shuffled Complex Evolution Algorithm Improved By Opposition-Based Learning
P1-23	1031	Lili Yang	Optical Characteristics Of Silicon Recombination Random Nanostructures For Solar Cells
P1-24	1149	Shaoyun Ge, Zhengyang Xu, Hong Liu, Mengyi Liu, Zan Yang, Chenghao Zhang	Coordinated Voltage Control For Active Distribution Network Considering The Impact Of Energy Storage
P1-25	1339	Pietro Elia Campana, Martin Vincent Mancuso, Jinyue Yan	Evaluation Of Grid-Connected Micro-Grid Operational Strategies
P1-26	236	Jiangjiang Wang, Meng Li	Thermodynamic Performance Analysis Of A Solar-Assisted Distributed System Driven By Natural Gas
P1-27	355	Yong Zhou, Yanfeng Liu, Yingya Chen, Dengjia Wang	General Models For Estimating Daily Diffuse Solar Radiation In China: Diffuse Fraction And Diffuse Coefficient Models
P1-28	573	Jianfeng Lu	Transient Heat Transfer Performance Of Molten Salt Tubular Receiver
P1-29	619	Yi Huang	Influence Of Solar Radiation And Nocturnal Radiation Effect On Heat Transfer Performance Of Building Exterior Wall In Western Sichuan
P1-30	779	Dengjia Wang, Xiaowen Wang, Yingya Chen, Wenjun Kang, Yanfeng Liu	Experimental Study On Performance Test Of Serpentine Flat Plate Collector With Different Pipe Parameters And A New Phase Change Collector
P1-31	944	Song Lv, Feiyang Sun	Experimental Investigation Of Solar Thermoelectric (STEG) Co-Generation System
P1-32	981	Hadi Farabi-Asl	Low-Carbon Water And Space Heating Using Solar Energy, Japan's Experience
P1-33	1182	Yi Ding, Zhigang Zhang, Chunmei Guo	Dynamic Heat Transfer Performance Of The Wall Implanted With Heat Pipes And Its Energy Saving Characteristics During The Heating Season
P1-34	335	Liang Teng, Xuan Yimin	A Novel Solar Receiver For Supercritical CO <sub>2</sub> Brayton Cycle
P1-35	99	Yu-Fong Huang	Torrefaction Of Sewage Sludge By Using Microwave Heating
P1-36	159	Ding Luo, Ruochen Wang	Theoretical Analysis Of Energy Recovery Potential For Different Types Of Conventional Vehicles With A Thermoelectric Generator
P1-37	197	Lungang Chen	One-Pot Conversion Of Cellulose To Liquid Hydrocarbon Efficiently Catalyzed By Ru/C And Boron Phosphate In Aqueous Medium
P1-38	1022	Xinghua Zhang, Liu Qiang, Qi Zhang, Qiyong Liu, Lungang Chen, Yuping Li, Wang Chenguang, Longlong Ma	Aromatic Fuel Production From Phenolics By Catalytic Hydrodeoxygenation Over Novel Mo-Based Catalyst
P1-39	1337	Yaoqian Liu	Reducing The Agitation Power Consumption In Anaerobic Digestion Of Corn Straw By Adjusting The Rheological Properties
P1-40	115	Jiyong Shi, Lu Hu	IIWO Based Sliding Mode Extremum Seeking Control For MPPT In Wind Energy Conversion System
P1-41	188	Ivan Postnikov, Valery Stennikov, Andrey Penkovskii	Integrated Energy Supply Schemes On Basis Of Cogeneration Plants And Wind Power Plants
P1-42	225	Jun Liu, Yefu Chen, Chao Duan, Jia Lyu	Distributionally Robust Chance-Constraint Optimal Power Flow Considering Uncertain Renewables With Wasserstein-Moment Metric

# Day 1

# Poster Presentations

P1-43	245	Na Sun, Jianzhong Zhou, Guangbiao Liu, Zhongzheng He	A Hybrid Wind Speed Forecasting Model Based On A Decomposition Method And An Improved Regularized Extreme Learning Machine
P1-44	618	Huilan Jiang, Zhaoqing Zhou	Coordinated Optimization Of DFIG Rotor Crowbar And DC-Chopper Resistances Based On NSGA-II
P1-45	620	Kun Zhang, Yufeng Su, Jianqiao Ding, Qi Gong, Zhiyong Duan	An Airflow Energy Harvester Using Diamagnetic Levitation Structure
P1-46	623	Huilan Jiang, Chi Zhang	An Adaptive Control Strategy Of Crowbar For The Low Voltage Ride-Through Capability Enhancement Of DFIG
P1-47	825	Yang Yang	Aero-Structural Investigation Of Sesquiplane Wind Turbine Blades
P1-48	1052	Chongbo Sun, Kai Yuan, Tianyu Zhao, Guanyu Song, Xiong Yang, Yi Song	Operational Strategy Based Evaluation Method Of Distributed Energy Storage System In Active Distribution Networks
P1-49	1121	Jun Li, Lun Feng, Shengyuan Zhong, Tiantong Guo, Guibing Chen	Economic Analysis Of Urban Phase-Level Distributed Phase-Change Heat Storage Stations
P1-50	81	Lun Yang, Xia Zhao, Xinyi Li, Xinxin Feng, Wei Yan	An MILP-Based Optimal Power And Gas Flow In Electricity-Gas Coupled Networks
P1-51	281	Shaomin Wang, Shouxiang Wang, Dan Wang	Combined Probability Density Model For Medium Term Load Forecasting Based On Quantile Regression And Kernel Density Estimation
P1-52	410	Yichen Shen, Chenghong Gu, Pengfei Zhao	Structural Vulnerability Assessment Of Multi-Energy System Using A PageRank Algorithm
P1-53	441	Xiaoyun Hu, Yang Lun, Xia Zhao, Wei Yan	Probabilistic Energy Flow Analysis For Urban Energy Systems Considering Correlated Uncertainties
P1-54	539	Liu Liu, Dan Wang, Hongjie Jia, Weiliang Wang, Zhengji Meng, Yunqiang Zhi, Shenxi Zhang, Wei Du	Analysis Of Tie-Line Power Optimization In Integrated Energy Distribution System
P1-55	577	Peiyu Chen, Yu Lan, Dan Wang, Weikang Liu, Weiliang Wang, Zhiqiang Chong, Xudong Wang	Optimal Planning And Operation Of CCHP System Considering Renewable Energy Integration And Seawater Desalination
P1-56	609	Weikang Liu, Dan Wang, Xiaodan Yu, Weiliang Wang, Yu Lan, Xudong Wang, Jiancheng Yu	Multi-Objective Planning Research On Micro Energy Network Considering Desalination
P1-57	764	Jiawei Lv, Shenxi Zhang, Haozhong Cheng, Dan Wang	Reliability Evaluation Of Integrated Energy System Considering The Dynamic Behaviour Of Loads And Operation Strategy
P1-58	807	Saddam Aziz, Huizhi Wang, Jianchun Peng	Guaranteed Load Power Supply Based On Power Convection Coordination
P1-59	824	Yuchen Tian	A Two-Step Approach To Solve The Issue Of Dew Condensation For Displacement Ventilation And Chilled Ceiling System
P1-60	933	Xiaohu Yang	Numerical Investigations On Outdoor Thermal Comfort For Built Environment: Case Study Of A Northwest City In China
P1-61	248	Luhao Wang, Qiqiang Li, Guixiong He, Guanguan Li, Rui Wang	A Robust Optimization Approach For Risk-Averse Energy Transactions In Networked Microgrids
P1-62	457	Chou Hon Leong, Chenghong Gu, Furong Li	Auction Mechanism For P2P Local Energy Trading Considering Physical Constraints
P1-63	660	Xiao Luo, Peng Peng, Yuying Shao, Jian Li, Guoqin Yu	A Coordinated Power Control Strategy For Urban Micro-Grid

# Day 1

# Poster Presentations

P1-64	662	Peng Peng, Haimin Hu, Yuying Shao, Xiao Luo, Yu Liu, Na Zhang, Youwei Wang	Design And Optimization Of Damping Materials For Power Equipment Based On Material Gene Engineering Technology
P1-65	739	Ville Tikka, Aleksei Mashlakov, Anna Kulmala, Sami Repo, Matti Aro, Antti Keski-Koukkari, Samuli Honkapuro, Pertti Järventausta, Jarmo Partanen	Integrated Business Platform Of Distributed Energy Resources – Case Finland
P1-66	1045	Jun Wang, Xun Dou, Yanmin Guo, Ping Shao, Xin Zhang	Purchase Strategies For Power Retailers Based On The Non-Cooperative Game
P1-67	1049	Yanmin Guo, Ping Shao, Jun Wang, Xun Dou, Wenhao Zhao	Purchase Strategies For Power Retailers Considering Load Deviation And CVaR
P1-68	1164	Ville Tikka, Andrey Lana, Nadezda Belonogova, Samuli Honkapuro, Jukka Lassila, Jarmo Partanen	Technical Implementation Of The Battery Resource Control In A Multitask Operating Environment
P1-69	1321	Pan Zhang, Xun Dou, Wenhao Zhao, Mingtao Hu, Xin Zhang	Analysis Of Power Sales Strategies Considering Price-Based Demand Response
P1-70	844	Nijie Jing, Hongmei Zhu, Heping Li	Sintering Characteristics Of Ash From Combustion Of Coal And Sawdust Blends
P1-71	1114	Alexander Kozlov	Kinetics Of Thermochemical Conversion Of The Lignite Coal In Steam Flow
P1-72	1243	Ali Alsaegh, Najlaa Alboshmina, Agustin Valera-Medina, Cheng Tung Chong, Fares Hatem, Mohammed Al-Fahham	Effects Of Different Nozzle Configurations On Swirl Flow Topology In Tangential Swirl Burners
P1-73	329	Jumoke Oladejo, Kaiqi Shi, Yang Meng, Stephen Adegbite, Tao Wu	Biomass Constituents' Interactions With Coal During Co-Firing
P1-74	25	Changbin Zhu, Baoping Xu, Yazhou Nie	An Integrated Design And Operation Optimal Method For CCHP System
P1-75	73	Mayken Espinoza-Andaluz, Geanella Villalba, Gonzalo Almeida	A Detailed Experimental Study Of A PEFC'S Behavior Considering Different Temperature Conditions
P1-76	212	Mayken Espinoza-Andaluz, Julio Barzola-Monteses, Andrés Rigail-Cedeño, José Diaz	A Pre-Feasibility Experimental Study Of Using Surface-Enhanced Flake Graphite To Build Up PEFC Bipolar Plates
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P1-78	261	Yuanwu Xu, Xiaolong Wu, Tao Xue, Dongqi Zhao, Xi Li	Modeling And Simulation Of Temperature Distribution For Planar Cross-Flow Solid Oxide Fuel Cell
P1-79	578	Tao Xue, Xiaolong Wu, Yuanwu Xu, Zehua Li, Xi Li	Fault Diagnosis Of SOFC Stack Based On Neural Network Algorithm
P1-80	447	Hua Xiao	Emissions Of Nitrogen-Based Fuel Combustion In Swirl Burner
P1-81	684	Arif Darmawan, Muhammad Aziz, Koji Tokimatsu, Anggoro Cahyo Fitrianto, Muhammad W. Ajiwibowo	Co-Production Of Hydrogen And Power From Palm Mill Wastes
P1-82	689	Jinsheng Xiao, Li Wang, Feng Ye, Pierre Bénard, Richard Chahine	Heat Transfer Analysis For Fast Filling Of On-Board Hydrogen Tank
P1-83	704	Jinsheng Xiao, Shuo Ma, Wei Tao, Pierre Bénard, Richard Chahine	Simulation And Optimization For Hydrogen Purification Performance Of Vacuum Pressure Swing Adsorption

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P1-86	1212	Najlaa Alboshmina, Agustin Valera-Medina, Ali Alsaegh	Ammonia- Hydrogen Combustion In A Swirl Burner With Reduction Of NOx Emissions
P1-87	260	Nini Chang, Jialing Zhu, Guibing Chen, Anda Song, Peipei Zhang	Working Fluids Selection From Perspectives Of Heat Source And Expander For A Trilateral Cycle
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P1-89	78	Min Li, Weiwu Ma, Tao Liu	Second-Law-Based Screening Of Working Fluids For Medium-Low Temperature Organic Rankine Cycles (ORCs): Effects Of Physical And Chemical Properties
P1-90	17	Jun Liu, Xiaohua Liu, Tao Zhang	Performance Investigation Of A Heat Pump Driven, Vacuum Liquid Desiccant Regeneration System
P1-91	19	Na Zhu	Numerical Study On Thermal Performance Of PCM Trombe Wall
P1-92	540	Jiayin Zhu	Climate Responsive Characteristics Of Cliff-Side Cave Dwellings In Cold Area Of China
P1-93	1048	Jinghua Yu, Qingchen Yang, Hong Ye	The Optimum Phase Transformation Temperature For Building Roof With Outer Layer PCM In Different Climate Regions Of China
P1-94	192	Ivan Postnikov, Andrey Penkovskii	Prosumer In The District Heating Systems: Operating And Reliability Modeling
P1-95	584	Jiah Yu, Jun Hyung Ryu, In-Beum Lee	Stochastic Operational Planning Of Hybrid Renewable Energy System With Energy Storage System Considering Uncertainty
P1-96	80	Yunfei Luo	A Comparative Experimental Analysis Of PMSM Between Deadbeat Prediction Current Control And Field-Oriented Control
P1-97	155	Jian Chen, Cheng Lin, Sheng Liang	Mixed Logical Dynamical Model-Based MPC For Yaw Stability Control Of Distributed Drive Electric Vehicles
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P1-99	316	Sen Yang, Li Junqiu, Zhichao Li, Lin Guo	An Energy Conservation Strategy Based On Drive Mode Switching For Multi-Axle In-Wheel Motor Driven Vehicle
P1-100	336	Lin Guo	Lithium-Ion Battery SOC Estimation And Hardware-In-The-Loop Simulation Based On EKF
P1-101	364	Shuangyuan Wang, Ran Li, Adrian Evans, Furong Li	Electric Vehicle Load Disaggregation Based On Limited Activation Matching Pursuits
P1-102	385	Cheng Lin, Shuai Shao, Mingjie Zhao, Aidao Dong	Power Management Strategy For A Novel Hybrid Electric Bus With Dual Planetary Gears
P1-103	424	Yu Liu, Chaoying Xia, Miao Gu, Wei Xin, Xuming Men	A Novel Active Equalizer For Li-Ion Battery Pack In Electric Vehicles
P1-104	442	Torbjorn Trosten, Henrik Mosskull, Martin Lindahl, Erik Dahlquist, Azaza Maher	Energy Optimal Switching Frequency For A 750v Metro Traction Drive Using Silicon Carbide MOSFET Inverter
P1-105	556	Cheng Lin, Mingjie Zhao, Hong Pan, Shuai Shao	Energy Management For A Dual-Motor Coupling Propulsion Electric Bus Based On Model Predictive Control
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P1-108	1020	Dengjia Wang, Yuan Liu, Xiaowen Wang, Yanfeng Liu, Yanchao Xu	Experimental Study On The Thermal Performance Of An Enhanced-Convection Radiative Heating Wall System
P1-109	1311	Ruixin Li, Nannan Hao, Changhai Liu, Jiayin Zhu	Theoretical Analysis Of Passive Lateral Ventilation Evaporative Cooling Based On The Capillary Action
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P1-115	628	Ziya Luo, Zhaoxia Jing	An IGDT Model For Capacity Configuration Optimization Of Island Microgrid
P1-116	861	Xin Li, Ruoli Tang	A Knowledge Based Multi-Objective Optimization Strategy For Microgrid Environmental/Economic Scheduling Problems
P1-117	148	Shaoyun Ge, Jifeng Li, Hong Liu, Xiaou Liu, Yiran Wang, Hao Zhou	Domestic Energy Consumption Modeling Per Physical Characteristics And Behavioral Factors
P1-118	436	Guanhong Chen, Lixia Yan, Dong Liu	Mixed Logical Dynamic Based Optimal Control Model For User Side Integrated Energy System
P1-119	746	Yanxia Zhang	A New Principle Of Traveling Wave Differential Protection For HVDC Transmission Lines
P1-120	794	Weilin Li, Liu Yang	Study On The Effects Of Air Conditioners Under Intermittent Operation Conditions On Residential Demand Response
P1-121	1383	Azaza Maher	An Open-Source Visualization Platform For Energy Flows Mapping And Enhanced Decision Making
P1-122	1381	Azaza Maher	Energy Flow Mapping And Key Performance Indicators For Energy Efficiency Support: A Case Study A Sports Facility
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P1-124	132	Bin Yuan, Yongqing Wang, Nan Wei	The Effects Of Fracturing Fluid Retention On Permeability Of Shale Reservoirs
P1-125	338	Zhe Huang, Zhongwei Huang	Review Of Radial Jet Drilling And The Key Issues To Be Applied In New Geo-Energy Exploitation
P1-126	374	Anda Song, Jialing Zhu, Peipei Zhang, Nini Chang, Zhiwei Cui	Experimental Research On Solar And Geothermal Energy Coupling Power Generation System
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P1-128	467	Guangzhi Liao, Shaobin Guo, Guangzhi Liao	Pore Characterization And Influence Factor Analysis Of Organic Rich Shale From Upper Paleozoic Marine-Continental Transitional Facies In Western Ordos Basin, China
P1-129	625	Geetartha Dutta, Tapan Mukerji, Jo Eidsvik	Value Of Information Analysis For Time-Lapse Seismic Data By Simulation-Regression

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P1-131	691	Chao Luo, Yulie Gong, Zhenneng Lu	The Stability Study Of Flash-Binary Power System Based On Experiment
P1-132	922	Zhong Zhi, Siyan Liu, Timothy Carr, Ali Takbiri-Borujeni, Mohammad Kazemi, Qinwen Fu	Numerical Simulation Of Water-Alternating-Gas Process For Optimizing EOR And Carbon Storage
P1-133	685	Jiajia Xu, Liping Liu, Zhenmao Bao	Smart Grid Privacy Protection Using Solar Energy And Rechargeable Battery
P1-134	57	Zhendong Zhang, Hui Qin, Liqiang Yao, Jiantao Lu, Liangge Cheng	Interval Prediction Method Based On Long-Short Term Memory Networks For System Integrated Of Hydro, Wind And Solar Power
P1-135	58	Ruoli Tang, Zhou Wu, Xin Li	Optimal Power Flow Dispatching Of Maritime Hybrid Energy System Using Model Predictive Control
P1-136	133	Xingli Yin, Liangge Cheng, Xuemin Wang, Jiantao Lu, Hui Qin	Optimization For Hydro-Photovoltaic-Wind Power Generation System Based On Modified Version Of Multi-Objective Whale Optimization Algorithm
P1-137	152	Li Jie, Liqiang Yao, Liangge Cheng, Hui Qin, Jiantao Lu	Wind-Solar-Hydro Power Optimal Scheduling Model Based On Multi-Objective Dragonfly Algorithm
P1-138	263	Zhipeng Ma, Sen Wang, Shanzong Li, Yunyun Shi	Long-Term Coordination For Hydro-Thermal-Wind-Solar Hybrid Energy System Of Provincial Power Grid
P1-139	264	Zhipeng Ma, Sen Wang, Jianjian Shen, Shanzong Li, Yunyun Shi	Design Of Multi-Energy Joint Optimization Dispatching System For Regional Power Grids Based On B/S Architecture
P1-140	465	Su Guo, Yong Yang, Qunming Liu, Rong Li	Day-Ahead Scheduling For A New Wind-CSP Hybrid System
P1-141	520	Yuqi Yang, Li Mo, Jianzhong Zhou, Yongqiang Wang, Xiao Chen	Quantization Of Wind Fluctuation Based On IV
P1-142	651	Peng Zhijun, Baiman Chen, Runhua Jiang, Qin He, Shi Tao, Hanmin Xiao, Ying Chen, Minlin Yang	Numerical Simulation Of Aerodynamic Performance Of An Airfoil Combined Lift And Drag
P1-143	693	Zheng Xiaokang, Peng Shaoming	Synergetic Optimal Operation Of Cascade Reservoirs In Mainstream Of Yellow River Responding To Drought
P1-144	700	Yeshuai Ge, Li Mo, Yongqiang Wang	Optimal Distribution For Hydropower Load With Wind-Energy
P1-145	1263	Xin Wen, Xiaohui Lei, Guohua Fang, Guo-Hua Fang	A Novel Multi-Objective Extended Shuffled Frog Leaping Algorithm For Complex Water-Energy System Optimization
P1-146	1281	Wei Zeng	Comprehensive Optimized Configuration Of Regional Small Hydropower And New Energy System
P1-147	1372	Chao Wang	A Rapid Solution Adjustment Strategy In Solving Long-Term Scheduling Of Large Cascade Hydropower Stations
P1-148	1373	Jiahui Sun, Xiaohui Lei	A Uniform Spatial Allocation Strategy In Solving Water Resources Optimization Dispatch Problem
P1-149	842	Tingting Du, Yue Sun	Correlation Of Building Heating And Air Qualities In Typical Cities Of China
P1-150	928	Abhishek Kumar, Nand Meena, Arvind R. Singh, Deng Yan, He Xiangning, Prof R C Bansal, Praveen Kumar	Strategic Allocation And Energy Management Of BESS For The Provision Of Ancillary Services In Active Distribution Networks
P1-151	172	Mei Lin, Su Bo, Li Shicong, Qiuwang Wang	Numerical Study Of Flow And Mixing Characteristics In A T-Junction Under Inflow Pulsation

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P1-153	41	Tingtao Ma, Huan Zhang, Shijun You, Xuejing Zhang, Qingwei Miao, Haomin Li	Numerical investigations on combustion characteristics, NO and CO emission of Gas Instantaneous Water Heater with partial premixed combustion

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P2-2	6	Rondi Guan, Lixin Tian, Rongdi Guan	Analysis Of Influencing Factors On Energy Efficiency Of Yangtze River Delta Urban Agglomeration Based On Spatial Heterogeneity
P2-3	82	Liyang Liu, Shouxiang Wang, Renle Huang	An Estimation Method For Marginal Cost Of Distribution System Reliability Based On Consumer-Centric Reliability Assessment
P2-4	90	Hikmet Karakoc, M. Ziya Sogut, Enver Yalcin	Sustainable Carbon Management In Corporate Governance: A Case Study
P2-5	202	Changhui Yang, Rui Yao, Kaile Zhou	Forecasting Of Electricity Price Subsidy Based On Installed Cost Of Distributed Photovoltaic In China
P2-6	390	Liyun Liu	The Application Of Real Option To Renewable Energy Investment: A Review
P2-7	409	Yajun Zhang, Chenghong Gu, Furong Li, Jie Yan	Cournot Game Based Multi-Supplier Local Energy Trading
P2-8	1103	Shouxiang Wang, Chenrui Zhao, Liyang Liu, Songguo Xie	Reliability Pricing Method Based On Consumer-Centric Reliability Metrics With The Integration Of Energy Storage System
P2-9	179	Wenyi Wu, Wenlong Liao, Jian Miao, Guoli Du	Using Gated Recurrent Unit Network To Forecast Short-Term Load Considering Impact Of Electricity Price
P2-10	308	Andrey Penkovskii, Valery Stennikov, Ivan Postnikov	Unified Heat Supply Organization: Mathematical Modeling And Calculation
P2-11	514	Hideaki Obane	Forecasting Photovoltaic And Wind Energy Capital Costs In Japan: A Bayesian Approach
P2-12	668	Stefan Flamme, Daniel Benrath, Sabrina Glanz, Franziska Hoffart, Christian Pielow, Michael Roos, Roland Span, Hermann-Josef Wagner, Anna-Lena Schönauer	Elegancy: The Interdisciplinary Approach Of The German Case Study To Enable A Low Carbon Economy By Hydrogen And CCS
P2-13	1021	Muhammad Aziz, Takuya Oda, Takao Kashiwagi	Comparison Of Liquid Hydrogen, Methylcyclohexane And Ammonia On Energy Efficiency And Economy
P2-14	291	Hongting Ma, Chen Li, Junwen Lai, Fan Yang, Zihao Li	Investigation On Energy Consumption Of Public Buildings In Tianjin
P2-15	340	Bin Chen, Xiaohui Li, Haowu Liu, Leijiao Ge	Hybrid Subjective And Objective Evaluation Method Of The Equipment For First Class Distribution Network
P2-16	373	Junwen Lai, Hongting Ma, Chen Li, Fan Yang, Zihao Li	Analysis Of School Building Energy Consumption In Tianjin, China
P2-17	517	Yuan Zeng, Waiying Guo, Fengbin Zhang	Comprehensive Evaluation Of Renewable Energy Technical Plans Based On Data Envelopment Analysis
P2-18	572	Xutao You, Chunsheng Jia, Jianyi Liu, Xinyi Liao	A New Production Data Analysis Method Of Shale Gas: Based On Flowing Material Balance Theory And Considering The Complex Flow Mechanisms Of Multiple Pressure Systems
P2-19	659	Xutao You, Chunsheng Jia, Jianyi Liu, Jun Li	A New Quantitative Predicting Model Of Fracturing Fluid Flow-Back: Based On Fractal Theory And Fuzzy Statistic Method

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P2-20	676	Chenyao Shen, Kang Zhao, Jian Ge, Qingli Zhou	Analysis Of Building Energy Consumption In A Hospital In The Hot Summer And Cold Winter Area
P2-21	1053	Ying Chen, Chengsi Yong	Distributed State Estimation For Distribution Network With Phasor Measurement Units Information
P2-22	1193	Jiayuan Song, Zeyi Jiang, Yulong Ding	Analysis And Evaluation Of Material Flow In Different Steel Production Processes By gPROMS-Based Simulation
P2-23	301	Zhitong Ma, Cantao Ye, Weibin Ma	Support Vector Regression For Predicting Building Energy Consumption In Southern China
P2-24	342	Meng Shen, Yujie Lu, Kai Yi Tan	Big Five Personality Traits, Demographics And Energy Conservation Behaviour: A Preliminary Study Of Their Associations In Singapore
P2-25	394	Shengmao Shu, Li Mo, Yongqiang Wang	Peak Shaving Strategy Of Wind-Solar-Hydro Hybrid Generation System Based On Modified Differential Evolution Algorithm
P2-26	587	Yan Wang	Using The STIRPAT Model To Explore The City Development Mode Under Dual Control Of Water Resources And Energy-Related CO <sub>2</sub> Emissions
P2-27	921	Xiangyu Kong, Bowei Sun	Demand-Responsive Virtual Power Plant Optimization Scheduling Method Based On Competitive Bidding Equilibrium
P2-28	971	Hai Huang, Can Wang, Wenjia Cai, Jingxuan Hui	Optimizing The Power Generation Structure For Low Carbon Development Target In China: A Comparison Study Of Endogenous And Exogenous Technology Improvements
P2-29	1360	Xiaoqian Xi, Hailong Li, Fredrik Wallin, Anders Avelin, Xi Yang	Air Pollution Related Externality Of District Heating – A Case Study Of Changping, Beijing
P2-30	1364	Shuaili Dong, Hailong Li, Fredrik Wallin, Anders Avelin, Qi Zhang	Volatility Of Electricity Price In Denmark And Sweden
P2-31	1365	Caiyun Bian, Hailong Li, Fredrik Wallin, Anders Avelin, Lu Lin	Finding The Optimal Location For Public Charging Stations – A GIS-Based MILP Approach
P2-32	23	Ying Zhu	Development Of An Uncertain Gaussian Diffusion Model With Its Application To Production-Emission System Management In Coal-Dependent City- A Case Study Of Yulin, China
P2-33	408	Qianyun Chen, An Tingli, Xuerui Gao, Shibao Lu, Wang Yubao	The Water Footprint Of Coal-Fired Electricity Production And The Virtual Water Flows Associated With Coal And Electricity Transportation In China
P2-34	1101	Xiaoming Tan	Analysis Of Heat Transfer On Film Cooling Performance In A Flat Plate
P2-35	1197	Fanfei Bai, Mingbiao Chen, Wenji Song, Yang Li, Ziping Feng, Yongliang Li	Thermal Management Of 48 V Standby Battery For Outdoor Base Station At Cold Environment
P2-36	128	Yu-Fong Huang	CO <sub>2</sub> Adsorption On Biochar From Co-Torrefaction Of Sewage Sludge And Leucaena Wood Using Microwave Heating
P2-37	924	Yingjie Li, Wan Zhang, Changyun Chi	Fabrication Of Synthetic Ca-Based Sorbent By Hard-Template Method And Its CO <sub>2</sub> Capture Performance
P2-38	967	Hsuan Chang	Simulation Of The Dynamics And Control Responses Of The Carbon Dioxide Chemical Absorption Process Using Aspen Custom Modeler
P2-39	575	Hao Wang, Qin Sun	Characteristics Of A Large Temperature Difference Chilled Water Storage Tank With Bag-Shaped Interlayer
P2-40	733	Yulan Zheng	Experimental Investigations For The PCM Energy Storage System Application In Prefabricated Temporary Houses
P2-41	880	Yaoting Huang	Evaluation Of Thermal Performance In Cold Storage Applications Using EG-Water Based Nano-Composite PCMS

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P2-43	35	Weidong Chen, Jun Liang, Zhaohua Yang, Gen Li	A Review Of Lithium-Ion Battery For Electric Vehicle Applications And Beyond
P2-44	48	Jianjun Zhang, Shengni Zhou, Shuaiqi Li, Wenji Song, Ziping Feng	Performance Analysis Of Diabatic Compressed Air Energy Storage (D-Caes) System
P2-45	147	Shaoyun Ge, Jifeng Li, Hong Liu, Xu Zhang, Hao Sun, Yuchen Cao	Reliability Evaluation Of Multi-Energy Microgrids: Energy Storage Devices Effects Analysis
P2-46	171	Guoan Liu, Cheng Xu, Kai Jiang, Kangli Wang	State Of Charge And Model Parameters Estimation Of Liquid Metal Batteries Based On Adaptive Unscented Kalman Filter
P2-47	831	Jing Shi	Integrate Method To Alleviate The High Frequency PWM Pulse Voltage On SMES Magne
P2-48	877	Yaoting Huang	A Novel Method To Predict Thermal Conductivity Of NaClwater Based MCNT Nano-Suspension For Cold Energy Storage
P2-49	997	Dongsheng Ren, Xuning Feng, Languang Lu, Jianqiu Li, Minggao Ouyang	Comparison Of The Overcharge Behaviors Of Lithium-Ion Batteries Under Different Test Conditions
P2-50	1283	Lin Cong, Xiaohui She, Guanghui Leng, Yulong Ding	Formulation And Characterisation Of Ternary Salt Based Solutions As Phase Change Materials For Cold Chain Applications
P2-51	1001	Yanqi Zhao, Boyang Zou, Yulong Ding	Active Cooling Based Battery Thermal Management Using Composite Phase Change Materials
P2-52	1002	Yanqi Zhao, Boyang Zou, Yulong Ding	Round Trip Efficiency Of Lithium Ion Battery
P2-53	1034	Jonghoon Kim	Electrical Test And Thermal Analysis For Series/Parallel Battery Pack's Initial Start-Up At Extremely Low Temperature
P2-54	1055	Yu Tang, Ximing Cheng	Review Of Specific Heat Capacity Determination Of Lithium-Ion Battery
P2-55	1176	Shouxiang Wang, Chun Li, Zhixin Pan, Jianming Wang	Probabilistic Method For Distribution Network Electric Vehicle Hosting Capacity Assessment Based On Combined Cumulants And Gram-Charlier Expansion
P2-56	122	Xiaoxiao Jiang, Lei Zhou	Numerical Study On The Effects Of Multiple-Injection Coupled With EGR On Combustion And NOx Emissions In A Marine Diesel Engine
P2-57	244	Srikanth Allamsetty, Sankarsan Mohapatro	Prediction Of NO And NO <sub>2</sub> Concentrations In NTP Treated Diesel Exhaust Using Multilayer Perceptrons
P2-58	580	Heng Zhang, Lin Su	Coupling Heat Pump And Vacuum Drying Technology For Urban Sludge Processing
P2-59	697	Xi Zhang, Shuzhong Wang, Jun Zhao, Liwei Ma, Pengfei Yu, Zhiqiang Wu, Zefeng Jing	Energy Saving From Furnace Slag: An Analysis Of Free-Surface Film Flow Characteristics Of Liquid Slag On The Rotary Cup
P2-60	848	Yi Zhang	Research Status And Development Of Polymer Flooding Injection Process And Allocators
P2-61	76	Yuxin Zheng, Zihua Wang	Study On The Heat Transfer Characteristics Of A Shell-And-Tube Phase Change Energy Storage Heat Exchanger
P2-62	110	Gang Wang, Chao Xu, Gaosheng Wei, Xiaoze Du	Numerical Study Of A Novel Dual-PCM Thermal Energy Storage Structure Filled With Inorganic Salts And Metal Alloy As The PCMS
P2-63	184	Weiguang Su, Tongyu Zhou, Yilin Li, Yuexia Lv	Development Of Microencapsulated Phase Change Material With Poly (Methyl Methacrylate) Shell For Thermal Energy Storage
P2-64	470	Muthukumar Palanisamy, K. Vigneshwaran, Gurpreet Singh Sodhi	Experimental Investigation Of A Cast-Steel Based Thermal Energy Storage System

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P2-65	324	Yunxiu Ren, Chao Xu, Feng Ye, Zhirong Liao	The Effect Of The Cold Compressing Pressure On The Microstructure And Thermal Properties Of Binary Eutectic Nitrate/Expanded Graphite Phase Change Material Composites
P2-66	730	Xiaodong Peng, Xiaohui She, Binjian Nie	Liquid Air Energy Storage With LNG Cold Recovery For Air Liquefaction Improvement
P2-67	802	Lifang Liu, Yue Qu, Tao Xu, Jiayu Chen, Huijun Wu, Gongsheng Huang, Xiaoqing Zhou, Lixiu Yang	Experimental Study On Preparation Of A Novel Foamed Cement With Paraffin/ Expanded Graphite Composite Phase Change Thermal Energy Storage Material
P2-68	932	Xiaohu Yang	Experimental Investigations On The Thermal Energy Storage Performance Of Shell And Tube Unit With Composite Phase Change Materials
P2-69	1139	Zhu Jiang, Yulong Ding	Preparation And Characterization Of A Novel Form Stable Composite PCM For Heat Storage With Temperature Over 700°C
P2-70	1336	Yilin Li, Weiguang Su	Investigation On Thermal Performance Of An Integrated Phase Change Material Blind System For Double Skin Façade Buildings
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P2-72	118	Yifei Sun, Jinrong Zhong, Guangjin Chen, Changyu Sun	Enhanced Depressurization For Methane Recovery From Hydrate-Bearing Sediments By Ethylene Glycol Pre-Injection
P2-73	130	Tao Yu, Guoqing Guan, Abuliti Abudula, Akihiro Yoshida, Dayong Wang, Yongchen Song	Enhanced Gas Recovery From Methane Hydrate Reservoir In The Nankai Trough, Japan
P2-74	604	Seongdeok Seo	Synergy Effect Study Of Poly(N-Isoacrylamide) With Tetra Butyl Phosphonium Bromide On Methane Hydrate Formation
P2-75	984	Chenyao Wang	Effect Of Water Injection In A Spark Ignition Engine Using Kerosene
P2-76	1154	Zhiming Xia	Comparison Of CO <sub>2</sub> /H <sub>2</sub> /H <sub>2</sub> O Hydrate Formation Processes With Different Promoters
P2-77	1169	Zhiming Xia	CO <sub>2</sub> /H <sub>2</sub> /H <sub>2</sub> O Hydrate Formation With TBAB And Nanoporous Materials
P2-78	71	Wei Shao, Zheng Cui, Lin Cheng, Zhaoyou Chen, Jingchen Wang, Yu Liu, Xiaohan Ren, Feng Luo	Experimental Researches On The Convective Heat Transfer In A Channel Packed With Disordered Particles
P2-79	137	Peng Qian	Compact Design Of Greatway Welding Machine
P2-80	321	Yiqiang Wu, Minghou Liu, Xinlong Li, Song Lyu, Feiyang Sun, Peng Qian, Fubo Xie, Chi Xu	Device Design And Simulation Optimization Of Exhaust Gas Cooling
P2-81	682	Liwei Ma, Shuzhong Wang, Jun Zhao, Xi Zhang, Zhongqing Zhang, Donghai Xu, Zhiqiang Wu	Study On Cooling Down Law And Temperature Control Method Of Liquid Blast Furnace Slag Storage Device From Energy Saving Of Steel Industry
P2-82	695	Chuanshan Dai, Yu Shi, Long Zeng, Jiashu Li, Haiyan Lei	Heat Extraction Performance Of A Deep Downhole Heat Exchanger
P2-83	771	Peipei Zhang, Jialing Zhu, Nini Chang, Anda Song, Yujiao Lei, Yifan Sui, Yushi Wang	Experimental Study On Heat Transfer Performance Of New Gravity Heat Pipe In Geothermal Utilization
P2-84	893	Alireza Rezaniakolaei	Numerical Investigation Of Radiative Heat Transfer Inside A 2-D Irregular Geometry Containing Nano- And Micro-Size Particles

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P2-86	941	Hao Lu, Li-Zhi Zhang, Lin Lu, Anjian Pan	Numerical Investigation On Monodispersed Particle Deposition In Turbulent Duct Flow With Thermophoresis
P2-87	1008	Bin Zheng, Chunmei Guo, Qi Shi, Jian Lv, Yuwen You	An Analytical Model For Cross-Flow Indirect Evaporative Cooling Considering Condensation Under Various Fresh Air Conditions
P2-88	1016	Dandong Meng, Jian Lv, Yi Chen, Yuwen You, Han Li	An Experimental Study On Condensate Film Of Indirect Evaporative Cooler
P2-89	1035	Yuwen You, Hui Jiang, Jian Lv	Analysis Of Influence Of IEC Heat Exchanger Based On CFD Method
P2-90	1077	Tong Chen, Chunmei Guo, Bin Zheng, Qinghua Liu, Jian Lv, Yuwen You	Experimental Study On Evaluation Index Of Indirect Evaporative Cooling Heat Transfer Performance
P2-91	1126	Jiewei Lao, Jianfeng Lu, Jing Ding, Weilong Wang, Qianmei Fu	Heat Transfer Between Molten Salt And Supercritical CO <sub>2</sub> In Discontinuous Fins Print Circuits Heat Exchanger
P2-92	1099	Wei Shao, Zheng Cui, Yu Liu	Multi-Objective Optimization On Clinker Layer Thickness Of A Grate Cooler Based On Entropy Generation
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P2-94	956	Dong Chengyu, Ying Wang, Huaimin Wang, Carol Sze Ki Lin, Hsien-Yi Hsu, Shao-Yuan Leu	New Generation Urban Biorefinery toward Complete Utilization of Waste Derived Lignocellulosic Biomass for Biofuels and Value-Added Products
P2-95	559	Jeanette Gorewoda, Pascal Maas, Ruhr-University Bochum, Viktor Scherer	Emittance Of Typical Ash Minerals: Influence Of Particle Size And Mixtures Of Carbonates And Sulfates
P2-96	732	Xiujian Xie	Dynamic Process and Validation of a Full Localization 250W@4.5K Large Scale Helium Cryogenic Plants
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P2-104	1137	Di Qin, Zhun Yu, Tingting Yang, Shuishen Li, Guoqiang Zhang	Thermal Performance Evaluation Of A New Structure Hot Water Tank Integrated With Phase Change Materials
P2-105	1400	Mingkun Jiang, Yuexia Lv, Tiankun Wang, Zunqiang Sun, Jianmin Liu, Xinhai Yu, Jinyue Yan	Performance analysis of a photovoltaics aided coal-fired power plant
P2-106	1277	Hebin Ruan, Hongjun Gao, Junyong Liu, Youbo Liu	A Distributionally Robust Reactive Power Optimization Model For Active Distribution Network Considering Reactive Power Support Of DG And Switch Reconfiguration



# Day 2

# Poster Presentations

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P2-109	714	Xi Yang, Xiaoqian Xi, Wanqi Lin, Shan Guo	Effect Of China's Energy Conservation Efforts On Reducing Health Damage
P2-110	1274	Yanping Yang, Huijun Wu, Lixiu Yang, Tao Xu, Yunfei Ding, Ping Fu	Thermal And Day-Lighting Performance Of Aerogel Glazing System In Large Atrium Building Under Cooling-Dominant Climates
P2-111	1073	Xinxin Han, Huiming Zou, Hongbo Xu, Changqing Tian	Experimental Study On Vapor Injection Air Source Heat Pump With Internal Heat Exchanger For Electric Bus









