

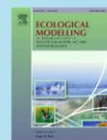


International Conference on Energy, Ecology and Environment












International Conference on Electric and Intelligent Vehicles

Stavanger
Norway
July 23-26
2019



C O N T E N T S

	WELCOME TO ICEEE/ICEIV 2019
	ACKNOWLEDGEMENT
	COMMITTEES
	KEYNOTE SPEAKERS
	WORKSHOP
	PRACTICAL GUIDE
	SPEAKER GUIDE
	PROGRAM AT A GLANCE
	ORAL PRESENTATIONS



We are in an era of “Energy Transition”. Fossil fuels have been the main energy source powering the human society, but has caused increasing concerns on the associated climate change and adverse impact on the global ecosystem. There is an urgent need to accelerate the change towards low-carbon energy systems that enable robust and sustainable economic development. Developing responsible technologies to enable this energy transition, which integrates technological solutions for ecosystem and environment, play a major role. This further supports the recognized dearth of research for clean energy innovations, which may lead to quicker transitions.

Stavanger is the “Oil Capital” of Norway is also experiencing a “Transition”. The discovery of oil and gas at the Norwegian continental Shelf has powered one of the fastest growing economy in the world during the past decades. The great Stavanger region has witnessed this fast-economic development and became the most vibrant urban area in Norway. The locating of the government renewable energy fund to Stavanger, which aims at providing smart and clean energy solutions, is transforming Stavanger into the “Energy Capital” of Norway.

In the past years the International Conference on Energy, Ecology and Environment (ICEEE) has become a leading international forum for key stakeholders of the energy, ecology and environment sectors. The forum brings together experts in three disciplines to discuss the latest technological advancement and share their experiences and ideas on a safe, affordable, ecologically and environmentally responsible global energy transition.

Conference Chairs

Prof. Zhixin Yu (University of Stavanger, Norway)

Prof. Bin Chen (Beijing Normal University, China)



In order to build cleaner and more efficient vehicles, automobile industries worldwide tend to develop the technology in the directions of fuel decarbonization, energy diversification and power electrification. Electric vehicles (EVs), which represent energy-saving and new energy automobiles, become an effective way to solve the problems of air pollution, oil shortage and low efficiency and thus help automobile industries to transition into the development of a sustainable transport. As such, the research and development of EVs has attracted the worldwide attention and taken on an accelerated pace. The International Conference on Electric and Intelligent Vehicles (shorted as ICEIV2019) will provide an excellent forum for scientists, researchers, engineers and government officials all over the world to present and discuss the latest key EV technologies and development trends , which will be held in Norway on July 23-26, 2019.

ICEIV2019 program will feature keynote speeches, workshops and paper sessions. Topics of interest include, but are not limited to

1. Electric/hybrid vehicles
2. Intelligent vehicles
3. Connected automated vehicle
4. Vehicle technology
5. Energy storage technology
6. Motor and power electronics

Conference Chairs

Prof. Rui Xiong (Beijing Institute of Technology, China)

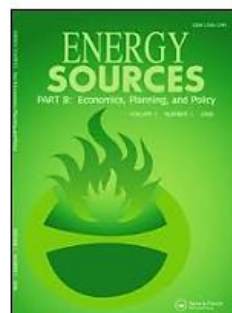
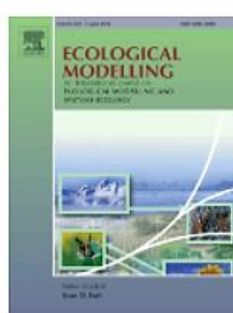
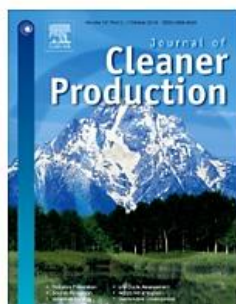




Organizers



Supporting Journals





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Xiaofeng Ding

Xiaosong Hu

Xuan Zhou

Yonggang Liu

Zheng Chen





Prof. Liz Varga

Title: Aggregators: a new regime for mobilisation of distributed energy resources

Distributed energy resources (DERs) such as photo-voltaics and electric-traction car batteries, in the past motivated by local resilience, or by carbon reduction, are not meeting their potential. When aggregated DERs can provide capacity to energy grids, permitting local redistribution of supply and storage, and avoiding expensive grid reinforcement. But aggregation, that provides the scale and certainty of performance, given the nature of intermittent renewables, requires data and algorithms that operate autonomously over digital networks, constantly revising, delivering, balancing, and settling transactions. There is now the ability to unlock digital data-driven economic growth via growth in DERS which offer lower cost, higher resilience, carbon friendly sources to energy markets.

Professor Varga has expertise in trans-disciplinary research projects across infrastructure systems (energy, transport, water, waste and telecoms) and food systems focusing on sustainable outcomes for the environment, society and the economy. Strongly underpinned by complexity science theories, methods and tools, which she is extending, Prof Varga is able to explain how services which rely on interdependencies and which cross boundaries and scales in these critical systems can be delivered more innovatively and resiliently. She does this mindful of trends and uncertainties in climate, societal and institutional change, and business models, by exploring possibilities for system futures through scenarios in order to measure interventions which transform infrastructure systems to provide sustainable consumption. Liz's skills are in creating abstractions of real-world systems, focusing on wicked problems, recognizing emergent phenomena and co-evolutionary effects, and assessing measurable systemic outcomes. Liz uses mixed and hybrid methodologies embracing both quantitative and qualitative data to lead the design of computational algorithms and visualisations of the dynamics of inter-connected systems. She has experience of system transitions, modeling the effects of interventions from various scales: policy, technology and innovation, and analysing computational results representing economic, environmental and societal effects.

She won the Cranfield University Research Award (2014, 2016). Prof. Liz Varga has recently joined UCL and is developing a new Centre for Infrastructure Systems providing thought leadership through industry and government advisory roles. She supervises a number of doctoral students with theses on resilience, innovation and efficiency. She is a top 7% EPSRC Peer Review College reviewer (2018), an invited speaker on infrastructure systems, resilience and liveable/future cities, invited international reviewer, lecturer in systems, society and sustainability for engineers, and an international journal reviewer for: *Emergence: Complexity and Organization* (2008-). She has edited special issues on integrated utility systems, complexity and energy, and complexity and supply chain, and has a chapter in the new Edward Elgar Handbook of Research Methods in Complexity Science.



Prof. Brian Fath

Title: Ecological network analysis: methods to reveal indirect pathways, application to urban metabolism

Abstract: Ecological Network Analysis is a powerful methodology that provides a simultaneous whole-system investigation. Almost all complex systems can be conceptualized as a set of interacting nodes and arcs connecting them, based on the transfer of energy/material/information between the nodes. Once realized as such network methodologies can be applied to assess the direct and indirect influences between compartments and the pairwise interactions between any two nodes. In this presentation, specifically methodologies that have been developed to explore ecological systems (mostly energy flow in food webs) are used to investigate energy, material and water flow in urban networks. In comparison with ecological networks we see that urban metabolism networks do not generate as many mutualistic relations, which gives some insight how to better manage our cities.

Brian D. Fath is Professor in the Department of Biological Sciences at Towson University (Maryland, USA) and Senior Research Scholar at the International Institute for Applied Systems Analysis (Laxenburg, Austria). He has published over 180 research papers, reports, and book chapters on environmental systems modeling, specifically in the areas of network analysis, resilience, and sustainability. He co-authored the books *Foundations for Sustainability: A Coherent Framework of Life–Environment Relations* (2018) and *Flourishing Within Limits to Growth: Following nature's way* (2015). He is also Editor-in-Chief for the journal *Ecological Modelling*. Dr. Fath was the 2016 recipient of the Prigogine Medal for outstanding work in systems ecology, and twice a Fulbright Distinguished Chair (Parthenope University, Naples, Italy in 2012 and Masaryk University, Czech Republic in 2019).





Mrs. Raluca Leordeanu

Title: The global hydrogen market

Raluca Leordeanu joined NEL ASA as VP Business Development effective August 2018. She previously held various leadership positions, including VP Corporate Strategy and Planning at Norsk Titanium AS, a startup in Titanium 3D printing for Aerospace. She has an international experience from McKinsey&Co, where she worked mainly on Renewables and Strategy advising companies on four continents. Mrs Leordeanu holds a Master of European Business Law from Lund University.

Mrs. Nel Hydrogen is a global, dedicated hydrogen company, delivering optimal solutions to produce, store and distribute hydrogen from renewable energy. We serve industries, energy and gas companies with leading hydrogen technology. Since 1927 Nel Hydrogen has proudly developed and continually improved hydrogen plants. Our proven hydrogen solutions cover the entire value chain – from hydrogen production to intermediate energy storage and manufacturing of hydrogen fueling stations, providing all fuel cell electric vehicles with the same fast fueling and long range as conventional vehicles today. The global community demands zero emission solutions. Nel Hydrogen is positioned to build complete, cutting edge hydrogen infrastructure – unlocking the potential of renewables.



Workshop on Smart Energy Systems

24 Jul, 2019, 13:30-15:10, Room: Inspirasjon

Digital technologies permeate modern life, affecting everything from the way we work and travel, to the way we live and play. Over the coming decades, digital technologies are set to make energy systems around the world more connected, intelligent, efficient, reliable and sustainable. Stunning advances in data, analytics and connectivity are enabling a range of new digital applications such as smart appliances, shared mobility, and 3D printing. While digitalization holds great promise to help improve the safety, productivity, efficiency and sustainability of energy systems worldwide, it also raises questions of security, privacy and economic disruption. Digitalized energy systems in the future may be able to identify who needs energy and deliver it at the right time, in the right place and at the lowest cost. But getting everything right will not be easy.

Digitalization is already improving the safety, productivity, accessibility and sustainability of energy systems. But digitalization is also raising new security and privacy risks. It is also changing markets, businesses and employment. New business models are emerging, while some century-old models may be on their way out. As such, policy makers, business executives and other stakeholders increasingly face new and complex decisions, often with incomplete or imperfect information. Adding to this challenge is the extremely dynamic nature of energy systems.



Smarter energy systems require smarter solutions. From the traditional long-lived physical infrastructure planning to balance the supply and demand, recent decades saw fast rising developments in smart grid, electric vehicles, smart charging, renewables integration, energy storage systems and connected devices. As the world is getting more connected through the internet-of-things, the energy systems are forming sophisticated interconnections across countries and regions. With digital technologies changing so rapidly, there are many unknowns about how technology, behavior and policy will evolve over time and how these dynamics will impact interconnected energy systems into the future.

Chairs: Dr. Victor Nian, National University of Singapore

Speakers:

Dr. Rachel Hoo, National University of Singapore, Singapore.

Ms. Christina Kockel, RWTH Aachen University, Germany.

Assoc. Prof. Jun Yuan, Shanghai Maritime University, China



Invited Talk 1: Digitalization and Energy – A Beautiful Marriage with Critical Challenges

Abstract

Over the coming decades, digital technologies are set to make energy systems around the world more connected, intelligent, efficient, reliable and sustainable. Digitalization is already improving the safety, productivity, accessibility and sustainability of energy systems. But digitalization is also raising new security and privacy risks. It is also changing markets, businesses and employment. New business models are emerging, while some century-old models may be on their way out. Using the developments in smart grid as an example, this lecture will provide an overview of policy issues facing the developments in the digital transformation of the energy sector.



Dr. Victor Nian holds a PhD in Mechanical Engineering and a Bachelor in Electrical Engineering with a Minor in Management of Technology, all from the National University of Singapore (NUS). Dr. Nian is a Senior Research Fellow of the Energy Studies Institute (ESI), NUS. Dr. Nian is also the Executive Director of a UNi-LAB on Integrated Systems Analysis

Tools under the “Research & Innovation without Borders” initiative of Applied Energy Journal. Dr. Nian is Immediate Past President of the Engineering Alumni Singapore and Co-Leader of the Nuclear Special Interest Group of the Institution of Chemical Engineers (Singapore). At ESI, Dr. Nian’s research spans across many industrial and economic sectors including petroleum, electricity, cooling and refrigeration, building, transport, water, and nuclear power. Particularly on nuclear power, Dr. Nian’s research covers almost all aspects of nuclear energy including safety, security, and safeguards, policy and regulation, peaceful and strategic use of atomic energy, and technology and industry developments.



Invited Talk 2: Cost Assessment of Solar PV Integrated Energy System based on Projected Energy Demand: 2017 - 2050

Abstract

Power generation investments in Singapore are commercially driven due to its liberalized market environment. Investment decisions of power generation companies on commission timing of new plants, plant capacity and technology type are based on market signals and information from reliable sources. With increasing solar PV integration into the power system, this study aims to present a preliminary study on the future system cost of power sector in Singapore based on projected electricity demand from 2017 to 2050. It is found that the current installed capacity of power plants is more than enough to fulfill the electricity demand in Singapore till 2050 under BAU. Two different scenarios are studied under different plant recommission decisions, results and discussion are as presented in Section 2.4.



Dr. Rachel Hoo is a Research Fellow at the Energy Studies Institute (ESI) of the National University of Singapore (NUS). At ESI, her research is primarily focus on policy and economic analysis of renewable energy integration, which included energy storage system. She holds a PhD from the School of Chemical and Energy Engineering from University of Technology, Malaysia (UTM). She was also one of the participants at IIASA Young Scientist Summer Program at International Institute of Applied System Analysis (IIASA), Laxenburg, Austria in 2016. Her research interest includes system analysis and integrating renewables into energy system.



Invited Talk 3: Reducing Environmental Impacts through a Smart Design of Microgrids: Life Cycle Assessment for AC and DC

Abstract:

Microgrids with integrated renewable energies show promising potentials in terms of reliable, efficient, and clean smart grid concepts. Further improvements are expected when such a microgrid is operated on a direct current instead of an alternating one. Our study aims to systemically analyze the environmental impacts of microgrids operating on ac and on dc using power distribution within office buildings as an example. For this purpose, a comparative and scalable life cycle assessment is conducted based on a technical bottom up analysis of differences between ac and dc microgrids. Particularly, our approach combines the assessment of required power electronic components on a micro-level using a generic grid model on a macro-level. The results indicate that the environmental impacts of employed power electronics can be substantially reduced when utilizing a microgrid operating on dc instead of ac.



Christina Kockel is Research Associate at the Chair for Energy Resources and Innovation Economics at RWTH Aachen University. She works on Energy System Analysis and Life Cycle Analysis as well as on Power-to-X technologies. She graduated in Business Administration and Electrical Engineering at RWTH Aachen University. During her studies, she worked as a student assistant in the strategy and consulting department at the Institute for Automotive Engineering (ika), as an intern in the research and development department at Daimler AG and as a business analyst at a technology consultancy in Detroit, USA. She conducted her master's thesis in cooperation with Forschungszentrum Jülich in the field of life cycle assessment for microgrids.



Invited Talk 4: Ship energy consumption evaluation for mitigation measures using Back-Propagation neural network

Abstract:

As the main mode of transportation for international trade, shipping has a large volume of transportation and low freight rate, but there are problems of large fuel consumption and large emissions. Therefore, it is necessary to take some mitigation measures to save energy and reduce emissions. Many mitigation measures have been proposed based on various factors affecting ship energy consumption. To assess the performance of these mitigation measures, the energy savings of these measures have to be evaluated. Due to the complexity of the ship energy system, these factors are of different importance and may be related each other. In this paper, several influencing factors have been chosen to assess the effects of different mitigation measures on ship energy consumption, including ship conditions (speed, draft, trim, cargo volume) and weather conditions (wind, wave). A chemical tanker is taken as the research object to analyze the ship energy system and an artificial neural network model is applied to predict and evaluate the energy consumption for different mitigation measures. Moreover, various adjustments are made to the neural network structure, and the accuracy of different structures is compared based on their prediction results. The optimal neural network structure is further identified for ship energy consumption's prediction and evaluation.



Jun Yuan received his B.E. degree in Industrial Engineering and Management from Shanghai Jiao Tong University, Shanghai China, in 2008, and the Ph.D. degree in Industrial and Systems Engineering from National University of Singapore, Singapore, in 2013. From 2014-2017, he worked as a research fellow in National University of Singapore. He is currently an associate professor with China Institute of FTZ Supply chain, Shanghai Maritime University. His research interests include energy systems modeling, shipping energy systems, computer simulation, and machine learning.

Workshop on Thermal Engineering

25, Jul, 2019, 8:20-12:10, Room: Inspirasjon

"Thermal processes account for the greatest amount of emissions in the world. From power plants operating on fossil fuels to small scale devices that use carbon-based chemicals, the use of thermal energy has been a continuous challenge to tackle global climate change. Heating applications in buildings and industries are just some of the well-known processes that fall into this category and that require extensive research to mitigate their unwanted impacts towards the atmosphere. Internal combustion engines (i.e. spark, compression or gas turbines) employed for transportation are regarded as the greatest polluting emitter in cities across the world. Similarly, many other processes suffer comparable flaws that unfortunately cannot be eliminated from our current economies. Therefore, reducing emissions from thermal processes is actually one of the greatest challenges of this century. Through the control of heating and/or cooling processes, open or enclosed environments can be improved, thus bringing down unwanted emissions and contributing to the reduction of climate change. Research around the globe is looking at new thermal concepts that are under evaluation to improve overall efficiencies and that employ alternative avenues to maximise the use of resources whilst tackling carbon footprint. Some of these alternatives include the creation of new cycles, development of novel systems and the use of unconventional flow regimes.



Therefore, this session invites papers related to thermal engineering topics (i.e. cycle improvements, combustion stabilisation, heat transfer enhancement, cooling techniques, thermal insulation technologies, bespoke modelling, unconventional hydrodynamic regimes, etc.) that are under evaluation for the design of systems capable to decrease carbon emissions whilst augmenting efficiencies in their corresponding sectors, thus opening the discussion around novel ideas for support of both industry and environment. It is expected that the papers will present innovative paths for the deployment of technologies that can support the transition to large scale units.

Dr. Agustin Valera-Medina

PhD MSc CEng MIMechE FHEA

Gas Turbine Research Centre

Cardiff University

Wales, United Kingdom

PhD MSc CEng MIMechE FHEA



Dr. Agustin Valera-Medina



Dr. Agustin Valera-Medina is an Associate Professor and a leading researcher at Cardiff University, major fields Combustion Dynamics and Thermofluids. His research is based on the topics of fuels, hydrodynamics, flame stabilization, injection, heat transfer and combustion technologies. He has worked in 22 industrial/scientific projects with a total of 124 papers. He has been awarded several international conference awards and innovation prizes, including the prestigious award for "Business Innovation, 2017" and "Sustainable Innovation, 2019" South Wales, UK. Currently, he supports the writing of two Policy Briefings for the Royal Society (UK) and his collaboration expands to more than 30 institutions and 6 scientific councils worldwide.



Invited Talk: Biocarbon-a new black gold?

Abstract:

People have been making biocarbon in the form of charcoal from time immemorial, and have used it throughout history for a variety of purposes because of its many excellent properties. Biocarbon production is a highly promising way for sustainable energy generation and displacing fossil fuel use while combating global climate change at the same time. This lecture will provide an overview of challenges and possible solutions regarding production and utilization of biocarbon with ultimate goal of enabling biocarbon value chain.

Dr. Wang Liang



Dr. Wang Liang is working as Research Scientist (permanent position) in SINTEF Energy Research at Trondheim Norway. He holds a PhD in Thermal Energy from the Norwegian University of Science and Technology at Trondheim Norway. He was granted Chinese Government Award for Outstanding Students Abroad in year 2012 for his outstanding achievement of his PhD study. Dr. Wang started to work as a research scientist in SINTEF Energy Research from year 2010. Dr. Wang's main research focuses are characterization of biomass and wastes using combined analytical instruments and techniques, advanced biomass carbonization technology, experimental and kinetic study of torrefaction, pyrolysis, gasification and combustion of biomass and charcoal, ash chemistry during biomass and waste thermal conversion. Dr. Wang has 77 publications listed in Scopus, and a h-factor of 17. He works as project manager and key researcher in several EU, Nordic and National R&D projects. He has collaboration with key industrial partners, 20 institutions and 6 scientific councils worldwide.



ABOUT STAVANGER

Stavanger, the one of Norway 's ancient is the fourth largest city of Norway, and it also is commercial port and fishing spot in Boknafjorden on Norway's west coast. The city was founded in the 8th century, and its population has never exceeded 2,000 in the following hundreds of years. After a Frenchman established the first sardine canning factory in Stavanger in 1810, the city developed rapidly and finally became the largest sardine canning processing base in Europe, with a sharp increase in population. After 1970s, due to the development of North Sea oil fields, the Stavanger became a base for maintenance and logistics of oil and gas field facilities and ships. Now, the city has become Norway's famous 'North Sea Oil Capital'. The great Stavanger region has witnessed this fast-economic development and became the most vibrant urban area in Norway. The locating of the government renewable energy fund to Stavanger, which aims at providing smart and clean energy solutions, is transforming Stavanger into the "Energy Capital" of Norway.

CLIMATE OF STAVANGER

The Stavanger is rainy season recently, and it is sunny or cloudy occasionally. Stavanger experiences an average temperature range from 11 - 20°C, and the attendees are advised to prepare some warm clothes. And when you go out, the umbrella is essential.



CURRENCY AND BANKING

The currency of Norway is NOK (Norwegian krone). You cannot use other countries' currencies in Norwegian shops, but you can use credit or debit cards in all shops. Currency Krone (NOK); 1 krone is € 0,11; 1 euro is 9.75 NOK (2019.5).

Top banks in Norway:

1. DNB Bank.
2. Bank Norwegian AS.
3. Handelsbanken.

TIME ZONE

Norway is situated in the Central European Time zone (CET), which is GMT +1.

ELECTRICITY

In Norway the standard voltage is 230 V and the frequency is 50 Hz. You can use your electric appliances in Norway, if the standard voltage in your country is in between 220-240 V (as is in the UK, Europe, Australia and most of Asia and Africa).



VENUE INFORMATION

The venue of ICEEE/ISEV2019 is at the Clarion Hotel Stavanger, gate 14 4008 Stavanger, Norway, the superior room of which have an excellent scenery of ancient city and ports. Designed for both business and leisure travel, Clarion Hotel Stavanger is ideally situated in Kannik, one of the city's most popular locales. From here, guests can enjoy easy access to all that the lively city has to offer. We have a special offer for the delegates. The code for room booking is GR008603. We have 50 rooms reserved. The rate is NOK 1.160,- per night for a standard single room, and NOK 1.160,- per night for a standard double room. Guests who would like to book, need to contact our front desk at cl.stavanger@choice.no or by phone (+47) 51 50 25 31, and give this code to the receptionist.



ORAL PRESENTATION

The length of presentation should be in accordance with the allocated time for the authors, which is 20mins including 5mins for Q&A. The authors are requested to load their presentation **10 mins** before the session starts. You are kindly invited to be present in the venue before the session starts. Please also prepare a short bio that the session chairs can use to introduce you.

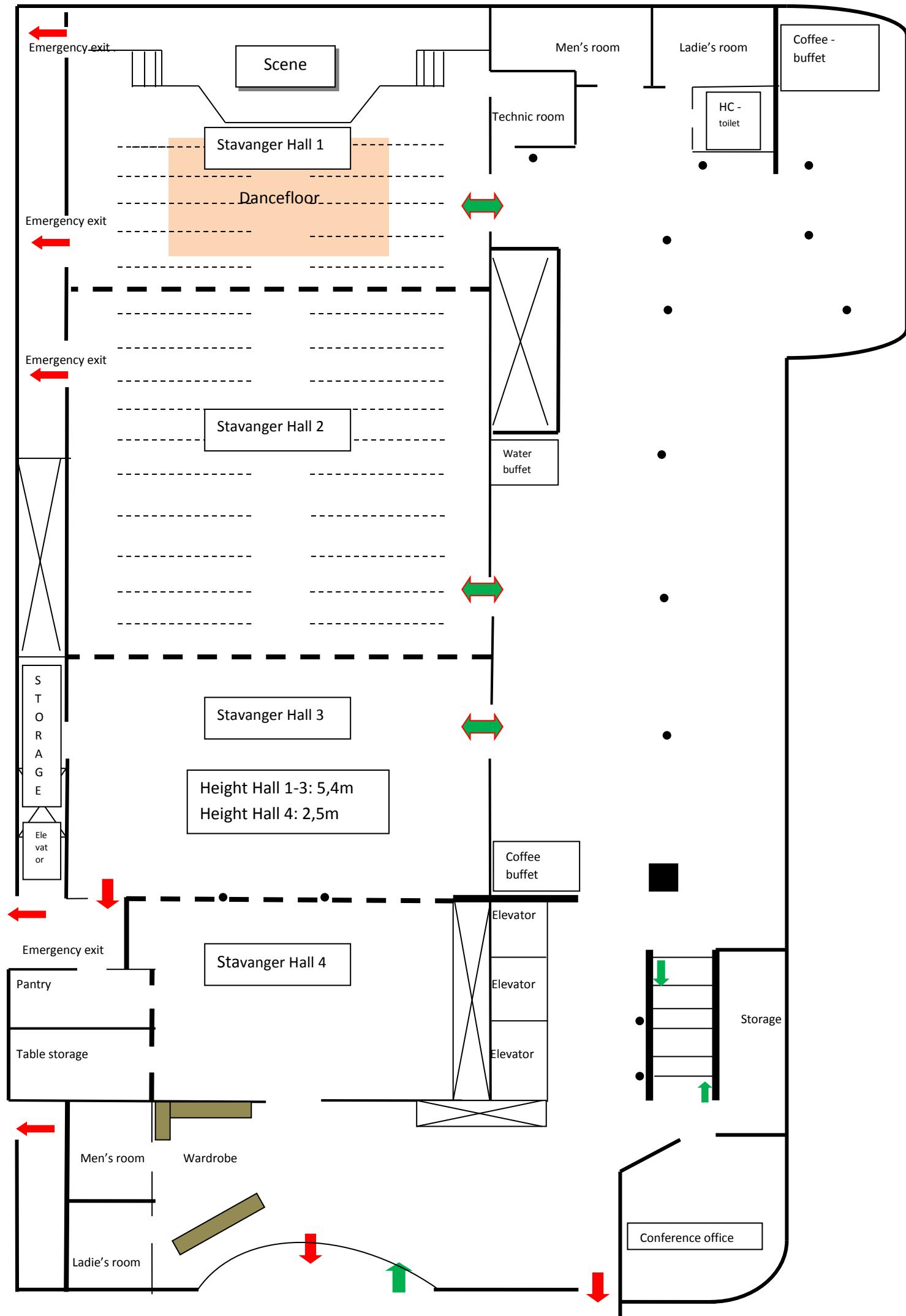
Each presentation room is equipped with a laptop and a projector. PowerPoint is the standard presentation software. Windows is the installed OS. If you have any question, please contact conference volunteers who will help you on site.

PRESENTATION VENUES

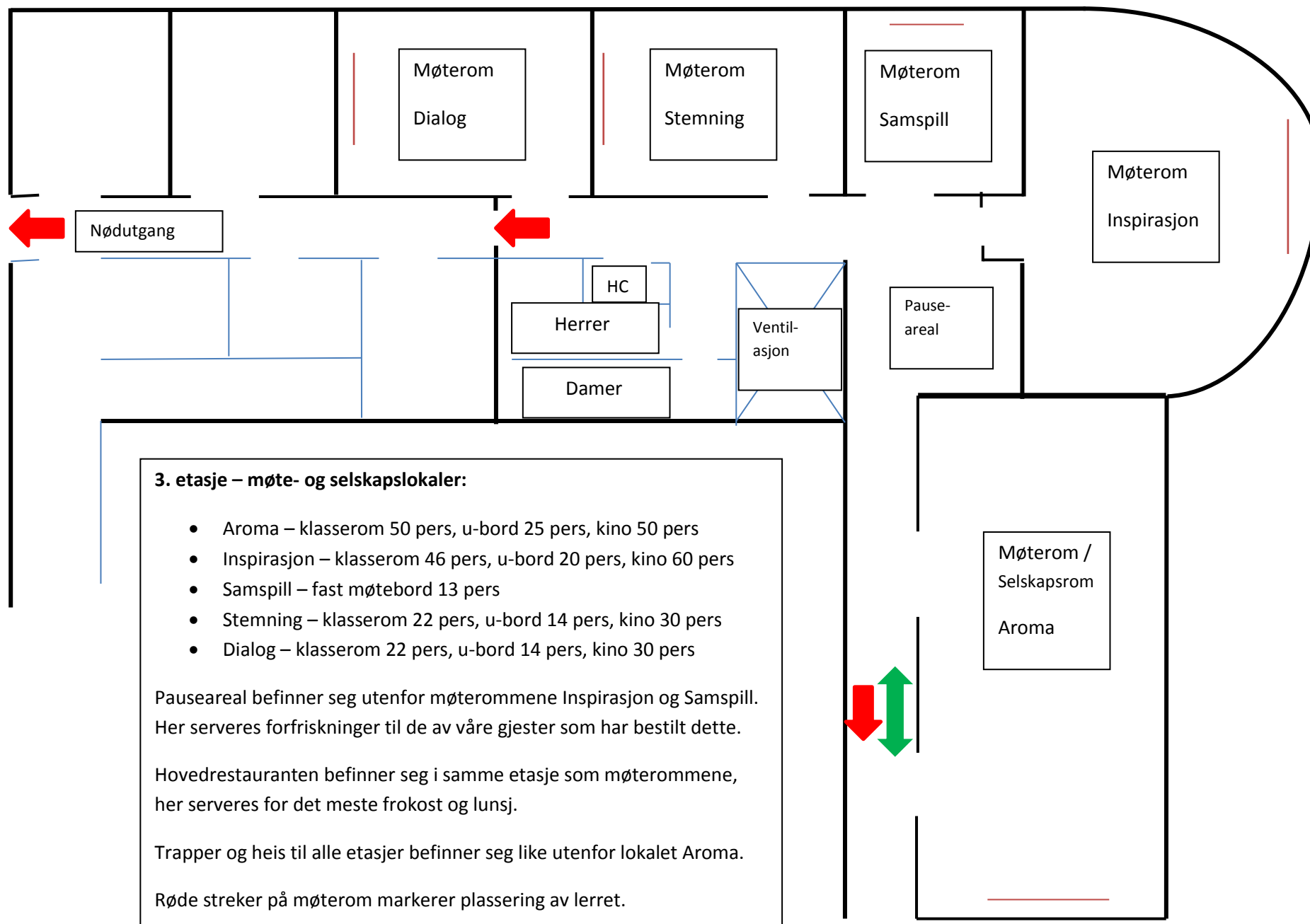
The main conference venues are at Banquet Hall. The following table lists the presentation venues which are used in the detailed program.

Event	Location
Opening	Stavanger Hall 1
Session A	Aroma
Session B	Stemning
Session C	Dialog
Session D	Inspirasjon
Workshop on Smart energy	Inspirasjon
Workshop on Thermal engineering	Inspirasjon



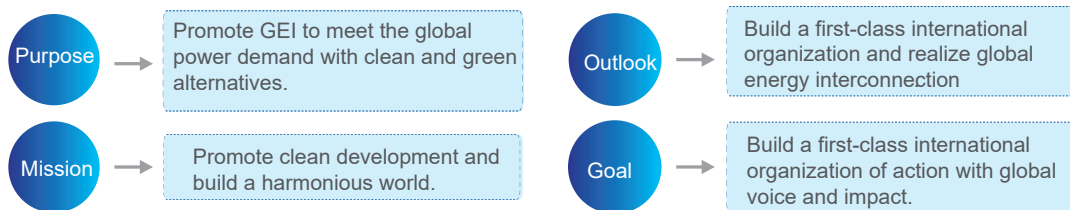


Møteromsoversikt 3. etasje Clarion Hotel Stavanger



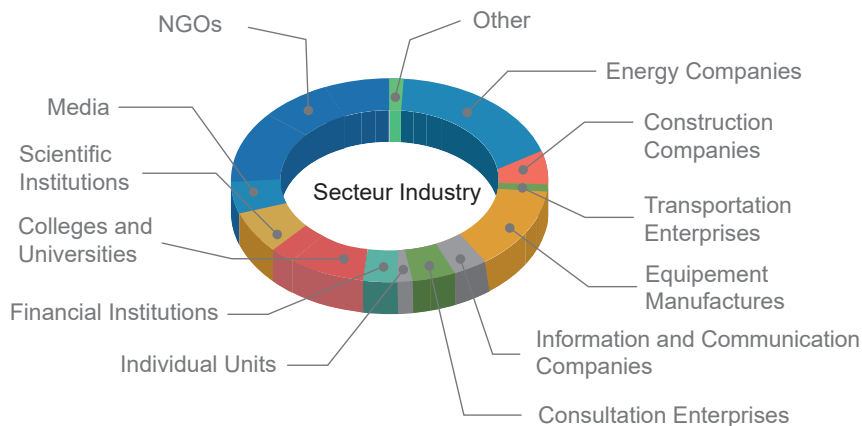


GEIDCO was established on March 29, 2016.



- The number of GEIDCO members has expanded to **over 600** from **93** countries and regions.
- Widespread Concept Organizing Several High-level Events.

Delegations of GEIDCO have visited more than **80** countries to meet with heads of states, ministerial-level officials, leaders of international organizations, associations, corporations and universities, forming broad consensus.

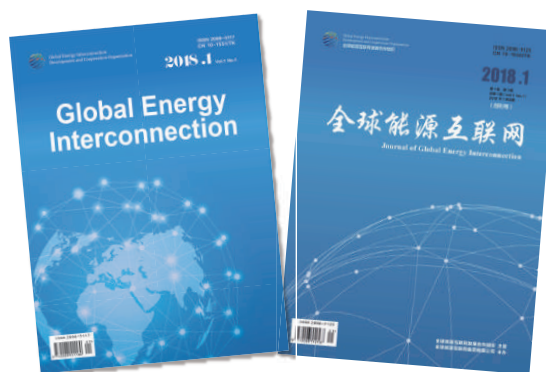


- Establishing Cooperation Networks. GEIDCO has established cooperation relations with more than **260** government departments, international organizations, businesses, research institutions and universities from **70** countries and regions to jointly promote GEI.
- Research Findings



- Academic Journals

On January 31, 2018, the launching ceremony for the Journals of Global Energy Interconnection, both Chinese and Global Editions, was held in Beijing. The two periodicals are established by GEIDCO as forward-looking and authoritative science and technology academic journals specialized in the field of energy and power. The inauguration of these two journals aims to build a pioneering academic platform to better promote the advanced technology and concept of GEI, facilitate the exchange and application of key technologies and major achievement, and provide guidance for the innovative development of GEI.



PROGRAM AT A GLANCE

Registration: July 23: 15:00-17:00; July 24:8:00-12:00, 13:30-17:00; July 25:8:00-12:00				
Time	Day1 July 24			
9:00-9:30	Welcome (Stavanger Hall 1)			
9:30-10:10	Keynote1			
10:10-10:40	TEA/COFFEE BREAK			
10:40-11:20	Keynote2			
11:20-12:00	Keynote3			
12:00-13:30	LUNCH			
afternoon	Aroma	Stemning	Dialog	Inspirasjon
13:30-15:10	BMM	EEE	VTS	WORKSHOP 1
15:10-15:40	TEA/COFFEE BREAK			
afternoon	Aroma	Stemning	Dialog	Inspirasjon
15:40-17:00	BMM	EEE	VTS	EO&M
Time	Day2 July 25			
Morning	Aroma	Stemning	Dialog	Inspirasjon
8:20-10:00	BMM	EEE	VTS	WORKSHOP2
10:00-10:30	TEA/COFFEE BREAK			
Morning	Aroma	Stemning	Dialog	Inspirasjon
10:30-12:10	EO&M	EO&M	VTS	WORKSHOP2
12:10-13:30	LUNCH			
Afternoon	Stemning		Dialog	Inspirasjon
13:30-15:10	VTS		BMM	EEE
15:10-15:40	TEA/COFFEE BREAK			
18:30	BANQUET SITE: PETROLEUM MUSEUM			

BMM= Battery Modeling and Management
 EEE= Energy, Ecology and Environment
 VTS= Vehicular Transmission System
 EO&M= Energy Optimization and Management
 WORKSHOP1=Workshop on Smart Energy System
 WORKSHOP2=Workshop on Thermal Engineering



ORAL PRESENTATION

DAY 1

Day1 July 24	
Room: Stavanger Hall 1	
9:00-9:30	<p>Welcome to ICEEE 2019</p> <p>Conference Chair: Prof. Zhixin Yu and Prof. Bin Chen</p> <p>Welcome to ICEIV 2019</p> <p>Conference chair: Prof. Rui Xiong</p>
9:30-10:10	<p>Keynote1: Aggregators: a new regime for mobilization of distributed energy resources</p> <p>Prof. Liz Varga</p>
10:10-10:40	TEA/COFFEE BREAK
10:40-11:20	<p>Keynote2: Ecological network analysis: methods to reveal indirect pathways, application to urban metabolism</p> <p>Prof. Brian Fath</p>
11:20-12:00	<p>Keynote3: The global hydrogen markets</p> <p>Mrs. Raluca Leordeanu</p>
12:00-13:30	LUNCH



ORAL PRESENTATION

DAY 1

Day1 July 24

Room: Aroma

Session title: Battery Modeling and Management

Session chair: Jiahuan Lu, Jun Xu

Time	Paper ID	Author	Title
13:30-13:50	2	Zeyu Chen, Xue Cai Bo Zhang, Rui Xiong	Impacts of external short circuit on lithium-ion battery performance under different duration time
13:50-14:10	25	Xue Cai, Yifeng Zhao Zeyu Chen, Bo Zhang	AEKF-based method of SOC estimation for batteries under the active short-time external short circuit
14:10-14:30	34	Wenwei Wang, Yiding Li, Cheng Lin, Zhipeng Zhang Fenghao Zuo	Equivalent mechanical model for cylindrical lithium-ion battery under mechanical abuse and soft short-circuit failure warning
14:30-14:50	83	Xiaojun Zhang, Xiaoyu Li, Jindong Tian Yong Tian, Yu Liang	State of charge estimation for a series connected lithium ion supercapacitor module
14:50-15:10	85	Teng Long, Xiaoyu Li Jindong Tian Yong Tian, Lijuan Xiang	Parameter identification for lithium ion supercapacitor based on a modified RLS method

15:10-15:40

TEA/COFFEE BREAK

Room: Aroma

Session title: Battery Modeling and Management

Session chair: Xiaogang Wu, Hao Lei

Time	Paper ID	Author	Title
15:40-16:00	49	Tiantian Lin, Ziqiang Chen Changwen Zheng	Fault diagnosis of lithium-ion battery system based on hybrid system and recursive least squares-extended kalman filter
16:00-16:20	37	Jun Xu, Cheng Peng Xuesong Mei	A modularized cell to cell battery balancing system
16:20-16:40	51	Haitao Wang, Tao Tao, Jun Xu, Xiaoyan Liu Piao Gou Xuesong Mei	A novel modular liquid-cooled battery thermal management for cylindrical lithium-ion battery module
16:40-17:00	89	Chunyu Wang, Naxin Cui, Changlong Li	State estimation method of lithium-ion battery based on electro-thermal model and strong tracking particle filter

ORAL PRESENTATION

DAY 1

Day1 July 24

Room: Stemning

Session title: Energy, Ecology and Environment

Session chair: YuKun Hu, Mohan Kolhe

Time	Paper ID	Author	Title
13:30-13:50	4	Yee Van Fan Jiří Jaromír Klemes	Energy transition for sustainable transportation system: graphical approach
13:50-14:10	114	Wen Liu	Exploring the pathways towards a sustainable heating system – a case study of Utrecht
14:10-14:30	15	Lorenzo Riva, Henrik Kofoed Nielsen Videm Buø, Hewen Zhuo, Qing Yang Haiping Yang, Oyvind Skreiberg Liang Wang, Pietro Bartocci Marco Barbanera Francesco Fantozzi	LCA analysis of biocarbon pellet production to substitute coke
14:30-14:50	21	Mohammed Jalal Alshwaikh Qing Yang	Life cycle water use for oxy fuel combustion power generation with CO2 capture and storage
14:50-15:10	42	Xu Xiao, Zi-Rui Chen Pu-Yan Nie	A comprehensive subsidy for consumers: an expansion of theoretical discrete-choice model

15:10-15:40

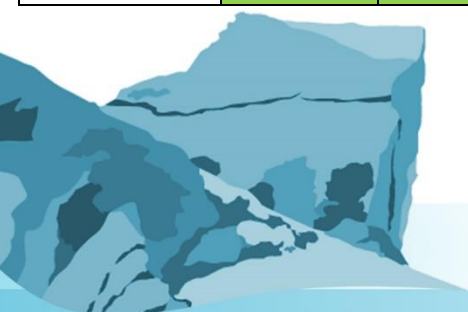
TEA/COFFEE BREAK

Room: Stemning

Session title: Energy, Ecology and Environment

Session chair: Rachel Hoo, Agustin Valera-Medina

Time	Paper ID	Author	Title
15:40-16:00	76	Shilun Zhou,Wanchang Zhang	Spatial-temporal variations in vegetation and their driving factors in the Amur River Basin
16:00-16:20	138	Yukun Hu	Feasibility study of biomass gasification integrated with reheating furnaces in steelmaking process
16:20-16:40	28	Zibo Yu, Xin Tian, Junhong Bai Yanan Guan, Liehui Zhi	Emergy-based industrial structural optimization of wetland resources in Dongying City, China
16:40-17:00	57	Huiran Gao, Wanchang Zhang Hao Chen	Remote sensing monitoring and numerical simulation coupling studies on Frozen Soil in Cold Regions



ORAL PRESENTATION

DAY 1

Day1 July 24

Room: Dialog

Session title: Vehicular Transmission System

Session chair: Wanzhong Zhao, Xiaoyu Li

Time	Paper ID	Author	Title
13:30-13:50	5	Ying Yang Zhen Wang	Analysis of simplified electrochemical model for lithium battery in electric vehicles
13:50-14:10	6	Zeyu Chen, Yifeng Zhao Xue Cai, Zhen Wang	Study on regenerative braking control strategy for the dual-axle distributed drive electric vehicles
14:10-14:30	7	Chunxiang Zhang, Zaizhou Wang Qiang Song, Chengning Zhang	Matching design and optimization research of gearbox for electric vehicle
14:30-14:50	55	Liangyu Bai Yanmin Liu	A rotation face to face through-hole wireless power transfer system for space applications
14:50-15:10	52	Fang Cao, Cheng Lin Sheng Liang, Jian Chen	Yaw stability control based on hMPC for dual-motor driven electric vehicles
15:10-15:40	TEA/COFFEE BREAK		

Room: Dialog

Session title: Vehicular Transmission System

Session chair: Chengming Zhang, Yongzhi Zhang

Time	Paper ID	Author	Title
15:40-16:00	13	Guobiao Shi, Qian Zhou Shuai Wang	Matching analysis and optimization design of energy-saving intelligent electro-hydraulic hybrid steering system
16:00-16:20	17	Meilan Zhou, Mingliang Yang Xiaogang Wu	Research on control strategy of Quasi-Z source network DC/DC converter for Fuel Cell Vehicle
16:20-16:40	27	Guangcai Tang, Jun Wang Aihua Tang	Research on lightweight carbon fiber roof of a blade electric vehicles
16:40-17:00	39	Wenwei Wang, Zhipeng Zhang, Yiding Li and Yue Gao	Lane Detection Using CNN-LSTM with Curve Fitting for Autonomous Driving

ORAL PRESENTATION

DAY 1

Day1 July 24

Room: Inspirasjon

Workshop on Smart Energy System

Session chair: Victor Nian

Time	Paper ID	Author	Title
13:30-15:10	Invited Talk 1	Victor Nian	Digitalization and Energy – A Beautiful Marriage with Critical Challenges
	Invited Talk 2	Rachel Hoo	Cost Assessment of Solar PV Integrated Energy System based on Projected Energy Demand: 2017 - 2050
	Invited Talk 3	Christina Kockel	Reducing Environmental Impacts through a Smart Design of Microgrids: Life Cycle Assessment for AC and DC
	Invited Talk 4	Jun Yuan	Ship energy consumption evaluation for mitigation measures using Back-Propagation neural network
15:10-15:40	TEA/COFFEE BREAK		

Room: Inspirasjon

Session title: Energy Optimization and Management

Session chair: Alexandros Flamos, Jun Yuan

Time	Paper ID	Author	Title
15:40-16:00	113	Arvind Sharma Mohan Kolhe	Performance Analysis of Institutional Hybrid Energy System due to Electrical Energy Tariffs
16:00-16:20	12	Victor Nian	Digitalization and Energy – A Beautiful Marriage with Critical Challenges
16:20-16:40	137	Pietro Elia Campana	Towards An Optimal Irrigation Management System from the Water-Food-Energy Nexus Perspective
16:40-17:00	65	Chi Xu, Wanchang Zhang Hao Chen, Huiran Gao	Analysis of water storage descent from 1960 to 2018 in Daihai Lake, China



ORAL PRESENTATION

DAY 2

Day2 July 25

Room: Aroma

Session title: Battery Modeling and Management

Session chair: Chao Lyu, Yongzhi Zhang

Time	Paper ID	Author	Title
8:20-8:40	128	Yong Tian, Zhibing Zeng, Lijuan Xiang, Xiaoyu Li Jindong Tian	Comparative study of four filter-based algorithms for state-of-charge estimation of lithium-ion batteries
8:40-9:00	104	Xinggong Li Hongwen He	A Research on online Temperature Estimation of Battery Pack Based on Neural Network Model
9:00-9:20	108	Yong Tian, Zhibing Zeng Xiaoyu Li, Lijuan Xiang Jindong Tian	Experimental study on the thermal characteristics of the lithium-ion battery during the aging cycles
9:20-9:40	102	Xiaopeng Tang, Ke Yao, Boyang Liu, Furong Gao	Connection Failure Detection for Lithium-ion Batteries Based on DBSCAN-Projection Method
9:40-10:00	125	Jiabo Li, Min Ye, Shengjie Jiao, Dawei Shi, Xinxin Xu	State Estimation of Lithium Battery Based on Least Squares Support Vector Machine
10:00-10:30	TEA/COFFEE BREAK		

Room: Aroma

Session title: Energy Optimization and Management

Session chair: Bo Zhang, Sanmang Wu

Time	Paper ID	Author	Title
10:30-10:50	9	Hao Zhang, Yifeng Zhao Zeyu Chen, Bo Liu	Research on the Impact of Electricity Price fluctuation on Energy Management Strategy
10:50-11:10	11	Jiang Zhu Jun Yuan	Ship energy consumption evaluation for mitigation measures using Back-Propagation neural network
11:10-11:30	139	Jakub Jurasz, Jingjing Song, Wandong Zheng, Prajwal H. Ramakrishna, Hailong Li	Cost competitiveness of individual air-source heat pumps in district heating dominated markets
11:30-11:50	58	Qingxi Huang, Luyao Liu Qie Sun Ronald Wennersten	A cooperative model for microgrids based on interbank lending method
11:50-12:10	59	Yu Wang Qie Sun	Qualitative data analysis of the energy transition of urban buildings in China

ORAL PRESENTATION

DAY 2

Day2 July 25

Room: Stemning

Session title: Energy, Ecology and Environment

Session chair: Pietro Elia Campana, Xin Tian

Time	Paper ID	Author	Title
8:20-8:40	48	Chunsheng Wang, Jiamin Li, Yukun Hu, Xin Zhang Liz Varga	Frequency Control of a Hybrid Isolated Microgrid based on Equivalent-input-disturbance Method
8:40-9:00	44	Xiaojia Fan, Sanmang Wu Shantong Li	Comprehensive Evaluation of Value-added Acquisition and Carbon Emissions Undertaken by Resource-based Provinces in the Global Value Chain, taking Shanxi Province as an example
9:00-9:20	45	Qiuping Li Sanmang Wu	Changes and driving forces of indirect CO2 emissions from household consumption in China ——based on an international comparative perspective
9:20-9:40	88	Liehui Zhi, Xiaowen Li, Junhong Bai, Yanan Guan, Yu Zibo, Xu Xie	Integration of ecological and economic-social networks by nitrogen metabolism: a case study China's Yellow River delta region
9:40-10:00	67	Chi Xu, Wanchang Zhang, Hao Chen, Xiangyang Li	Estimation and analysis of the ecological flow in the lower reaches of the Yellow River Basin
10:00-10:30	TEA/COFFEE BREAK		

Room: Stemning

Session title: Energy Optimization and Management

Session chair: Liang Wang, Rachel Hoo

Time	Paper ID	Author	Title
10:30-10:50	94	Luyao Liu	Characterizing and Forecasting Medium and Long-term Electricity Price Volatility
10:50-11:10	110	Alexandros Flamos	DREEM: A new dynamic high-resolution demand-side management model for quantifying benefits of demand-flexibility in the building sector
11:10-11:30	135	Huong Lan Huynh, Xinhai Yu Zhixin Yu	High-yield preparation of Ni-Fe supported catalysts for CO2 methanation
11:30-11:50	29	Chao Lyu, Lulu Zhang, Junfu Li, Yanben Zhao, Yankong Song Lixin Wang	A Life-cycle State of Charge Estimation by Using a Simplified Electrochemical Model in the Dual Adaptive Extended Kalman Filter Framework
11:50-12:10	115	S.Neda Naghshbandi, Liz Varga Yukun Hu	Components of a Technology Roadmap for Automated Excavation

ORAL PRESENTATION

DAY 2

Day2 July 25

Room: Dialog

Session title: Vehicular Transmission System

Session chair: Yonggang Liu, Aihua Tang

Time	Paper ID	Author Junhui	Title
8:20-8:40	136	Yongzhi Zhang Xiaobo Qu	Model predictive speed control of electric vehicles to improve the battery life and energy efficiency
8:40-9:00	41	Aihua Tang Bo Huang	Lithium-ion Battery SoC Estimation of an order-reduced electrochemical model Using SMO-ERL in EVs
9:00-9:20	47	Qingchao Song, Jiawei Chen, Mi Tan, Jian He, Kuncheng Cai	A Decentralized Energy Management Strategy of Fuel Cell-Ultracapacitor Hybrid Vehicle
9:20-9:40	112	Ya-Xiong Wang, Jinzhou Chen, Shengwei Quan, Hongwen He	Air Supply System Control of PEM Fuel Cell for Electric Vehicle Application Based on Multi-layer Prediction Strategy
9:40-10:00	71	Zhongyue Zou, Jun Xu, Xuesong Mei, Fankang Zeng	A Hybrid Energy Storage System for Dual-Motor Driven Electric Vehicle
10:00-10:30	TEA/COFFEE BREAK		

Room: Dialog

Session title: Vehicular Transmission System

Session chair: Yong tian, Min Ye

Time	Paper ID	Author	Title
10:30-10:50	95	Haiyang Lin	The Smart Charging and Vehicle to Grid Capacity of Electric Vehicles with Multiple Impact Factors
10:50-11:10	99	Jiahuan Lu	Remaining Useful Life Prediction Driven by Multi-source Data for Batteries in Electric Vehicles
11:10-11:30	134	Yan Wu, Fang Li Lifang Wang	Intelligent Vehicle Path Tracking Control Based on Moving Horizon Sliding Mode Control
11:30-11:50	78	Zhijia Huang, Xiaoyu Li, Jindong Tian, Yong Tian Lijuan Xiang	Comparative Analysis of Lithium ion Supercapacitor Models for Electric Vehicle
11:50-12:10	56	Yonggang Liu, Xiao Wang, Liang Li, Shuo Cheng Zheng Chen	A pragmatic dynamic lane-changing trajectory planning model for autonomous vehicles

ORAL PRESENTATION

DAY 2

Day2 July 25

Room: Inspirasjon

Workshop on Thermal Engineering

Session chair: Agustin Valera-Medina

Time	Paper ID	Author	Title
8:20-10:00	Invited Talk	Liang Wang	Biocarbon-a new black gold?
	63	Tian Zhang Wanchang Zhang	CO2 Capture and Storage (CCS) monitoring based on remote sensing method: A review.
	68	Ablay Saparov, Ehsan Mostafavi, Yerbol Sarbassov, Botakoz Suleimenova, Vassilis Inglezakis,Dhawal Shah	Modeling of the low grade coal combustion in a fluidized bed reactor using Aspen Plus.
	97	Aniekan Okon, Ogbonnaya Agwu, Agustin Valera-Medina, Ali Al-Zughaibi, Chong Cheng Tung	Stable combustion under carbon dioxide enriched methane blends for Exhaust Gas Recirculation (EGR)

10:00-10:30

TEA/COFFEE BREAK

Room: Inspirasjon

Workshop on Thermal Engineering

Session chair: Agustin Valera-Medina

Time	Paper ID	Author	Title
10:30-12:10	8	Atul Rawat, Summet Gupta Joji Rao	Sustainable Development through Natural Gas Network Development in India
	14	Hewen Zhuo, Qing Yang, Mengmeng Shi, Jiashuo Li, Haiping Yang, Federica Liberti, Pietro Bartocci Francesco Fantozzi	LCA analysis of anaerobic digestion plant fed with canteen food waste in a university in China
	24	Odi Fawwaz Alrebei, Ali Al Doboan, Philip Bowen Agustin Valera Medina	Techno-economics of CO2-Argon-Steam Oxy-Fuel (CARSOXY) Gas Turbines.
	36	Yu Fu	Multi-objective optimization for electric and thermal energy storage of integrated energy system under uncertainty

ORAL PRESENTATION

DAY 2

Day2 July 25

Room: Stemning

Session title: Vehicular Transmission System

Session chair: Xiaoyu Li, Xiaopeng Tang

Time	Paper ID	Author	Title
13:30-13:50	87	Menglin Li, Hongwen He, Jiankun Peng, Yong Chen Mei Yan	Predictive Energy Management for Hybrid Electric Vehicle Considering Driver's Intention
13:50-14:10	82	Yonggang Liu, Junjun Liu, Datong Qin, Zheng Chen	Multi-Objective Optimization Energy Management Strategy for Fuel Cell Hybrid Vehicles Based on Rule Learning
14:10-14:30	90	Shuangqi Li Hongwen He	A Cloud-based aging considered Vehicle-mounted lithium-ion battery management method: A big data perspective
14:30-14:50	30	Chao Lyu, Yi Sheng, Boyan Xia Tao Zhang, Yankong Song Lixin Wang	Thermal Simulation and Optimization for an Air-Cooling Lithium-ion Battery Pack
14:50-15:10	119	Chengming Zhang, Jiwei Cao, Qingbo Guo, Mingyi Wang Jiaxi Liu	Efficiency Optimization Control of Direct Drive Permanent Magnet Synchronous Motor



ORAL PRESENTATION

DAY 2

Day2 July 25

Room: Dialog

Session title: Battery Modeling and Management

Session chair: Lifang Wang, Jun Xu

Time	Paper ID	Author	Title
13:30-13:50	117	Zheng Chen, Qiao Xue, Yonggang Liu, Jiangwei Shen Renxin Xiao	State of Health Estimation for Lithium-Ion Batteries Based on Elman Neural Network
13:50-14:10	118	Zheng Chen, Jiapeng Xiao, Hengjie Hu, Yonggang Liu, Jiangwei Shen, Renxin Xiao	Lithium-ion Battery Capacity Estimation Based on a Adaptive Model Algorithm With Aging Test
14:10-14:30	124	Hao Lei, Xiaokai Chen Rui Xiong	A Novel Method for Estimating State-of-Charge of Lithium-ion Battery Pack Based on General Open Circuit Voltage
14:30-14:50	126	Sijia Yang, Jiuchun Jiang Caiping Zhang Weige Zhang, Yang Gao	A novel state-of-charge correction and online capacity estimation for lithium-ion batteries in full life cycle
14:50-15:10			

Room: Inspirasjon

Session title: Energy, Ecology and Environment

Session chair: Zeyu Chen, Wanchang Zhang

Time	Paper ID	Author	Title
13:30-13:50	84	Yanan Guan, Junhong Bai, Xin Tian, Liehui Zhi, Zibo Yu	An integrated model for ecological and socio- economic networks: the case study of a typical wetland city in China
13:50-14:10	140	Jinduo Yao, Shengchun Liu Hailong Li, Yukun Hu	An Experimental Study on Compressed Carbon dioxide Energy Storage
14:10-14:30	133	Min Xie Yonghui Xie	Exergy and Exergoeconomic Analyses Based on Recompression Cycle of the Supercritical CO ₂ Brayton Cycle for Sodium-cooled Fast Reactor
14:30-14:50	142	Liang Wang, Maria Olsen, Alice Budai, Daniel Rasse and Oyvind Skreiberg	Production and Characterization of Biochar from Spruce Wood and Bark under Different Pyrolysis Conditions
14:50-15:10	143	Bo Zhang	



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