



## CUE2015-Applied Energy Symposium and Summit 2015:

### Low carbon cities and urban energy systems

### **Conference Program**

Nov 15-17 : Fuzhou





# Applied Energy Celebrating **40 years** of innovation in energy research

### Editor-in-Chief **Professor J. Yan**



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Editor in Chief: J. Yan



2014 Impact Factor'

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Applied Energy Symposium and Summit 2015

### Contents

- Welcome to CUE2015
- Committee
- Keynotes Speakers
- Venue Map and Rooms
- Speaker's Guide
- Practical Guide
- Acknowledgements
- Program at a Glance
- Oral Presentation Program
- Poster Presentation Program





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### **Over 6000 papers** published, with authors from 60 countries

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

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### Welcome to CUE 2015

Cities are responsible for approximately three-quarters of the world's energy consumption and they therefore play a major role in energy issues such as economic security and climate change. The CUE2015, with theme of "power your city with clean, affordable & reliable energy", is to provide a platform focused on urban energy systems, covering the topics of energy supply, distribution, and end use; smart eco-cities, urban transportation with efficient energy and low emissions; microgrid and smart home; BIPV and renewable applications; urban waste to energy; nexus of energy-water; and policy options etc.

The event consists of two-day symposium for sharing the most recent progress of research in urban energy systems and one-day summit to engage all stakeholders for discussing how future urban energy systems can be implemented.

The CUE2015 is organized by the international journal, Applied Energy, Applied Energy Innovation Institute and China Association for Science and Technology HOME Program (CAST/HOME) and hosted by Fujian Association for Science and Technology and co-organized by Chinese Society of Engineering Thermophysics, Beijing Institute of Technology, Future Energy Profile/Mälardalen University Sweden. We are looking forward to meeting you in Fuzhou, China.

#### **Conference Chairs**

Prof. J. Yan Editor-in-Chief of Applied Energy Prof. S.K. Chou Editor of Applied Energy

### Committee

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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 enviromental 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 Sytems in the Built Environment).



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# FUTURE ENERG

### RESEARCH THAT PROVIDES VALUE AND BENEFIT

Mälardalen University invest in research which generates beneficial solutions for societal development.

### **COOPERATION** FOR THE **BENEFIT** OF ALL

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900 employes, 71 professors, 447 teachers, 213 docoral students; 69 are financed externally.

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MÄLARDALEN UNIVERSITY (abbreviated MDH) is one of Sweden's large institutes of higher education. The University has over 13,000 students studying our 51 programmes and 1,000 courses, and 900 faculty and staff. The University, with its campuses in Eskilstuna and Västerås, is characterised by its close cooperation with companies and with the public sector in the region and by its distinct environmental profile.

Thanks to our partnerships with international companies such as ABB, Volvo and Bombardier and HEIs all around the world, we offer an international study and working environment.





**Prof. Ben Schwegler** 

#### Benedict R. Schwegler, Jr., Ph.D., M.ASCE, is Vice President and Chief Scientist of Walt Disney

Keynote: Integrated infrastructure: a new way to design low carbon cities

Imagineering (WDI) Research & Development, where he created and manages the Simulation-based Design Group. The overall goal of this team is to improve Disney's ability to simulate, predict, and manage the project delivery process to enable sustainable design and engineering of the built environment. He is also director of the Disney Research China lab. Ben was the recipient of the 2002 Henry R. Michel Award from the American Society of Civil Engineers (ASCE) and was awarded the Orange County (California) Engineering Council's Outstanding Project Management Award for 2001. Ben is on the Board of Directors of the Jet Propulsion Laboratory's Technical Divisions Advisory Board. He is also a Consulting Professor of Civil and Environmental Engineering at Stanford University, where his current research focuses on the adaptation of the built environment to climate change. He has been involved in nearly all of Walt Disney Imagineering's construction projects over the past 20 years. Ben's doctorate is from University of California, Los Angeles.

Prof. Hao Wang

#### Keynote: Developing Sustainable water urban systems in China

Dr. Hao Wang is the Academician of Chinese Academy of Engineering. He is Honorary Director of the Department of Water Resources and Deputy Director of the Water Conservancy Committee, the Academic Commission of China Institute of Water Resources and Hydropower Research (IWHR) and a member of the Science & Technology Committee of the Ministry of Water Resources (MWR). He is a visiting professor at Tsinghua University, Wuhan University, Northwest Agriculture and Forestry University, China University of Geosciences et al. He also serves as Vice President of Global Water Partnership-China, Deputy Director of China Natural Resources Society, Executive Director of Chinese Society for Sustainable Development and Director of the Sub-Committee on Water Issues, Executive Director of Chinese Hydraulic Engineering Society and Vice Director of the Committee on Hydrology, Executive Director of China Society of Forestry, and a Member of the Appraisal Committee of Excellent Candidates at National Level from Millions of Engineering. Prof. Wang has been engaged in research on hydrology and water resources for more than 40 years. He has made a series of achievements in the field of simulation of river basin water cycle processes; water resources evaluation, planning, allocation and dispatch; theory and calculating methodology for ecological water requirements; theory and practice of water price, water resource management; and the development of a water-conservation-oriented society. Prof. Wang has published over 200 papers and 16 monographs, of which the book entitled Study on the Rational Allocation and Carrying Capacity of Water Resources in the Northwestern Region won the National Award for an Outstanding Book and the Henan Provincial Honorary Award for an Outstanding Book. Prof. Wang has received the 1st prize of National Science and Technology Progress Award; the 2nd prize of National Science and Technology Progress Award for 6 times; the 1st prize of the Ministry of Water Resources' Award for Outstanding Contribution to the Advancement of Science & Technology for more than 10 times. He also won the Green Technology Award issued by United Nations Habitat Environment Agency.



Prof. Hongguang Jin

#### Keynote: Distributed energy system for sustainable urbanization

Prof. Hongguang Jin is the academician of Chinese Academy of Sciences, President of Board of Executive Council of Chinese Society of Engineering Thermophysics (CSET), and Associate Editor of the Journal of Applied Energy. Prof. Jin has been carrying out research focused on thermophysics, chemical engineering, simulation of energy-conversion processes, analysis and optimization of energy systems, and system synthesis for distributed energy system, polygenration system and solar thermal power systems. He is principal investigator of power generation plant with chemical – looping combustion for CO<sub>2</sub> capture. He has received a couple of prizes including the 2nd prize of national natural science award in 2009 and HLHL Prize in 2011.



Mr. Jianxin Hu

#### Keynote: Green wisdom and smart transformation

Mr. Jianxin Hu is the chief sustainability officer (CSO) of China Merchants Property Development. He is also a professor and senior engineer, and active member of several green ecological organizations, engaging in the R&D and management in the business sector of construction and the real estate industry for more than 30 years. Mr. Hu has been in long-term commitments to R&D, demonstration and implementation of green habitat concept. He has led a number of green habitat projects, such as Taige residence buildings in Shenzhen, the first Green Building in greater China with the LEED certification in 2005, and "The Hills in Guangzhou" project which won the first Habitat Business Awards for best practices of the United Nations in 2009.



**Prof. Jiang Wu** 

#### Keynote: Planning towards a green city: Shanghai as a case

Prof. Jiang Wu, planner and 1st class registered architect of China, now the Vice President of Tongji University, Shanghai. He is the chairman of Shanghai Urban Planning Society and vice chairman of Shanghai Architecture Society, and the Steering Council Member of the Architecture Society of China (ASC). From 2011, he was elected as the chairman of the Global University Partnership for Environment and Sustainability in Nairobi (GUPES). He is also the editorial committee member of several top academic journals such as TIME + ARCHITECTURE (Tongji University), WORLD ARCHITECTURE (Tsinghua University), URBAN PLANNING FORUM (Tongji University), PUBLIC ARTS (Shanghai University) and Shanghai Urban Planning Review. Wu got his degrees of Bachelor, Master and Doctor from the College of Architecture and Urban Planning in Tongji University. He has been teaching history and theory of architecture, urban design, and historical preservation in Tongji University from 1986 to 2003. From 2003 to 2008, Wu was the deputy director general of Shanghai Municipal Urban Planning Administration Bureau. He has been a visiting scholar in the University of Hong Kong from 1993 to 1994, and a senior visiting scholar in the Graduate School of Design of Harvard University from 1996 to 1997. In the past 20 years, Wu has published more than 10 books and more than 60 articles in his research fields.

### Venue Map and Rooms









### 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 15 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 opening ceremony and keynote speeches will be held at the JIN DU Banquet Hall (3<sup>rd</sup> floor). The main conference venues are at the third Floor of the Empark Grand Hotel. The following table lists all the presentation venues with abbreviations which are used in the detailed programs in the late part of this booklet. The lunch will be in Jinfu Hall and the coffee break will be outside each conference room.

Venue Room	Location
Session 1-A1, Session 1-A2	The First Meeting Room
Session 1-B1, Session 1-B2	The Second Meeting Room
Session 1-C1, Session 1-C2	International Conference Hall
Session 2-A1, Session 2-A2	The First Meeting Deers
Session 2-A3, Session 2-A4	The First Meeting Room
Session 2-B1, Session 2-B2	
Session 2-B3, Session 2-B4	The Second Meeting Room
Session 2-C1, Session 2-C2	
Session 2-C3, Session 2-C4	VIP Meeting Room

### **Practical Guide**

#### Hotel address and contact information

Address: No. 59, Wenquangongyuan Road, Gulou District, Fuzhou, Fujian, China Tel: 0591-87088888 Fax : 0591-87088999

#### How to get to Empark Grand Hotel

#### From Fuzhou Changle International Airport

You can take buses or taxies to get to Fuzhou city from Fuzhou Changle International Airport.

**By bus:** Look out for the Airport express line to the north bus station. It terminates at the Minyun North bus station (near the train station).

The timings of the Airport express line to the train station are listed below: 8:20; 9:20; 9:55; 10:25; 10:55; 11:25; 11:55; 12:25; 12:55; 13:25; 13:55; 14:25; 14:55; 15:25; 15:55; 16:25; 16:55; 17:25; 17:55; 18:25; 18:55; 19:25; 19:55; 20:25; 20:55; 21:25; 22:25; 23:10; 0:10; 1:00 The fare is 25 RMB one way.

Get off at the terminal of the Airport express (Minyun North bus station). The distance from the Minyun North bus station to the hotel is around 1.8 km. You can take a taxi or walk or take bus line K1 or line 20 (get off at Hulinsiqiao station) to get to the hotel.

**By taxi:** Taxis are also available 24 hours a day outside the Arrival Halls of the terminal. It takes about 1 hour from the airport to the hotel. The fare is around 160 RMB.

#### From Fuzhou train station

**By bus:** Take bus line K1 or line 20, 22, 5, 51, 55, 69 and get off at Hualinsiqiao station. The hotel is at the south side (about 660 meter's walk). Or take a taxi to the hotel. The fare is about 10 RMB.

**By Taxi:** Taxis are also available 24 hours a day outside the train station. It takes about 10-15 minutes from the train station to the hotel. The fee is about 12RMB.

### Acknowledgements

#### **Associations and Programs**

Future Energy Profile/Sweden China Society of Energy Economy **Disney China Research** European Commission PLEEC Program Bayer Chair, UNEP-Tongji Institute of Environment for Sustainable Development

#### Universities

Mälardalen University, Sweden Tongji University **Beijing Normal University Tianjin University** 

**Chinese Society of Engineering Thermophysics** Sino-U.S. Eco Urban Lab, Georgia Tech and Tongji University Collaborative Innovation Center of Electric Vehicles in Beijing **European Commission TILOS Program** International Institute for Industrial Environmental Economics at Lund University, Lund, Sweden

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Technology Innovation for the Local Scale Optimum Integration of Battery Energy Storage



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The 8thInternational Conference on Appplied Energy

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#### **Topics (but not limited to)**

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

Deadline of full draft: April 31, 2016 Acceptance of notice: June 21, 2016 Final paper submission: July 31, 2016

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The Applied Energy Innovation Institute 国际应用 能源创新 研究院

#### AEii = Internatio nal + China & Applied Energy +In novation Platform

The AEII, Applied Energy Innovation Institute, is an international, independent, and nonprofit institute to incubate future clean energy technologies and solutions into sustainable market by engaging stakeholders including product producers, decision makers, investors, project developers and end-users.



### Program at a Glance

#### CUE 2015, Fuzhou, China, Nov. 15-17, 2015

Registration: Nov. 14: 15:00-17:00; Nov. 15: 8:00-17:00; Nov.16: 9:00-12:00; Nov. 17: 8:30-12:00				
	Day 1	L: Nov 15		
9:00-9:10		Opening		
9.10-9.20	Prof. Ben S	chwegler, Director of Disney Ch	ina Research	
	Integrated Infras	structure: A New Way to Design	Low Carbon Cities	
9.50-10.30	Prof. Hongguang	Jin, Academician of Chinese Ac	ademy of Sciences	
5.50 10.50	Distributed	Energy System for Sustainable	Urbanization	
10.30-11.10	Prof. Jia	ng Wu, Vice President of Tongji	University	
Planning towards a Green City: Shanghai as			i as a Case	
11:10-11:30	TEA/COFFEE BREAK			
11:30-12:00	Poster session I			
12:00-13:00		LUNCH		
Sessions	1-A1	1-B1	1-C1	
12:00 14:40	Energy management of	Energy management in	Power grid and distributed	
13.00-14.40	electric vehicle	sectoral level	generation	
14:40-15:00	TEA/COFFEE BREAK			
Sessions	1-A2	1-B2	1-C2	
15:00-17:00	Drive system of electric vehicle	Urban energy management, policy and economics	Renewable power generation	

Day 2: Nov 16			
Sessions	2-A1	2-B1	2-C1
8:20-10:00	Energy and water nexus Energy simulation and optimization		National energy economics
10:00-10:20		TEA/COFFEE BREAK	
Sessions	2-A2	2-B2	2-C2
10:20-12:00	Energy and environmental emissions	Advanced energy processes	National energy policy
12:00-13:00		LUNCH	
Sessions	2-A3	2-B3	2-C3
13:00-14:40	Occupant behavior and energy use of buildings	Low carbon city practices	Cutting edge of battery
14:40-15:00	TEA/COFFEE BREAK		
14:50-15:30	Poster session II		
Sessions	2-A4	2-B4	2-C4
15:30-17:10	Energy management of building system	Sustainable development of cities	Fuel cells and energy storage
18:30		Banquet	

Day 3: Nov 17			
9:00-9:20	Opening		
0.20 0.50	Prof. Hao Wang, Academician of Chinese Academy of Engineering		
9.20-9.30	Developing Sustainable Water urban Systems in China		
09:50-10:20	Mr. Jianxin Hu, Chief Sustainability Officer of China Merchants Property Development		
	Green Wisdom and Smart Transformation		
10:20-10:40	Tea/Coffee break		
10:40-12:10	Panel I: Future Urban Energy Systems-10KM2		
12:10-13:00	LUNCH		
13:00 -15:30	Panel II: Clean Energy Innovations		

### **Oral Presentations**

TIME	DAY 1: NOVEMBER 15	
	OPENING	
9:00-9:10	Welcome from the CUE2015 Conference Chairs	
	Prof. S. K. Chou and Prof. Jinyue Yan	
	Keynote: Integrated Infrastructure: A New Way to Design Low Carbon Cities	
9:10-9:50	Prof. Ben Schwegler	
	Director of Disney China Research	
9:50-10:30	Keynote: Distributed Energy System for Sustainable Urbanization	
	Prof. Hongguang Jin	
	Academician of Chinese Academy of Sciences	
10.20 11.10	Prof. Jiang Wu, Vice President of Tongji University	
10:30-11:10	Planning towards a Green City: Shanghai as a Case	
11:10-11:30	TEA/COFFEE BREAK	
11:30-12:00	Poster session I	
12:00-13:00	LUNCH	

Room: The First Meeting Room			
Session name: Energy management of electric vehicle			
Session chair: Junqiu Li, Hongwen He			
Time	ID	Author	Paper title
13:00-13:20	8	Jun-Qiu Li, Xin Jin and Rui Xiong	MULTI-OBJECTIVE OPTIMAL ENERGY MANAGEMENT STRATEGY AND ECONOMIC ANALYSIS FOR AN RANGE-EXTENDED ELECTRIC BUS
13:20-13:40	19	Wang Wenwei, Yu Quanqing, Lin Cheng, Cao Dongjiang and Sun Fengchun	A STOCHASTIC MODEL PREDICTIVE CONTROL STRATEGY FOR EXTENDED RANGE ELECTRIC BUS
13:40-14:00	30	Zhen Wei, John Xu and Dunant Halim	HEV ENERGY MANAGEMENT FUZZY CONTROL FOR URBAN DRIVING BASED ON DRIVING PATTERN RECOGNITION
14:00-14:20	78	Hongwen He, Jieli Zhang and Gaopeng Li	MODEL PREDICTIVE CONTROL FOR ENERGY MANAGEMENT OF A PLUG-IN HYBRID ELECTRIC BUS
14:20-14:40	90	Chun Wang, Hongwen He, Rui Xiong and Yongzhi Zhang	A NOVEL EFFICIENCY MODELING METHOD FOR A DC-DC CONVERTER IN THE HYBRID ENERGY STORAGE SYSTEM FOR ELECTRIC VEHICLES
14:40-15:00			TEA/COFFEE BREAK
Room: The First Me	eting F	Room	
Session name: Drive	e syste	m of electric vehicle	
Session chair: Weny	wei Wa	ing, Zhenpo Wang	
Time	ID	Author	Paper title
15:00-15:20	34	Li Zhai, Xinyu Zhang, Xinjie Gao, Guangzhao Lee, Ming Zou and Tianmin Sun	IMPACT OF DISTRIBUTED PARAMETERS ON CONDUCTED EMI IN ELECTRIC VEHICLES MOTOR DRIVE SYSTEM
15:20-15:40	37	Li Zhai, Guangzhao Lee, Xinjie Gao, Xinyu Zhang, Zhongli Gu and Ming Zou	IMPACT OF ELECTROMAGNETIC INTERFERANCE FROM POWER INVERTER DRIVE SYSTEM ON BATTERIES IN ELECTRIC VEHICLES
15:40-16:00	58	Pan Zhang, Yong Chen, Muyi Lin and Bin Ma	OPTIMUM MATCHING OF ELECTRIC VEHICLE POWERTRAIN
16:00-16:20	84	Zhifu Wang, Jingzhe Yang, Chuang Cao and Zhongli Gu	PHASE-PHASE SHORT FAULT ANALYSIS OF PERMANENT MAGNET SYNCHRONOUS MOTOR IN ELECTRIC VEHICLES
16:20-16:40	117	Cheng Lin, Xingqun Cheng, Hong Zhang and Xinle Gong	ESTIMATION OF CENTER OF GRAVITY POSITION FOR DISTRIBUTED DRIVING ELECTRIC VEHICLE BASED ON COMBINED H <sup>®</sup> —EKF METHOD
16:40-17:00	9	Junqiu Li, Yihe Wang and Jianwen Chen	RESEARCH OF APU DYNAMIC CHARACTERISTICS MODELING AND COORDINATION CONTROL IN ELECTRIC VEHICLES

Room: The Second Meeting Room			
Session name: Energy management in sectoral level			
Session chair: Erik	Dahlqu	ist, Peng Zhou	
lime	U 10	Autnor	Paper title
13:00-13:20	10	Tie Chen and Yanhong Yin	PUBLIC BUS TRANSPORT REFORM AND SERVICE CONTRACT IN ARAO
13:20-13:40	29	Fanxin Meng, Gengyuan Liu, Zhifeng Yang and Sergio Ulgiati	ASSESSMENT OF URBAN TRANSPORTATION METABOLISM FROM LIFE CYCLE PERSPECTIVE: A MULTI-METHOD STUDY
13:40-14:00	100	Gengyuan Liu, Zhifeng Yang, Bin Chen, Sergio Ulgiati	THE EVOLUTION OF CITIES: "BRAINS" OR "PARASITES" OF SUSTAINABLE PRODUCTION AND CONSUMPTION PROCESSES IN CHINA
14:00-14:20	143	Steven Jige Quan, Zhongming Shi, Tianren Yang and Perry Pei-Ju Yang	URBAN FORM AND BUILDING ENERGY PERFORMANCE IN SHANGHAI NEIGHBORHOODS
14:20-14:40	149	Wenwen Zhang, Subhrajit Guhathakurta, Catherine Ross	TRENDS IN AUTOMOBILE ENERGY USE AND GHG EMISSIONS IN SUBURBAN AND INNER CITY NEIGHBORHOODS: LESSONS FROM METROPOLITAN PHOENIX, USA
14:40-15:00			TEA/COFFEE BREAK
Room: The Second	Meetir	ng Room	
Session name: Urb	an enei	rgy management, policy and econ	iomics
Session chair: Fred	rik Wal	lin, Qie Sun	
Time	ID	Author	Paper title
15:00-15:20	144	Perry Pei-Ju Yang and Jinyue Yan	MODELING URBAN DESIGN WITH ENERGY PERFORMANCE
15:20-15:40	77	Stephen Read and Erik Lindhult	TECHNOLOGY AND TRANSITION: 'PROGRESSIVE' EVOLUTION OF REGIMES AND THE CONSEQUENCES FOR ENERGY REGIME CHANGE
15:40-16:00	150	Jiahong Liu, Silan Chen, Hao Wang, Pietro Elia Campana and Jinyue Yan	EVOLUTION OF CHINA'S URBAN ENERGY CONSUMPTION STRUCTURE AND ITS IMPACT ON CARBON EMISSIONS—A CASE STUDY IN BEIJING
16:00-16:20	153	Javier Campillo, Erik Dahlquist, Erik Lindhult and Iana Vassileva	TECHNOLOGY CAPACITY ASSESSMENT FOR DEVELOPING CITY ACTION PLANS TO INCREASE ENERGY EFFICIENCY IN MID-SIZED CITIES IN EUROPE
16:20-16:40	67	Wenhui Chen, Yalin Lei and Dongyang Pan	FACTORS AFFECTING ENERGY-RELATED CARBON EMISSIONS IN BEIJING'S TRANSPORT SECTOR: A PATH-KAYA MODEL
16:40-17:00	178	Tommy Kovola, Fredrik Wallin and Anette Hallin	FACTORS INFLUENCING INDUSTRIAL EXCESS HEAT COLLABORATIONS
17:00-17:20	137	Tianren Yang, Haisu Chen, Yisha Zhang, Shihao Zhang and Fan Feng	TOWARDS LOW-CARBON URBAN FORMS: A COMPARATIVE STUDY ON ENERGY EFFICIENCIES OF RESIDENTIAL NEIGHBORHOODS IN CHONGMING ECO-ISLAND

Room: International Conference Hall Session name: Power grid and distributed generation Session chair: Hongxing Yang, Jianzhong Wu			
Time	ID	Author	Paper title
13:00-13:20	128	Ali Al-Wakeel and Jianzhong Wu	K-MEANS BASED CLUSTER ANALYSIS OF RESIDENTIAL SMART METER MEASUREMENTS
13:20-13:40	21	Shuai Deng, Ligai Kang, Hui Wang, Yunfei Mu, Dan Wang and Ying Zhang	SCOPING THE FIELD: IDENTIFYING FOUR EMERGING RESEARCH TOPICS IN DISTRIBUTED ENERGY SYSTEM
13:40-14:00	47	Z Xu	CASE STUDY: DYNAMIC PERFORMANCE OF A MTDC NETWORK IN ZHOUSHAN
14:00-14:20	60	Xiaolong Jin, Yunfei Mu, Hongjie Jia, Tao Jiang, Houhe Chen and Rufeng Zhang	AN OPTIMAL SCHEDULING MODEL FOR A HYBRID ENERGY MICROGRID CONSIDERING BUILDING BASED VIRTUAL STORAGE SYSTEM
14:20-14:40	179	Marco Antonelli, Andrea Baccioli, Marco Francesconi and Umberto Desideri	DYNAMIC CONTROL STRATEGIES FOR DISTRIBUTED MICROGENERATION AND WASTE HEAT RECOVERY POWER PLANTS
14:40-15:00			TEA/COFFEE BREAK

Room: International Conference Hall			
Session name: Renewable power generation			
Session chair: Umb	erto De	esideri, Dan Wang	
Time	ID	Author	Paper title
15:00-15:20	53	Taehoon Hong, Kwangbok Jeong, Cheolwoo Ban, Jaeyoung Oh, Choongwan Koo, Jimnim Kim and Minhyun Lee	A PRELIMINARY STUDY ON THE 2-AXIS HYBRID SOLAR TRACKING METHOD FOR SMART PHOTOVOLTAIC BLINDS
15:20-15:40	164	Yang Zhang, Anders Lundblad, Pietro E. Campana and Jinyue Yan	STUDY ON EMPLOYING BATTERY STORAGES TO INCREASE PHOTOVOLTAIC SELF SUFFICIENCY IN A RESIDENTIAL BUILDING OF SWEDEN
15:40-16:00	165	Worrada Nookuea, Pietro Elia Campana and Jinyue Yan	EVALUATION OF SOLAR PV AND WIND ALTERNATIVES FOR SELF RENEWABLE ENERGY SUPPLY: CASE STUDY OF SHRIMP CULTIVATION
16:00-16:20	127	Min Ye, Xiaogang Yi and Shengjie Jiao	ENERGY OPTIMAZATION BY PARAMETER MATCHING FOR A TRUCK-MOUNTED CONCRETE PUMP
16:20-16:40	79	Siyang Hu, Dennis C.Y. Leung and Michael Z.Q. Chen.	IMPACT OF GUIDE WALL GEOMETRY ON THE POWER OUTPUT OF A SOLAR CHIMNEY POWER PLANT
16:40-17:00	51	Taehoon Hong, Kwangbok Jeong, Choongwan Koo, Jimin Kim and Minhyun Lee	A PRELIMINARY STUDY FOR DETERMINING PHOTOVOLTAIC PANEL FOR A SMART PHOTOVOLTAIC BLIND CONSIDERING USABILITY AND CONSTRUCTABILITY ISSUES
17:00-17:20	56	Zhang Bai, Qibin Liu, Hui Hong and Hongguang Jin	THERMODYNAMICS EVALUATION OF A SOLAR-BIOMASS POWER GENERATION SYSTEM INTEGRATED A TWO-STAGE GASIFIER

### **Oral Presentations**

TIME		DAY 2: NOVEMBER 16	
Room: The First Meeting Room			
Session name: Ener	gy and	water nexus	
Session chair: Xiaol	ing Zha	ng, Jianhua Wang	
Time	ID	Author	Paper title
8:20-8:40	146	Jin Yang	ENVIRONMENTAL AND CLIMATE CHANGE CO-BENEFITS ANALYSIS OF WIND POWER GENERATION IN CHINA
8:40-9:00	26	Jürgen-Friedrich Hake, Holger Schlör, Karin Schürmann and Sandra Venghaus	ETHICS, SUSTAINABILITY AND THE WATER, ENERGY, FOOD NEXUS APPROACH - A NEW INTEGRATED ASSESSMENT OF URBAN SYSTEMS
9:00-9:20	45	Cuiping Tan and Qiang Zhi	THE ENERGY-WATER NEXUS: LITERATURE REVIEW ON THE DEPENDENCE OF ENERGY ON WATER
9:20-9:40	108	Shibao Lu, Jianhua Wang, Haijun Bao	STUDY ON URBAN WATER SECURITY EVALUATION BASED ON THE VAGUE SET SIMILARITY MODEL
9:40-10:00	167	Pietro Elia Campana, Steven Quan, Federico Robbio, Anders Lundblad, Yang Zhang and Jinyue Yan	SPATIAL OPTIMIZATION OF RESIDENTIAL URBAN DISTRICT - ENERGY AND WATER PERSPECTIVES
10:00-10:20	TEA/COFFEE BREAK		
Room: The First Me	eting R	loom	
Session name: Ener	gy and	environmental emissions	
Session chair: Luis I	Munda	ca, Jiahong Liu	
Time	ID	Author	Paper title
10:20-10:40	80	Hanyan Li, Haobing Liu, Yanzhi Xu, Michael Rodgers and Randall Guensler	PERFORMANCE OF MULTIPLE EMISSIONS REDUCTION ALTERNATIVES FOR TRANSIT FLEETS: A REAL-WORLD OPERATIONS PERSPECTIVE
10:40-11:00	104	Dan Song and Bin Chen	EXTENDED EXERGY ACCOUNTING FOR ENERGY CONSUMPTION AND CO2 EMISSIONS OF CEMENT INDUSTRY—A BASIC FRAMEWORK
11:00-11:20	63	Xiaoqing Hao and Haizhong An	IMPORT COMPETITION PRESSURE AND PATTERN EVOLUTION: A NETWORK ANALYSIS OF GLOBAL CRUDE OIL TRADE
11:20-11:40	154	Hong Zhou and Daniel Castro-Lacouture	INTEGRATED ECOLOGICAL ASSESSMENT OF ENGINEERING PROJECTS BASED ON EMERGY ANALYSIS
11:40-12:00	156	Jonas Sonnenschein	CONDITIONS FOR THE COST EFFECTIVE COMBINATION OF EMISSIONS TRADING AND RENEWABLE ENERGY SUPPORT POLICIES

Room: The Second Meeting Room			
Session name: Energy simulation and optimization			
Session chair: Xin V	Vang, R	oland Span	
Time	ID	Author	Paper title
8:20-8:40	24	Yimo LUO, Hongxing Yang, Yi Chen, Yuanhao Wang	APPLICATION OF CFD MODEL IN ANALYZING THE PERFORMANCE OF A LIQUID DESICCANT DEHUMIDIFIER
8:40-9:00	49	Chan-Joong Kim, Taehoon Hong, Jaemin Jeong, Jimin Kim, Choongwan Koo, Kwangbok Jeong and Minhyun Lee	FRAMEWORK FOR THE DEVELOPMENT OF THE MINIMUM CV(RMSE) USING ENERGY SIMULATION AND OPTIMIZATION TOOL
9:00-9:20	54	Ligai Kang, Junhong Yang, Shuai Deng, Qingsong An, Jun Zhao, Hui Wang and Dan Wang	ENERGY, ECONOMICAL AND ENVIRONMENTAL EVALUATION OF A GSHP-CCHP SYSTEM BASED ON CARBON TAX AND ELECTRIC FEED IN TARIFF

9:20-9:40	69	Jan Wiedemann and Roland Span	SIMULATION OF AN EXHAUST HEAT DRIVEN RANKINE-CYCLE FOR HEAVY-DUTY DIESEL ENGINES
9:40-10:00	71	Jasmine Malinao, Florian Judex, Tim Selke, Gerhard Zucker, Henry Adorna, Jaime Caro and Walter Kropatsch	ROBUSTNESS DIAGRAM WITH LOOP AND TIME CONTROLS FOR SYSTEM MODELLING AND SCENARIO EXTRACTION WITH ENERGY SYSTEM APPLICATIONS
10:00-10:20			TEA/COFFEE BREAK
Room: The Second	Meetin	ig Room	
Session name: Adva	anced e	energy processes	
Session chair: Pietre	o Camp	ana, Anders Lundblad	
Time	ID	Author	Paper title
10:20-10:40	25	Yi Chen, Hongxing Yang and Yimo Luo	PARAMETER SENSITIVITY ANALYSIS OF INDIRECT EVAPORATIVE COOLER (IEC) WITH CONDENSATION FROM PRIMARY AIR
10:40-11:00	55	Ming Liu and Ben Schwegler	SOLID OXIDE FUEL CELLS FOR COMBINED COOLING, HEATING AND POWER GENERATION: RECENT DEVELOPMENT AND FUTURE PERSPECTIVES
11:00-11:20	64	Sang C. Lee	ANALOGICAL UNDERSTANDING OF THE RAGONE PLOT AND NEW CATAGORAZATION OF ENERGY DEVICES
11:20-11:40	105	Hong Yang, Jipeng Chang, He Wang and Dengyuan Song	POWER DEGRADATION CAUSED BY SNAIL TRAILS IN PHOTOVOLTAIC POWER PLANT
11:40-12:00	109	Xiaohu Yang, Wenbin Wang, Shangsheng Feng, LiwenJin, Tian Jian Lu and Yue Chai	ANALYTICAL ANALYSIS OF COLD STORAGE: THE ROLE OF POROUS METAL FOAM

Room: VIP Meeting Room				
Session name: National energy economics				
Session chair: Can V	Wang, A	Ali Cheshmehzangi		
Time	ID	Author	Paper title	
8:20-8:40	32	Rufeng Zhang, Houhe Chen, Tao Jiang, Hongjie Jia, Yunfei Mu and Xiaolong Jin	SECURITY-CONSTRAINED ECONOMIC DISPATCH FOR INTEGRATED NATURAL GAS AND ELECTRICITY SYSTEMS	
8:40-9:00	159	Lars Strupeit	STREAMLINING PHOTOVOLTAIC DEPLOYMENT: THE ROLE OF LOCAL GOVERNMENTS FOR REDUCING SOFT COSTS	
9:00-9:20	57	Mei Sun, Juan Li, Cuixia Gao and Dun Han	RESEARCH ON THE US ELECTRICITY MARKET BASED ON PRICE FLUCTUATIONS	
9:20-9:40	42	Shupei Huang, Haizhong An, Xiangyun Gao and Xuan Huang	FLUCTUATION AND CO-MOVEMENT OF THE CRUDE OIL PRICE AND THE STOCK RETURNS IN CHINA	
9:40-10:00	174	Jingjing Song, Fredrik Wallin, Hailong Li and BjörnKarlsson	PRICE MODELS OF DISTRICT HEATING IN SWEDEN	
10:00-10:20			TEA/COFFEE BREAK	
Room: VIP Meeting	Room			
Session name: Nati	onal en	ergy policy		
Session chair: Stepl	hen Rea	ad, Erik Lindhult		
Time	ID	Author	Paper title	
10:20-10:40	5	Huajiao Li, Haizhong An, Wei Fang, Yue Wang, Weiqiong Zhong and Lili Yan	GLOBAL ENERGY INVESTMENT STRUCTURE BASED ON THE SHAREHOLDING RELATIONSHIPS OF GLOBAL LISTED ENERGY COMPANIES	
10:40-11:00	16	Jagruti Thakur and Basab Chakraborty	SUSTAINABLE NET METERING MODEL FOR DIVERSIFIED INDIA	
11:00-11:20	102	Delin Fang and Bin Chen	WATER-ENERGY CONTROL RELATIONSHIP IN SOCIO-ECONOMIC SYSTEM	
11:20-11:40	121	Shuai Gao and Can Wang	SECTORAL CREDITING MECHANISM: HOW TO WORK IN CHINA	
11:40-12:00	157	Catherine Ross, Elliot Sperling and Subhrajit Guhathakurta	ADOPTING A NEW ENERGY ECONOMY IN THE UNITED STATES	

LUNCH

12:00-13:00

Room: The First Me	eting R	Room	
Session name: Occupant behavior and energy use of buildings			
Session chair: Peite	r De W	ield, Subhrajit Guhathakurta	
Time	ID	Author	Paper title
13:00-13:20	81	Rory Jones, Steve Goodhew and Pieter de Wilde	MEASURED INDOOR TEMPERATURES, THERMAL COMFORT AND OVERHEATING RISK: POST-OCCUPANCY EVALUATION OF LOW ENERGY HOUSES IN THE UK
13:20-13:40	91	Ki-Uhn Ahn, Cheol Soo Park	DIFFERENT OCCUPANT MODELING APPROACHES FOR BUILDING ENERGY PREDICTION
13:40-14:00	103	Sayanthan Ramakrishnan, Xiaoming Wang, Jay Sanjayan, John Wilson	APPLICATION OF PHASE CHANGE MATERIALS TO REDUCE HEAT RELATED RISKS DURING EXTREME HEAT WAVES IN AUSTRALIAN DWELLINGS
14:00-14:20	132	Song Pan, Chuanqi Xu, Shen Wei, Tarek Hassan, Lang Xie, YingziXiong, Steven Firth and Pieter de Wilde	IMPROPER WINDOW USE IN OFFICE BUILDINGS: FINDINGS FROM A LONGITUDINAL STUDY IN BEIJING, CHINA
14:20-14:40	135	Zheng Yang and Burcin Becerik-Gerber	HOW DOES BUILDING OCCUPANCY INFLUENCE ENERGY EFFICIENCY OF HVAC SYSTEMS?
14:40-15:00			TEA/COFFEE BREAK
15:00-15:30			Poster session II
Room: The First Me	eting R	loom	
Session name: Ener	rgy mar	nagement of building system	
Session chair: Taeh	oon Ho	ng, Cheol Soo Park	
Time	ID	Author	Paper title
15:30-15:50	72	Huanhuan Feng, Xue Tian, Sunliang Cao, Jun Zhao and Shuai Deng	MATCH PERFORMANCE ANALYSIS FOR A SOLAR-DRIVEN ENERGY SYSTEM IN A NET ZERO ENERGY BUILDING
15:50-16:10	76	Taehoon Hong, Minhyun Lee, Choongwan Koo, Jimin Kim and KwangbokJeong	ESTIMATION OF THE AVAILABLE ROOFTOP AREA FOR INSTALLING THE ROOFTOP SOLAR PHOTOVOLTAIC (PV) SYSTEM BY ANALYZING THE BUILDING SHADOW USING HILLSHADE ANALYSIS
16:10-16:30	126	Xi Chen and Hongxing Yang	AN EXHAUSTIVE PARAMETRIC STUDY ON MAJOR PASSIVE DESIGN PARAMETERS OF A TYPICAL HIGH-RISE RESIDENTIAL BUILDING IN HONG KONG
16:30-16:50	140	Pengfei Si, YuexiaLv, Xichen Liu, Xiangyang Rong and Ya Feng	AN OPTIMIZATION MODEL APPLIED TO ACTIVE SOLAR ENERGY SYSTEM FOR BUILIDINGS IN COLD PLATEAU AREA
16:50-17:10	155	Shipeng Luo and Daniel Castro-Lacouture	HOLISTIC MODELING OF MICROALGAE FOR POWERING RESIDENTIAL COMMUNITIES

Room: The Second Meeting Room			
Session name: Low carbon city practices			
Session chair: Perry	Pei-Ju	Yang, Ronald Wennersten	
Time	ID	Author	Paper title
13:00-13:20	65	Guochang Fang, Lixin Tian, Min Fu, Mei Sun, Ruijin Du and Menghe Liu	INVESTIGATION OF CARBON TAX PILOT IN YRD URBAN AGGLOMERATIONSANALYSIS AND APPLICATION OF A NOVEL ESER DYNAMIC EVOLUTION SYSTEM WITH CARBON TAX CONSTRAINTS
13:20-13:40	122	Ali Cheshmehzangi	FEASIBILITY STUDY OF SONGAO'S LOW CARBON TOWN PLANNING, CHINA
13:40-14:00	172	Hong Ting Ma, Wen Qian Lu, Li Hui Yin and Xiao Peng Shen	PUBLIC BUILDING ENERGY CONSUMPTION LEVEL AND INFLUENCING FACTORS IN TIANJIN
14:00-14:20	162	Meirong Su, Mingqi Zhang, Ying Zheng and Xuemei Yin	PRACTICE OF LOW-CARBON CITY IN CHINA: THE STATUS QUO AND PROSPECT
14:20-14:40	148	lana Vassileva, Erik Dahlquist and Javier Campillo	THE CITIZENS ROLE IN ENERGY SMART CITY DEVELOPMENT
14:40-15:00			TEA/COFFEE BREAK
15:00-15:30	Poster session II		

Room: The Second Meeting Room Session name: Sustainable development of cities Session chair: Mei Sun, Hongbo Ren			
Time	ID	Author	Paper title
15:30-15:50	152	Erik Lindhult, Javier Campillo, Erik Dahlquist and Stephen Read	INNOVATION CAPABILITIES AND CHALLENGES FOR ENERGY SMART DEVELOPMENT IN MEDIUM SIZED EUROPEAN CITIES
15:50-16:10	101	Yi Lu and Bin Chen	ENERGY-WATER NEXUS IN URBAN INDUSTRIAL SYSTEM
16:10-16:30	120	Siyuan Yang and Bin Chen	DOMINANT SECTOR OF EMBODIED PARTICULATE MATTER 2.5 (PM2.5) IN BEIJING
16:30-16:50	123	Ali Cheshmehzangi and Chris Butters	SUSTAINABLE LIVING AND URBAN DENSITY: THE CHOICES ARE WIDE OPEN
16:50-17:10	160	Ronald Wennersten, Qie Sun and Martin de Jong	HOW CAN THE GRADUAL DEVELOPMENT OF MORE SUSTAINABLE ENERGY SYSTEMS BE INTEGRATED IN URBAN PLANNING IN CHINA?

#### Room: VIP Meeting Room Session name: Cutting edge of battery

Session chair: John Xu, Saleh Khamlich			
Time	ID	Author	Paper title
13:00-13:20	6	Ming-Sen Zheng, Mocao Cai, Linlin Qin, Qi-Hui Wu, Yong Cao, Zhikai Wei, Jiao He, Quan-feng Dong	APPLICATION OF HIERARCHICAL NANOSPHERES FE2O3/GRAPHENE COMPOSITE IN LITHIUM-ION BATTERY AS AN ANODE MATERIAL
13:20-13:40	23	Hao Mu, Rui Xiong and Fengchun Sun	A NOVEL MULTI-MODEL PROBABILITY BASED BATTERY STATE-OF-CHARGE FUSION ESTIMATION APPROACH
13:40-14:00	41	Zhiyuan Jiang, Qiong Wang and Zhiguo Qu	LATTICE BOLTZMANN SIMULATION OF ION AND ELECTRON TRANSPORT IN LITHIUM ION BATTERY POROUS ELECTRODE DURING DISCHARGE PROCESS
14:00-14:20	93	Jun Qiu Li, Xin Jin, Puen Wu and Xiaopeng Zhang	RESEARCHES ON MODELING METHODS OF BATTERY CAPACITY DECLINE BASED ON CELL VOLTAGE INCONSISTENCY AND PROBABILITY STATISTICS
14:20-14:40	119	Zhao Lu, Yong Qi, Xiangzhao Meng, Lichuan Wei, Wangyang Hu, Lianying Zhang, Liwen Jin	THERMAL MANAGEMENT OF DENSELY-PACKED EV BATTERY WITH FORCED AIR COOLING STRATEGIES
14:40-15:00			TEA/COFFEE BREAK
15:00-15:30	Poster session II		

Room: VIP Meeting Room

Session name: Fuel cells and energy storage

Session chair: Rui Xiong, Min Ye

Time	ID	Author	Paper title
15:30-15:50	40	Xu Lu, Dennis Y.C. Leung, Huizhi Wang and Jin Xuan	A SWITCHABLE PH-DIFFERENTIAL REACTOR WITH HIGH REACTIVITY AND EFFICIENCY FOR CO2 UTILIZATION
15:50-16:10	70	Sang C. Lee	GRAPHICAL ANALYSIS OF A DC-DC CONVERTER EFFECT ON FUEL CELL: D-TRANSFORMATION
16:10-16:30	131	Meng Cheng, Saif Sami and Jianzhong Wu	VIRTUAL ENERGY STORAGE SYSTEM FOR SMART GRIDS
16:30-16:50	151	Yujie Wang, Chenbin Zhang and Zonghai Chen	MODEL-BASED STATE-OF-ENERGY ESTIMATION OF LITHIUM-ION BATTERIES IN ELECTRIC VEHICLES
16:50-17:10	177	Marco Antonelli, Umberto Desideri, Romano Giglioli, Fabrizio Paganucci and Gianluca Pasini	LIQUID AIR ENERGY STORAGE: A POTENTIAL LOW EMISSIONS AND EFFICIENT STORAGE SYSTEM

### Poster Presentations

	Ро	ster session I Nov. 15, 11:30-12:00
ID	Author	Paper title
4	Wang Zhenpo and Sun Peikun	RESEARCH OF THE RELATIONSHIP BETWEEN LI-ION BATTERY CHARGE PERFORMANCE AND SOH BASED ON MIGA-GPR METHOD
12	Yanhong Yin and Tie Chen	ENERGY CONSUMPTION AND QUALITY OF LIFE: ENERGY EFFICIENCY INDEX
13	Jing Zeng, Nianping Li, Jianlin Cheng, Yang Zhang and Chen Wang	EVALUATION OF THE SENSIBLE HEAT STORAGE AIR SOURCE HEAT PUMP FOR RESIDENTIAL HEATING IN CENTRAL-SOUTH CHINA
15	Huang Mian Li, Ping Liu	IN-SITU GOLD DECORATED 3D BRANCHED ZNO NANOCOMPOSITE AND THEIR ENHANCED ABSORPTION AND PHOTOOXIDATION PERFORMANCE FOR REMOVING OF ARSENIC FROM WATER
17	Zhimin Hu, Zhifu Wang, Yang Zhou and Guangzhao Lee	THE SLIDING MODE CONTROL ABOUT ASR OF VEHICLE WITH FOUR INDEPENDENTLY DRIVEN IN-WHEEL MOTORS BASED ON THE EXPONENT APPROACH LAW
18	Saleh Khamlich, TouhamiMokrani, BakangMothudi, Mokhotjwa Dhlamini and Malik Maaza	MICROWAVE SYNTHESIS OF SIMONKOLLEITE NANOPLATELETS ON 3D NICKEL FOAM-GRAPHENE FOR SUPERCAPACITOR APPLICATIONS
20	Peng Jin and Yang Li	OPTIMIZED SECONDARY CONTROL FOR DISTRIBUTED GENERATION UNDER UNBALANCED CONDITIONS
22	Jianyuan Zhang, Li Zhao, Jue Wen and Shuai Deng	AN OVERVIEW OF 200KW SOLAR POWER PLANT BASED ON ORGANIC RANKINE CYCLE
27	Dao-Yi Huang, Jer-Huan Jang, Wei-Ren Tsai, and Wen-Yu Wu	IMPROVEMENT IN HYDROGEN PRODUCTION WITH PLASMA REFORMER SYSTEM
31	Wei Liu, Hongwen He and Zexing Wang.	A COMPARISON STUDY OF ENERGY MANAGEMENT FOR A PLUG-IN SERIAL HYBRID ELECTRIC VEHICLE
35	Song Qiang and Jia Chao	ROBUST SPEED CONTROLLER DESIGN FOR PERMANENT MAGNET SYNCHRONOUS MOTOR DRIVES BASED ON SLIDING MODE CONTROL
36	Lu Wang, Xiao-Kai Chen and Qing-Hai Zhao	MUTI-OBJECTIVE TOPOLOGY OPTIMIZATION OF AN ELECTRIC VEHICLE'S TRACTION BATTERY ENCLOSURE
38	Bo Ning, Jun Xu, Binggang Cao, Bin Wang and Guangcan Xu.	A SLIDING MODE OBSERVER SOC ESTIMATION METHOD BASED ON PARAMETER ADAPTIVE BATTERY MODEL
39	Bin Wang, Jun Xu, Binggang Cao, Qiyu Li and Qingxia Yang.	ADAPTIVE MODE CONTROL STRATEGY OF A MULTIMODE HYBRID ENERGY STORAGE SYSTEM
44	Yeyanran Ge and Qiang Zhi	LITERATURE REVIEW: GREEN ECONOMY, CELAN ENERGY POLICY AND EMPLOYMENT
46	Xilian Luo, Wenwu Li, Yuehui Yu, Liwen Jin, Zhaolin Gu	AN ENERGY EFFICIENT STRATEGY FOR LOCAL ENVIRONMENT CONTROL OF RELICS PRESERVATION IN ARCHAEOLOGY MUSEUMS WITH FUNERARY PITS
48	Zhen Wei, Z. Xu , C. Zhang	A RAPID FAULTS DETECTION METHOD FOR CONTROLLING MULTI-TERMINAL HIGH VOLTAGE DC GRIDS UNDER AC GRID CONTINGENCIES
52	Wenlong Sun and Xiaokai Chen	ANALYSIS OF ENERGY SAVING AND EMISSION REDUCTION OF VEHICLES USING LIGHTWEIGHT MATERIALS
59	Kejia Yang, Yalin Lei and Yue Huang	THE CARBON DIOXIDE MARGINAL ABATEMENT COST CALCULATION OF CHINESE PROVINCES -BASED ON STOCHASTIC FRONTIER ANALYSIS
61	Le He, Ling Zhang, Peng Zhou and Yan Xu	THE CITIES SOCIAL DEVELOPMENT EVALUATION IN THE SOUTH OF JIANGSU BASED ON BI-TOPSIS METHOD

62	Lianying Zhang, Yuanyuan Liu, Liwen Jin, Xing Liu, Xiangzhao Meng and Qunli Zhang	ECONOMIC ANALYSIS OF GRAVITY HEAT PIPE EXCHANGER APPLIED IN COMMUNICATION BASE STATION
66	Xinyang Rui and Jian Meng	DYNAMIC FREQUENCY REGULATION METHOD BASED ON THERMOSTATICALLY CONTROLLED APPLIANCES IN THE POWER SYSTEM
68	Hong Yang, Enyu Wang and He Wang, Wei Guo	INDUSTRIAL TECHNOLOGY OF PASSIVATED EMITTER AND REAR CELLS(PERC) WITH SILICON OXYNITRIDE AND SILICON NITRIDE AS REAR PASSIVATION FOR HIGH EFFICIENCY BIPV MODULES
82	Wenwei Wang, Sheng Yang, Fengchun Sun and Quanqing Yu	THE CLAY-LIKE MECHANICS MODEL OF CYLINDRICAL LITHIUM-ION BATTERY CELLS UNDER RADIAL COMPRESSION
83	Shaopeng Guo, Jun Zhao, Jinyue Yan, Guang Jin and Xiaotong Wang	ECONOMIC ASSESSMENT OF MOBILIZED THERMAL ENERGY STORAGE FOR DISTRIBUTED USERS: A CASE STUDY IN CHINA
85	Zhifu Wang, Yupu Wang and Yinan Rong	RESEARCH ON CONTROL STRATEGY OF THE BIDIRECTIONAL FULL-BRIDGE DC/DC CONVERTER USED IN ELECTRIC VEHICLES
86	Zhifu Wang, Yupu Wang, YinanRong and Fantao Lin	STUDY ON THE OPTIMAL CHARGING METHOD FOR LITHIUM-ION BATTERIES USED IN ELECTRIC VEHICLES
87	T. D. Rathnaweera, L. Romain, P.G. Ranjith, M. S. A. Perera	DEFORMATION MECHANICS AND ACOUSTIC PROPAGATION IN RESERVOIR ROCK UNDER BRINE AND OIL SATURATION: AN EXPERIMENTAL STUDY
88	Shuangquan Shao, Weijia Zhang, Hainan Zhang and Changqing Tian	PERFORMANCE CHART: A NOVEL METHOD FOR PERFORMANCE ANALYSIS OF MULTI-UNIT AIR CONDITIONERS
89	Wang Wenwei, Hou Rui, Yu Quanqing and Lin Cheng	COMPARATIVE RESEARCH ON TRANSMISSION FORM OF PURE ELECTRIC BUS
92	Xinjie Gao, Donglin Su, Li Zhai and Xinyu Zhang	DIAGNOSIS METHOD OF RADIATED EMISSION FROM BATTERY MANAGEMENT SYSTEM FOR ELECTRIC VEHICLE
94	Fantao Lin, Yupu Wang, Zhifu Wang, Haibo Yu and Yinan Rong	THE DESIGN OF ELECTRIC CAR DC/DC CONVERTER BASED ON THE PHASE-SHIFTED FULL-BRIDGE ZVS CONTROL
95	Caiping Zhang, Jiuchun Jiang, Yang Gao, Weige Zhang, Qiujiang Liu and Xiaosong Hu	POLARIZATION BASED CHARGING TIME AND TEMPERATURE RISE OPTIMIZATION FOR LITHIUM-ION BATTERIES
96	Rui Hou, Junzhi Zhang and Cheng Lin	NEW APPROACH OF COMPREHENSIVE SHIFT SCHEDULE BASED ON ELECTRIC DRIVE AUTOMATED MECHANICAL TRANSMISSION
98	Shaoqing Chen and Bin Chen	SYSTEMIC MODELLING OF CARBON METABOLISM FOR CITIES: THEORY AND METHODS
99	Hongbo Ren, Qiong Wu and Liuliang Qiu	THEORETICAL ANALYSIS ON THE ENVIRONMENTAL PERFORMANCE OFDISTRIBUTED COMBINED HEAT AND POWER SYSTEM
106	He Wang, Ao Wang, Hong Yang, Dengyuan Song	STUDY ON THE THERMAL STRESS DISTRIBUTION OF CRYSTALLINE SILICON SOLAR CELLS IN BIPV
107	Qiong Wu, Hongbo Ren and Weijun Gao	ECONOMIC ASSESSMENT OF MICRO-CHP SYSTEM FOR RESIDENTIAL APPLICATION IN SHANGHAI, CHINA
110	Chong Zhang, Kuang Cheng, Jinbo Wang and Xinhua Xu	NUMERICAL EVALUATION OF HEAT RECOVERY PERFORMANCE OF A SWITCHABLE EXHAUST AIR WINDOW
112	Yizhong Wang, Qunwei Wang and Ye Hang	DRIVING FACTORS OF SO2 EMISSIONS IN 13 CITIES, JIANGSU, CHINA
113	Le Feng and Bin Chen	SCARCE WATER FOOTPRINT OF ENERGY PRODUCTION IN CHINA
114	Lu Yi, Hongwen He and Jiankun Peng.	HARDWARE-IN-LOOP SIMULATION FOR THE ENERGY MANAGEMENT SYSTEM DEVELOPMENT OF A PLUG-IN HYBRID ELECTRIC BUS
115	Shouyang Wei, Yuan Zou, Fengchun Sun and Onder Christopher	ENERGY MANAGEMENT OPTIMIZATION FOR A HYBRID TRACKED VEHICLE USING THE RADAU PSEUDOSPECTRAL METHOD
	Ро	ster session II Nov.16, 14:50-15:30
116	Shiyu Ji and Bin Chen	LCA-BASED CARBON FOOTPRINT OF A TYPICAL WIND FARM IN CHINA
124	Muhammad Wakeel and Bin Chen	OVERVIEW OF ENERGY PORTFOLIO IN PAKISTAN
125	Jiangjiang Wang and Tianzhi Mao.	CONFIGURATION OPTIMIZATION WITH OPERATION STRATEGY OF SOLAR-ASSISTED BCHP SYSTEM TO MINIMIZE ENERGY CONSUMPTION

129	Ting Yang and Jincheng Wu.	THE LOAD CONTROL STRATEGY OF DATACENTER
130	Yizi Shang, Jianhua Wang, Hongwang Shi and Yong Zhao	MAJOR FACTORS IN INDUSRIAL WATER USE CHANGES IN TIANJIN AND THE IMPACT ASSESSMENT
133	Binyue Zhang and Bin Chen	EMERGY-BASED COST-BENEFIT ANALYSIS FOR URBAN BIOGAS PROJECT
134	Shihao Zhang, Zhi Zhuang, Baoshun Yang and Hongwei Tan	APPLICABILITY STUDY ON A HYBRID RENEWABLE ENERGY SYSTEM FOR NET-ZERO ENERGY HOUSE IN SHANGHAI
138	Zhuang Xu and C Zhang	ANALYTICAL MODELS OF CONDUCTION AND SWITCHING LOSSES OF A THREE PHASE AC-DC MATRIX RECTIFIER FOR HYBRID ELECTRIC VEHCLES
139	FeiTeng, Yunfei Mu, Hongjie Jia, Jianzhong Wu, Pingliang Zeng and Goran Strbac	CHALLENGES OF PRIAMRY FREQUENCY CONTROL AND BENEFITS OF PRIMARY FREQUENCY RESPONSE SUPPORT FROM ELECTRIC VEHICLES
141	Xin Wang, Cheryl Chi and Perry Pei-Ju Yang	GLOBAL CITY INDICATORS: TOWARDS A HOLISTIC VIEW OF LOW CARBON CITY DIMENSIONS
142	Chuang Wang, Da Yan and Xiaoxin Ren	MODELING INDIVIDUAL'S LIGHT SWITCHING BEHAVIOR TO UNDERSTAND LIGHTING ENERGY USE OF OFFICE BUILDING
145	Jahangir Soomro, Bin Chen and Muhammed Wakeel	EXTENDED EXERGY ACCOUNTING FOR KARACHI
147	Xiaofeng Ding, Min Du, Tong Zhou, Hong Guo, Chengming Zhang and Feida Chen	COMPREHENSIVE COMPARISON BETWEEN SIC-MOSFETS AND SI-IGBTS BASED ELECTRIC VEHICLE TRACTION SYSTEMS UNDER LOW SPEED AND LIGHT LOAD
161	Cuncun Duan and Bin Chen	WATER EMBODIED IN INTERNATIONAL ENERGY TRADE OF CHINA
163	Kirubajiny Pasupathy, Marita Berndt, Jay Sanjayan, Rajeev Pathmanathan	DURABILITY PERFORMANCE OF CONCRETE STRUCTURES BUILT WITH LOW-EMBODIED-CARBON CONSTRUCTION MATERIAL
166	Saige Wang and Bin Chen	ACCOUNTING OF SO2 EMISSIONS FROM COMBUSTION IN INDUSTRIAL BOILERS
169	Zhicong Shi, Zhuozhuo Zhao, Zouxin Zhang, Yongliang Shang, Yunyong Li, Lingyu Zhang, Haiyan Zhang, Zaiping Guo	SPINEL OXIDE CATHODE MATERIAL FOR HIGH POWER LITHIUM ION BATTERIES FOR ELECTRICAL VEHICAL
170	Yan Lu, Yanan Wang and You Lu.	HEAT MODES ANALYSIS OF LOW ENERGY RESIDENTIAL BUILDINGS IN TIANJIN
171	Xue Tian, Mengjun Yang, Shuai Deng, Jun Zhao	A STUDY ON OPERATIONAL STRATEGY OF GROUND –SOURCE HEAT PUMP SYSTEM WITH FOCUS ON VARIATION OF BUILDING LOAD
173	Hong Ting Ma, Wei Ye Zhou, Xin Yu Lu, ZeQun Ding and Yang Cao	APPLICATION OF LOW COST ACTIVE AND PASSIVE ENERGY SAVING TECHNOLOGIES IN AN ULTRA-LOW ENERGY CONSUMPTION BUILDING
175	Yuexia Lv, Pengfei Si, Xichen Liu, Xiangyang Rong, Ya Feng and Jinyue Yan	OPTIMIZATION MODEL FOR SOLAR THERMAL COLLECTOR BASED ON A NEW CONCEPT OF EFFECTIVE HEAT COLLECTION
176	Hongting Ma, Yang Cao, Xinyu Lu, Zequn Ding and Weiye Zhou	PYROLYSIS AND ENERGY CONVERSION OF TYPICAL MUNICIPAL SOLID WASTES
180	Marcus Budt, Daniel Wolf, Roland Span and Jinyue Yan	COMPRESSED AIR ENERGY STORAGE - AN OPTION FOR MEDIUM TO LARGE SCALE ELECTRICAL ENERGY STORAGE
181	Qiyan Wu, Xiaoling Zhang, Jingwei Sun and Zhifei Ma	LOCKED POST-FOSSIL CONSUMPTION OF URBAN DECENTRALIZED SOLAR PHOTOVOLTAIC ENERGY: A CASE STUDY OF AN ON-GRID PHOTOVOLTAIC POWER SUPPLY COMMUNITY IN NANJING, CHINA
187	Chen Wang, Gengyuan Liu and Xinyu Liu	STANDARDIZED NATIONAL EMERGY SYNTHESIS BASED ON GLOBAL EMERGY DATABASE
74	Liuliang Qiu, Hongbo Ren, Yinyin Ban, Jian Yang and Qiang Cai.	REGIONAL DISTRIBUTED ENERGY BIDDING FOR ACCESSING TO NETWORKS ECONOMIC ANALYSIS
75	Lu Shibao and Wang Jianhua.	STUDY ON URBAN WATER SECURITY EVALUATION BASED ON THE VAGUE SET SIMILARITY MODEL
186	Sun Qi, Yao Yan, Cai Jinhui, Zhu Yingying	PROXIMATE ANALYSIS OF SAWDUST USING NEAR INFRARED SPECTROSCOPY AND LOCALLY WEIGHTED PARTIAL LEAST SQUARES
188	Yan Gao and Gengyuan Liu	A SPATIAL PANEL CORRELATION MODEL OF ECONOMY-POLLUTION INTERACTIONS. THE CASE OF "CANCER VILLAGES" IN THE HUAIHE RIVER BASIN





The Collaborative Innovation Center of Electric Vehicles in Beijing was established in September of 2012 jointly by Beijing Institute of Technology (BIT), Tsinghua University, Beijing Jiaotong University, Beijing Automotive Group Corporation and other six research institutes under the framework of the "Collaborative Innovation Program" of the Ministries of Education (MOE) of China, the so-called "National 2011

Program", launched in 2011 after the National "211-Program" and "985-Program".

The mission of the consortium is to integrate key innovative elements among universities, research institutes and enterprises in China and abroad, as well as to take advantage of the strengths in vehicle system dynamics and control, high-efficiency driving and transmission, clean energy resources and power plant, electric vehicle and grid coupling design and management of the ten member institutions in the further advancement of cutting-edge electric vehicles-related research and meanwhile training young generation of research excellence, and in so doing, strengthening research-industry ties and cooperation. The center also focuses on key technologies in electric vehicles application: vehicles, infrastructure and service:



It is thus expected that with the collaborative efforts throughout the world, those problems that could not be solved by individual research groups or even individual universities, can now become well targeted with outputs that leads electric vehicles research in China towards the better international visualization.

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### Panel Session: 10KM<sup>2</sup> Near Zero Energy District

*Time:* 10:40am – 12:10pm, November 17, 2015 *Venue:* Empark Grand Hotel, 59, Wenquangongyuan Road, Fuzhou, China *Conveners:* Jerry Yan and Perry Yang

*Panelists:* Ben Schwegler, Erik Dahlquist, Ronald Wennersten, Subhro Guhathakurta, Pieter De Wilde, Fengchun Sun, Ya Feng, Jianzhong Wu



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#### /

The **PURPOSES** of the brainstorming workshop are

To facilitate the international cooperation through the on-site platform for developing, innovating and commercializing clean energy technologies.
To empower the institutes to promote the R&D results from the developed countries into the applications in China market.

To promote cooperation of clean technology inventors and developers and their industry with the financial sector.

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- Enriching discussion with international experts from US and Europe
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/	
PROGRAM	
10.00 – 10.15	Welcome & quick introduction of participants
10.15 – 11.15	Brainstorming: Innovation of cleantech
11.15 – 11.30	Tea/coffe break
11.30 – 12.30	Brainstorming: Commercialization of cleantech
12.30 – 13.00	Wrap-up: Future collaboration and networking
13.00 – 14.00	Lunch
14.00 – 16.00	Free discussions

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