



Taipei, 2013

# Conference Program

## ICAE 2014

**30 MAY - 2 JUNE 2014 : TAIPEI**  
International Conference on Applied Energy



# International Conference AppliedEnergy



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*Taipei City Government*

*Office of the Mayor*

*Taipei, Taiwan, Republic of China*

*Lung-Bin Hau, Ph.D.*  
*Mayor*

臺北市市長 郝龍斌

Honoured Guests

Welcome to Taipei! On behalf of the Taipei City Government and the city's 2.68 million inhabitants, I would like to extend our warmest welcome to all participants in the International Conference Applied Energy 2014.

I'd like to express our deep appreciation towards the National Taiwan University of Science and Technology for their commitment to ensuring the success of this global gathering. This event will provide a constructive conduit for the exchange of knowledge and expertise in applied energy, and promises to be a rewarding experience for all involved.

On a different note, be sure to take time out to explore our exhilarating city. Apart from Taipei 101, an awe-inspiring skyscraper, you can also visit the much-vaunted National Palace Museum, which houses some of the world's most important historical artifacts, and make use of the celebrated Taipei Metro, perhaps the world's best rapid transit system. Taipei has many well-kept secrets awaiting your discovery. Nestling in the mountains are a number of well-made, eco-friendly hiking trails for the fitness-minded. If day-tripping gives you sore feet, world-class hot springs await your call in the northern suburbs. Taipei has also made great strides in protecting wildlife and rehabilitating wild areas—stop by the Guandu Nature Park and you will be amazed by its rich biodiversity. Be adventurous and check out the quaint cafés, retro teahouses and boutique art galleries. The quiet alleys that crisscross Taipei are full of little treasures!

As host city and sponsor of the International Conference Applied Energy 2014, we hope you have a wonderful time and take home the most beautiful memories.

Sincerely yours

Lung-Bin Hau  
Mayor of Taipei





Taipei, 2014



Pretoria, 2013



Suzhou, 2012



Perugia, 2011

## Welcome to ICAE2014

The Local Organizing Committee of ICAE2014 warmly invites you to attend the 6th International Conference on Applied Energy during May 30-June 2, 2014, in Taipei, Taiwan. The topic of ICAE2014 is "Clean, Efficient, Affordable and Reliable Energy for a Sustainable Future". As the conference chairman, it is a great honour for us to make an invitation for all of you to this exciting event, with the cordial Taiwanese hospitality and the warm welcome of Taipei City. As a continuation of this prestigious series conference, we will follow the style of the former five successful Conferences to have you enjoy the program and social activities provided by the organizers. ICAE-2014 will include plenary sessions, keynote lectures, and parallel specialized sessions on different topics related to applied energy. Main venue of ICAE2014 is National Taiwan University of Science and Technology (Taiwan Tech) campus, which is a young Technological University with nice academic reputation and leading world ranking. We are looking forward to seeing you all at the heart of Taipei City.

Conference Chairs

Professor DJ Lee

Professor J Yan

# Committee

## Conference Chairs

Prof. DJ LEE & Prof. J YAN (co-chair)

## Organizing Committee

DJ. LEE (Chair)	E. DAHLQUIST (Co-Chair)	C.S. CHERN (co-chair)
W.C. LEE (co-chair)	J.S. CHANG	C.C. HUANG
Y. TAI	J.Y. CHANG	L.Y. CHEN
HL LI	F. WALLIN	E. NEHRENHEIM
M. ODLARE	W-H CHEN	

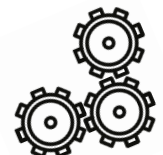
## International Scientific Committee

Prof. J. Yan (Chair), Editor-in-Chief of Applied Energy, Sweden

Prof. S.K. Chou (Co-Chair), Associate Editor of Applied Energy, Singapore

Prof. U. DESIDERI (Co-Chair), Associate Editor of Applied Energy, Italy

A.K. GUPTA, USA	H. JIN, PR China	X.X. ZHANG, PR China
A.P. ROSKILLY, UK	Y. WEI, PR China	X.X. YANG, PR China
S. TU, PR China	H. YANG, Hong Kong	X. XIA, South Africa
K. YOSHIKAWA, Japan	M. BEER, USA	J. WANG, USA
J. BUNDSCHUH, Australia	S CAMPANARI, Italy	E. THOMSON, Singapore
J.C. CHEN, Taiwan	F.L. CHEN, Taiwan	D. ZHANG, Australia
D.CHIARAMONTI, Italy	A.J. CONEJO, Spain	W.M. YAN, Taiwan
E. DAHLQUIST, Sweden	J DE RUYCK, Belgium	Y. YAMAGATA, Japan
SM DENG, Hong Kong	I. DINCER, Canada	Y. UCHIYAMA, Japan
S.V. GARIMELLA, USA	L.J. GUO, China	T. TEZUKA, Japan
J. GOLDEMBERG, Brazil	G. HAMMOND, UK	B. STIGSON, Switzerland
J. HETLAND, Norway	R.F. HUANG, Taiwan	R. SPAN, Germany
B.J. HWANG, Taiwan	N. JENKINS, UK	J. SCHOONMAN, The Netherlands
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DJ. LEE, Taiwan	M. LEE, Taiwan	M. OBERSTEINER, Austria
Y.C. LEUNG, Hong Kong	M.K.H LEUNGg	T.H. LIN, Taiwan
X. LI, Canada	Y. LI, Hong Kong	J.R MOREIRA, Brazil
T.H. LIN, Taiwan	R. MADLENER, Germany	A. MEIER, USA
A. MASSARDO, Italy	SS HSIEH, Taiwan	Yueh-Jaw (YJ) Lin, PR China



## Panels and Special Sessions

- GCP & JST-RISTEX session: Energy resilient urban planning
- ESI session: Regional and cross-country level discussions
- Young Scientist Panel: Powering the sustainable development in the 21th Century
- Clean technology transfer and diffusion

## Lecture & Discussion

- Scientific publishing: author-reviewer-editor-publisher

## Technical Tour (June 3<sup>rd</sup>)

- National Taipei University of Science and Technology
- Yuaz Ze University, Fuel Cell Center
- Industrial Technology Research Institute (ITRI):  
Green Energy and Environment Research Laboratories

# Keynotes



**Dr. Mark Stafford Smith**

## **Chair, Future Earth Science Committee, and Science Director, CSIRO Climate Adaptation Flagship**

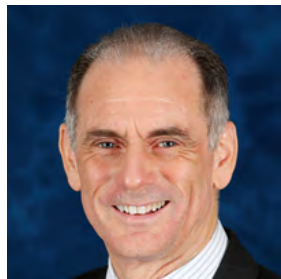
Dr Mark Stafford Smith is the Science Director of CSIRO's Climate Adaptation Flagship in Canberra, Australia, where he oversees a highly interdisciplinary program of research on many aspects of adapting to climate change, as well as regularly interacting with national and international policy issues. He has over 30 years experience in drylands systems ecology, management and policy, including senior roles such as CEO of the Desert Knowledge Cooperative Research Centre in Alice Springs. His significant international roles include being past vice-chair of the International Geosphere-Biosphere Programme's Scientific Committee.



**Prof. Falin Chen**

## **National Taiwan University, Taiwan**

Since Prof. Chen joined the faculty of Institute of Applied Mechanics of National Taiwan University in 1989, Professor Falin Chen has devoted himself in three major research fields. First of them is the stability of fluid flow, which applies on various engineering disciplines, such as alloy casting, film coating, underground water motion, jet, gravity current, and so on. The second is regarding the engineering applications by analyzing the ventilation in road tunnel and subway system to comply with the booming infrastructure development in Taiwan. Recently, due to the global warming issue and the severe energy situation of Taiwan, he has devoted most of his research effort to the energy-related researches, such as the Kuroshio power harness, the water and thermal management of the hydrogen fuel cells, the strategy of CO2 emission abatement.



**Mr. Mark L. Clifford**

## **Executive Director of the Asia Business Council**

Mark L. Clifford is Executive Director of the Asia Business Council and author of the forthcoming book *The Greening of Asia* (Columbia University Press). Previously he was Editor-in-Chief of the *South China Morning Post*, Publisher and Editor-in-Chief of *The Standard* and the Hong Kong-based Asia Regional Editor for *Business Week*. Mr. Clifford beginning in 1987 was a *Far Eastern Economic Review* correspondent in Korea, and served as Business Editor in Hong Kong before joining *Business Week* in 1995. In addition to the Asia Business Council's books on young Asians (*Through the Eyes of Tiger Cubs: Views of Asia's Next Generation*) and on green buildings (*Building Energy Efficiency: Why Green Buildings Are Key to Asia's Future*).

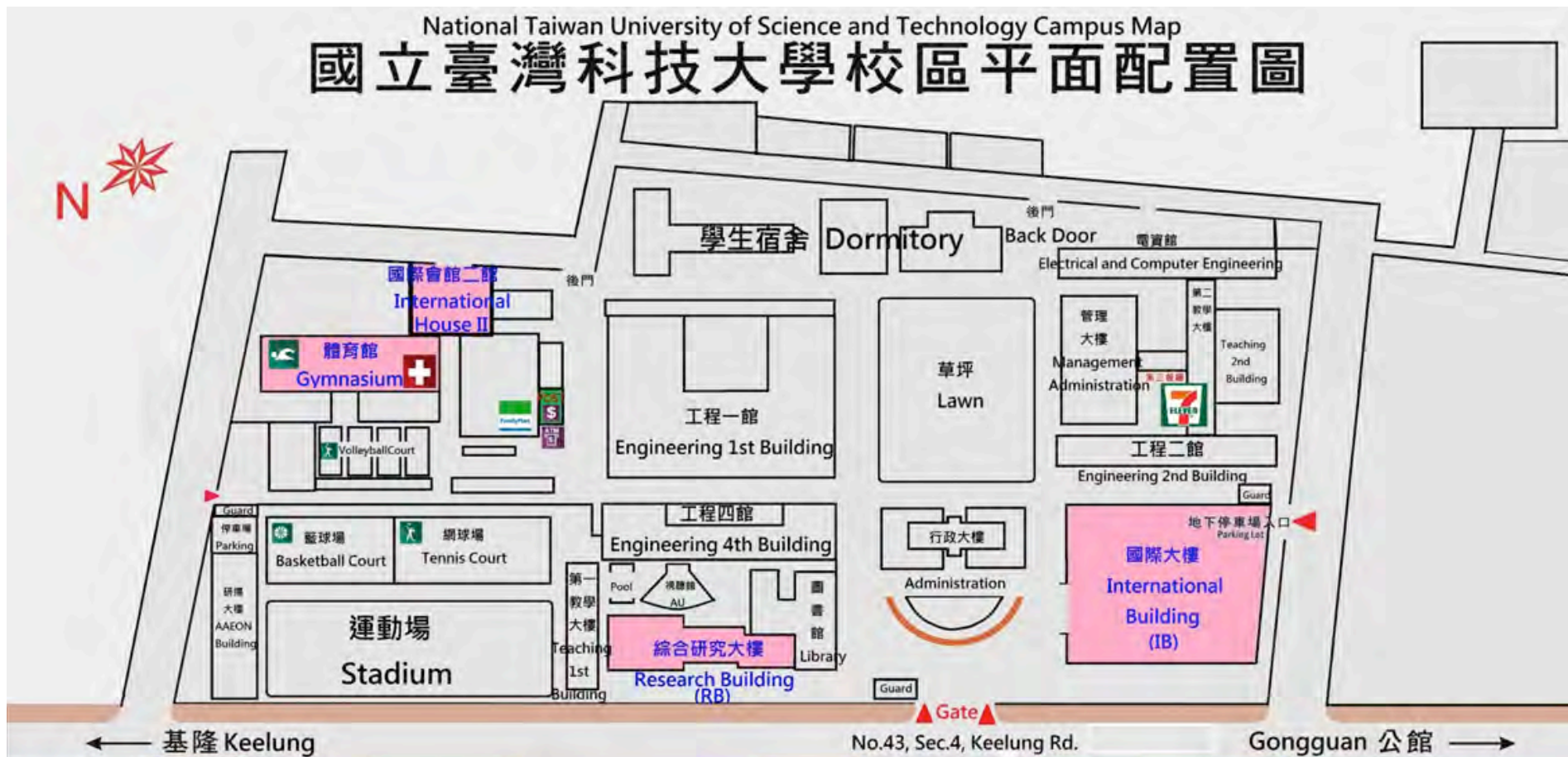


**Prof. Dr. Detlef Stolten**

## **RWTH Aachen University, Germany**

Professor Dr. Detlef Stolten is the director of the Institute for Electrochemical Process Engineering (IEK-3) at the Juelich Research Center in Germany and holds the chair for fuel cells at the RWTH Aachen University. His research is focused on different types of fuel cells from electrochemistry to systems including energy systems analysis. It encompasses electrolysis and hydrogen storage and distribution. For 12 years he worked in the industry with Bosch and Daimler Benz/Dornier. He is chairman of the ExCo of the Implementing Agreement Advanced Fuel Cells of the IEA, Vice President for Europe of the International Association of Hydrogen Energy, member of the steering committee of the Society Process and Chemical Engineering of the Association of German Engineers, member of the Supervisory Board of the Wuppertal Institute for Climate, Environment and Energy. He is member of the Scientific Advisory Board of the Max Planck Institute for Dynamics of Complex Technical Systems. He edited four books on hydrogen and fuel cells, carbon capture, fuel cell science and engineering as well as transition to renewable energy systems.

# Campus map and venue



**Research Building (RB):** Open ceremony and Keynote speeches

**International Building (IB):** Technical sections, open reception, and lunches

**Gymnasium:** Banquet

**International House II:** Guest house

**Miscellaneous:** Post office, ATM, Convenient shop



# Speaker Guide

## Oral Presentation

Length of presentation material should be in accordance with your time allocated. 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 in the Research Building. The main conference venues are in the International Building. The following table lists all the presentation venues with abbreviations which are used in the detailed programmes in the late part of this booklet. The banquet will be held in Gymnasium.

<b>Venue Room</b>	<b>Location (International Building)</b>
RECEPTION	IB-Floor 12
Session A	IB-304
Session B	IB-305
Session C	IB-306
Session D	IB-307
Session E	IB-308
Session F	IB-408
Session G	IB-409-1
Session H	IB-409-2
Session I	IB-410-1
Session J	IB-410-2
Session K	IB-510-2
Session L	IB-511-1
Session M	IB-511-2
LUNCH	IB-101/IB-202

# Practical Guide

## Emergency call of Taiwan Government

General emergency: 119

Police: 110

## During conference

Prof. Yian Tai: +886-920383752

Mr. Victor Chi: +886-953223424

Mr. Scott Mu: +886-912354641

## Public transport

(1) MRT (2) Bus

Buses in Taipei are numerous and bus routes are well-planned. Once you get a hang of it, buses are a great way to get around the city. Buses take EasyCard or cash. Prices are calculated by distance.

Tickets come in three price levels: One-segment, Two-segment and Three segment.

Tickets:

Coin: One-segment ticket, regular NT\$15; Two-segment ticket, regular NT\$30; Three-segment, NT\$45. Most passengers will only need a One-segment ticket. The bus driver will notify you if you need to pay more for a Two or Three-segment ticket.

Note: Be sure to have the exact ticket amount as buses will not give change.

EasyCard: Gently sweep card over the sensor area marked by the EasyCard logo (or insert token into the slot) on the ticket reader. The beep you hear indicates that credit corresponding to the ticket amount has been deducted from your card

## Electricity

Voltage: 110 V



Plug Type A

Plug Type B



Outlet Type A

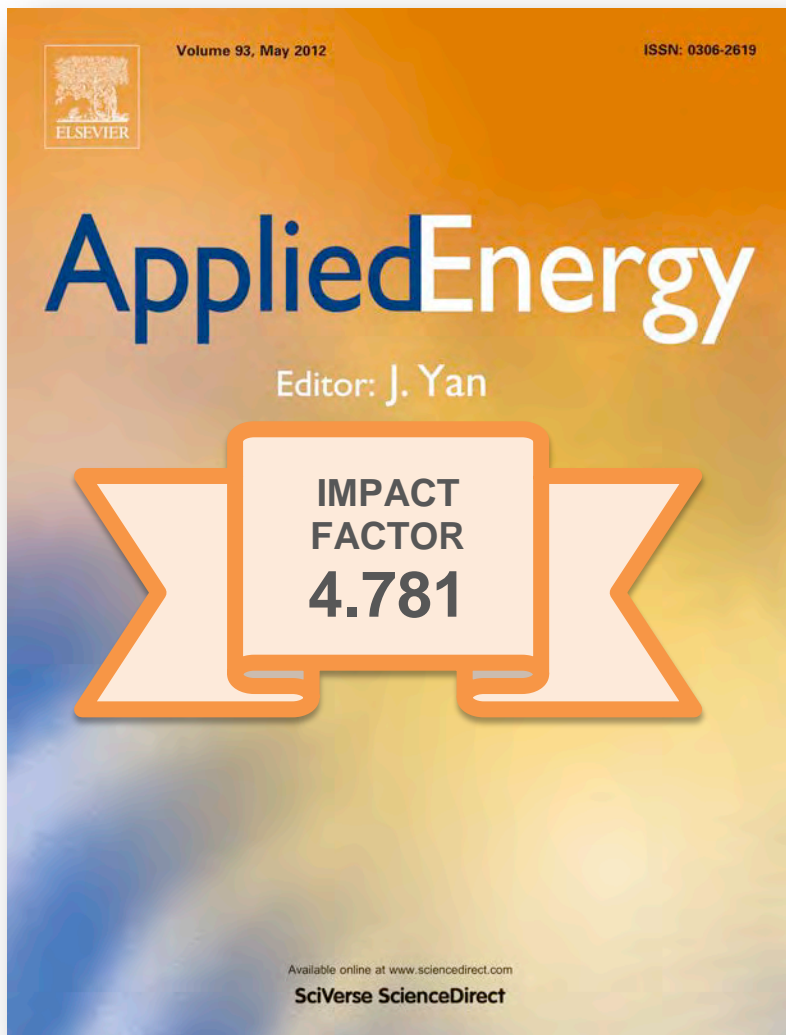
Outlet Type B

# Sponsors Acknowledgement





# SUBMIT YOUR NEXT PAPER TO APPLIED ENERGY



*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. Articles from the journal were downloaded >1.72 million times in 2013 (196 per hour)!

*Applied Energy* ranks highly on the following websites amongst energy journals:

- Google Scholar: 4<sup>th</sup> in the Sustainable Energy category;
- SCImago Journal and Country Rank:
  - 1<sup>st</sup> in Energy (miscellaneous)
  - 4<sup>th</sup> in Energy and Power Technology
  - 7<sup>th</sup> in Energy (all)

**Editor-in-Chief: J. Yan,**  
KTH Royal Institute of Technology, Stockholm, Sweden

[www.elsevier.com/locate/apenergy](http://www.elsevier.com/locate/apenergy)



# Program at a Glance

AE = Advanced Energy Systems	RE=Renewable Energy
CC = Climate Change Mitigation	ESI= Special session by ESI
EM = Energy Management, Policy & Economics	JST=Special session by JST
ES=Energy Sciences	YS=Panel Session: Young Scientists
PG=Power Generation & Polygeneration	CT=Panel Session: CleanTech. Transfer & Diffusion
ESE=Energy system & efficiency improvement	L = lecture: Scientific publishing

Registration: May 30: 14:00 - 17:00; May 31 - June 1: 8:00 - 17:00; June 2: 8:00-12:00

Reception: 17:30, May 30

## Day 1: May 31

08:30-09:00	Opening													
09:00-10:30	keynote 1 & Keynote 2													
10:30-10:45	Tea/Coffee Break													
10:45-12:15	keynote 3 & keynote 3													
12:15-13:10	Lunch													
13:10-15:30	1-A3	1-B3	1-C3	1-D3	1-E3	1-F3	1-G3	1-H3	1-I3	1-J3	1-K3	1-L3	1-M3	
	AE	JST	ES	RE	ESE	ESE	EM	EM	ESI	RE	RE	RE	CC	
15:10-15:30	Tea/Coffee Break													
15:30-17:10	1-A4	1-B4	1-C4	1-D4	1-E4	1-F4	1-G4	1-H4	1-I4	1-J4	1-K4	1-L4	1-M4	
	AE	JST	ES	YS	ESE	ESE	EM	EM	ESI	RE	RE	RE	CC	
17:10-18:30	Applied Energy: editorial board meeting													

## Day 2: June 1

08:15-09:55	2-A1	2-B1	2-C1	2-D1	2-E1	2-F1	2-G1	2-H1	2-I1	2-J1	2-K1	2-L1	2-M1	
	AE	JST	ES	CC	ESE	ESE	EM	EM	EM	RE	RE	RE	CC	
09:55-10:15	Tea/Coffee Break													
10:15-12:25	2-A2	2-B2	2-C2	2-D2	2-E2	2-F2	2-G2	2-H2	2-I2	2-J2	2-K2	2-L2	2-M2	
	AE	JST	ES	L	ESE	ESE	EM	EM	RE	RE	RE	RE	CC	
12:15 - 13:10	Lunch													
13:10-15:10	2-A3	2-B3	2-C3	2-D3	2-E3	2-F3	2-G3	2-H3	2-I3	2-J3	2-K3	2-L3	2-M3	
	CC	JST	ES	CT	ESE	ESE	EM	EM	PG	ES	RE	RE	CC	
15:10-15:30	Tea/Coffee Break													
15:30-17:10	2-A4	2-B4	2-C4	2-D4	2-E4	2-F4	2-G4	2-H4	2-I4	2-J4	2-K4	2-L4	2-M4	
	AE	JST	RE	AE	ESE	ESE	EM	EM	PG	RE	RE	RE	CC	
	Conference Banquet													

## Day 3: June 2

08:15-09:55	3-A1	3-B1	3-C1	3-D1	3-E1	3-F1	3-G1	3-H1	3-I1	3-J1	3-K1	3-L1	3-M1	
	AE	ES	ES	EM	ESE	ESE	EM	EM	PG	AE	RE	RE	CC	
09:55-10:15	Tea/Coffee Break													
10:15-12:15	3-A2	3-B2	3-C2	3-D2	3-E2	3-F2	3-G2	3-H2	3-I2	3-J2	3-K2	3-L2	3-M2	
	AE	ES	ES	AE	ES	ESE	EM	AE	PG	RE	RE	RE	CC	
12:15:13:10	Lunch													
13:10-15:10	3-A3	3-B3	3-C3	3-D3	3-E3	3-F3	3-G3	3-H3	3-I3	3-J3	3-K3	3-L3	3-M3	
	AE	ES	ES	RE	RE	ESE	CC	EM	PG	RE	RE	RE	CC	
15:10-15:30	Tea/Coffee Break													
15:30-17:10	3-A4	3-B4	3-C4	3-D4	3-E4	3-F4	3-G4	3-H4	3-I4	3-J4	3-K4	3-L4	3-M4	
	AE	ES	ES	ESE	ES	ESE	EM	EM	PG	RE	RE	RE	EM	

# Oral Presentations

## Day 1

08:30–09:00				<b>OPENING</b>
09:00-09:45				<b>KEYNOTE 1</b>  ‘Four Elements to Make a Low-Carbon Taiwan’ Prof. Falin Chen, National Taiwan University
09:45-10:30				<b>KEYNOTE 2</b>  ‘Future Earth: the challenges we face’ Dr. Mark Stafford Smith
10:30-10:45				<b>TEA/COFFE BREAK</b>
10:45-11:30				<b>KEYNOTE 3</b>  ‘The Greening of Asia: A Business Case for Optimism’ Mr. Mark L. Clifford, Asia Business Council
11:30-12:15				<b>KEYNOTE 4</b>  ‘Hydrogen for Road Transportation-A Pathway to Renewable Energy’ Prof. Dr. Detlef Stolten, RWTH Aachen University, Germany
12:00-13:10				<b>LUNCH</b>
<b>Room: A</b> <b>Session Name: Fuel Cell (I)</b> <b>Session Chair:Umberto Desideri</b>				
Time	Paper ID	Author	Paper Title	
13:10-13:30	635	Vanatpornratt Sawasdee and Nipon Pisutpaisal	Simultaneous Electricity Generation and Removal Pollutants in Nitrogen-rich Wastewater using Microbial Fuel Cells	
13:30-13:50	638	Pinanong Tanikkul and Nipon Pisutpaisal	Electric generation from carbohydrate-rich wastewater using air-cathode SCMFC	
13:50-14:10	27	Wang Hsiang-Cheng, Hou Kung-Hsu, Lu Chen-En and Ger Ming-Der	The study of electroplating trivalent Cr-C alloy coatings with different current density on copper bipolar plates in PEMFCs	
14:10-14:30	786	Suthida Authayanun, Worasorn Pothong, Kittima Ngamsai, Artitaya Patniboon and Amornchai Arpornwichanop	Effect of Water Transport on the Electrical Performance of PEM Fuel Cells	
14:30-14:50	799	Pu He, Kui Jiao and Qing Du	Effect of anode and cathode humidification in alkaline membrane fuel cell	
14:50-15:10	791	Yan-Yu Chen and Hsiang-Yu Wang	Fabrication of conductive microparticles as anodal electrode in microfluidic microbial fuel cell	
<b>Room: B</b> <b>Session Name: GCP &amp; JST-RISTEX session: Energy Resilient Urban Planning (ERUP) (I)</b> <b>Session Chair:Yoshiki Yamagata, Perry Yang</b>				
Time	Paper ID	Author	Paper Title	
13:10-13:30	460	Benger	Towards Low Carbon City Planning in a Medium Sized Low Density City	
13:30-13:50	761	Sharifi and Yamagata	Resilient urban planning: Major principles and criteria	
13:50-14:10	216	Seya et al.	Creation of future compact urban form scenarios of Tokyo in combination with adaptation policies	
14:10-14:30	811	Quan et al.	Computing energy performance of building density, typology and urban frits	
14:30-14:50	763	Kotsopoulos et al.	The Three Autonomous Architectures of a Connected Sustainable Residential Unit	
14:50-15:10			Discussion	
<b>Room: C</b> <b>Session Name: Numerical simulations of energy processes/systems</b> <b>Session Chair: Rebei Bel Fdhila</b>				
Time	Paper ID	Author	Paper Title	
13:10-13:30	668	Sin Chew Poh, See Yoong Sim, Wen Tong Chong, Ahmad Fazlizan, Sook Yee Yip, Hew Wooi Ping, Wan Zaidi Wan Omar and Zaidi Md Zain	Computational fluid dynamics simulation of the effect of guide-vane angles on the performance of the exhaust air energy recovery turbine generator	
13:30-13:50	117	Yimo Luo, Hongxing Yang and Lin Lu	CFD simulation of the liquid flow on structured packing in the liquid desiccant dehumidifier	
13:50-14:10	882	Deqi Wang, Lin Lu, Wenke Zhang and	Numerical and analytical analysis of groundwater influence on the pile ground heat exchanger	

		Ping Cui	with cast-in spiral coils
14:10-14:30	340	Mersedeh Ghadamgahi, Patrik Ölund, Anders Lugnet, Mohsen Saffari Pour and Weihong Yang	Design optimization of flameless-oxyfuel soaking pit furnace using CFD technique
14:30-14:50	691	Guoping Su, Yun Liu, Hongguang Zhou, Jianli Zhang and Xiaoze Du	Numerical Simulation of Plate Evaporators in Multi-Effect Distillation Seawater Desalination
14:50-15:10	795	Lingyu Chen, Xinhuan Zhou, Lanlan Jiang, Yu Liu, Yongchen Song, Bohao Wu, Yuechao Zhao and Bo Su	Temperature and Velocity map measurement using MRI
<b>Room: D</b>			
<b>Session Name: Low Emission (I)</b>			
<b>Session Chair: Enrico Cagno, Tetsuo Tezuka</b>			
Time	Paper ID	Author	Paper Title
13:10-13:30	685	Wenbin Lin, Alun Gu, Bin Liu and Xin Wang	Emission Trading Scheme and Feed-in Tariff Policy in China: Alternative or Integrated?
13:30-13:50	821	Yingying Lu and David Stern	Substitutability and the Cost of Climate Mitigation Policy
13:50-14:10	1104	Sheng Su, Guangyuan Liu, Na Wang, Yinhong Li and Xianzhong Duan	Implication of climate change induced variation in wind extremes on wind farm in mountainous area of central China—A case study of Hengshan
14:10-14:30	1252	Liang May, Yu Wang and Gehua Wang	China's low-carbon-city development with ETS: Forecast on the energy consumption and carbon emission of Chongqing
14:30-14:50	1317	Binbin Peng, Huibin Du, Shoufeng Ma, Ying Fan and David C. Broadstock	The urban transport energy saving and emission reduction potential evaluation model: A case study of Tianjin, China
14:50-15:10	1084	Art Nash	Alaskan Renewable Schools- Burning Wood into Educational Dollars!
<b>Room: E</b>			
<b>Session Name: Energy System (I)</b>			
<b>Session Chair: Hongguan Jin</b>			
Time	Paper ID	Author	Paper Title
13:10-13:30	94	Dong Han, Tao Peng, Chen Yue, Wenhao Pu and Weifeng He	Advanced energy saving in the evaporation system of ammonium sulfate solution with self-heat recuperation technology
13:30-13:50	221	Qier An, Haizhong An, Wei Fang and Lang Wang	Embodied Energy Flow Network of Chinese industries: A complex network theory based analysis
13:50-14:10	855	Wei Wu and Veni Indah Christiana	Scenario-oriented design of a stand-alone hybrid power generation system using ammonia/urine
14:10-14:30	542	Lijun Zhang and Xiaohua Xia	An optimisation model for reducing energy usage of coal washing plants
14:30-14:50	432	Guolian Hou, Rong Huang, Xu Bai, Jianhua Zhang	The Design of Nonlinear State Observer and its Application in Power Plant
14:50-15:10	147	Qinhong Chen, Geoffrey Hammond and Jonathan Norman	Contrasting thermodynamic, technical and economic potentials: An example of organic Rankine cycle use within UK industry
<b>Room: F</b>			
<b>Session Name: Heat pump and refrigeration system (I)</b>			
<b>Session Chair: Li Zhao, Hatf Madani</b>			
Time	Paper ID	Author	Paper Title
13:10-13:30	849	Carolina Carmo, Nina Detlefsen and Mads Nielsen	Smart Grid enabled heat pumps: an empirical platform for investigating how residential heat pumps can support large-scale integration of intermittent renewables
13:30-13:50	1309	Fu Wing Yu	Review of standards for energy performance of chiller systems serving commercial buildings
13:50-14:10	894	Hatef Madani	The common and costly faults in Heat Pump systems
14:10-14:30	919	Yuan Liu, Qi Wang and Ju Jun Xiao	Energy saving potential on centrifugal water chiller with frequency converter system: a case study in China
14:30-14:50	1189	Pavel Makhnatch and Rahmatollah Khodabandeh	The role of environmental metrics (GWP, TEWI, LCCP) in the selection of low GWP refrigerant
14:50-15:10	257	Hainan Zhang, Shuangquan Shao, Huiming Zou and Changqing Tian	Performance analysis on hybrid system of thermosyphon free cooling and vapor compression refrigeration for data centers in different climate zones of China
<b>Room: G</b>			
<b>Session Name: Low emission (II)</b>			
<b>Session Chair: Ke Wang, Art Nash</b>			
Time	Paper ID	Author	Paper Title
13:10-13:30	320	Vincent Cheng and Geoffrey Hammond	Energy Density and Spatial Footprints of Various Electrical Power Systems
13:30-13:50	214	Fei Teng, Shuangshuang Song and Chi Zhang	Inequality decomposition in the distribution of carbon emission across country groups: historical trends and future implication
13:50-14:10	302	Lining Wang and Wenying Chen	Future CO2 Emissions Allowances and Inequality Assessment under Different Allocation Regimes
14:10-14:30	623	Ambrose Doodoo, Leif Gustavsson and Farshid Bonakdar	Effects of future climate change scenarios on overheating risk and primary energy use for Swedish residential buildings
14:30-14:50	715	Muhammad Kunta Biddinika, Bayu Indrawan, Koji Tokimatsu, Kunio Yoshikawa and Fumitake Takahashi	Renewable energy on the Internet: the readability of Indonesian biomass websites
14:50-15:10	404	Peng Xu and Ying Ji	Load Superposition and Shifting Method with Simulation tools for Energy Planning and the Case Analysis

**Room: H**  
**Session Name: Energy planning (I)**  
**Session Chair: Andrea Trianni**

Time	Paper ID	Author	Paper Title
13:10-13:30	101	Hsueh-Hsien Chang, Putu Wegadiputra Wiratha and Nanming Chen	A Non-Intrusive Load Monitoring System Using an Embedded System for Applications to Unbalanced Residential Distribution Systems
13:30-13:50	483	Abdur Rohman and Hisashi Kobayashi	Estimation on Possibility and Capacity of Residential Peak Electricity Demand Reduction by Demand Response Scenario in Rural Areas of Japan
13:50-14:10	766	Sam Sichilalu, Xiaohua Xia and Jiangfeng Zhang	Optimal scheduling strategy for a grid-connected photovoltaic system for heat pump water heaters
14:10-14:30	876	Tetyana Mamchych and Fredrik Wallin	Looking for Patterns in Residential Electricity Consumption
14:30-14:50	148	Yapeng Li, Yaodong Wang, Dawei Wu and Anthony Paul Roskilly	Dynamic electricity demand prediction for UK households
14:50-15:10	676	Xunzhang Pan, Fei Teng and Gehua Wang	Energy transition within a carbon constrained world: How allocation schemes influence the development of energy system in the future?

**Room: I**  
**Session Name: ESI session (I) - Regional and cross-country level discussions**  
**Session Chair: SK Chou, Tony Owens**

Time	Paper ID	Author	Paper Title
13:10-13:30	6	Victor Nian and John Baully	Nuclear Power Developments: Could Small Modular Reactor Power Plants be a "Game Changer"? – The ASEAN Perspective
13:30-13:50	188	Augustin Boey and Bin Su	Low-carbon transport sectoral development and policy in Hong Kong and Singapore
13:50-14:10	283	Melissa Low and Allan Loi	Assessment of ASEAN BAU-Emissions Reduction Targets: How Do They Measure Up?
14:10-14:30	405	Kamal Soundararajan and Eulalia Han	Probabilistic analysis of marine fuels in emission controlled areas
14:30-14:50	1286	Elsbeth Thomson and Anton Finenko	Estimating the Potential Emissions from Chinese Power Plants that Use Coal Which Has Been Mined Illegally in Southeast Asia
14:50-15:10	603	Zhiqiang Lv, Alun Gu and Yu Liu	CO2 emissions in China: analysis based on factor decomposition method

**Room: J**  
**Session Name: PV system (I)**  
**Session Chair: Hongxing Yang**

Time	Paper ID	Author	Paper Title
13:10-13:30	509	Pietro Elia Campana, Ye Zhu, Elena Brugiati, Hailong Li and Jinyue Yan	PV water pumping for irrigation equipped with a novel control system for water savings
13:30-13:50	2	Tao Ma, Hongxing Yang, Lin Lu and Jinqing Peng	An optimization sizing model for solar photovoltaic power generation system with pumped storage
13:50-14:10	1175	Kanzumba Kusakana and Herman Vermaak	Techno-economic analysis of solar tracking systems in South Africa
14:10-14:30	274	Danny H W Li, Daniel Santoni, Eric W M Lee and Joseph C Lam	Estimation of photovoltaic energy output under various weather conditions
14:30-14:50	765	Jiyun Qin and Eric Hu	Performance evaluation of renewable energy aided power plants
14:50-15:10	920	Ali M Baniyounes, Yazeed Yasin Ghadi, Mohammad G Rasul, Mohammad Alomari and Adnan Manasreh	An Overview of Solar Cooling Technologies Markets Development and its Managerial Aspects

**Room: K**  
**Session Name: Biofuel (I)**  
**Session Chair: Shizhong Li, Sebastian Schwede**

Time	Paper ID	Author	Paper Title
13:10-13:30	33	Ren-Hua Yeh, Yu-Sheng Lin, Tzu-Hsien Wang and Wen-Chien Lee	Bioethanol Production from Pretreated Miscanthus floridulus Biomass by Simultaneous Saccharification and Fermentation
13:30-13:50	1291	Sijing Feng and Yen-Han Lin	Ethanol fermentation under dissolved carbon dioxide control
13:50-14:10	847	Tsung-Yu Tsai, Yung-Chung Lo and Jo-Shu Chang	Effect of medium composition and pH control strategies on butanol fermentation with Clostridium acetobutylicum
14:10-14:30	1089	Krisana Chantoom, Nunthaphan Vikromvarasiri and Nipon Pisutpaisal	Ethanol Production from Waste Glycerol using Enterobacter aerogenes
14:30-14:50	844	Md Hazrat Ali, Mohammad G Rasul, M.M.K. Khan, A.K. Azad and M. M. K. Bhuiya	Utilization of polymer wastes as transport fuel resources- a recent development
14:50-15:10	1073	Saowaluck Haosagul, Siriorn Boonyawanich, Nipon Pisutpaisal and Ubonrat Sirisukpoka	Biomethane Production from Co-digestion of Banana Peel and Waste Glycerol

**Room: L**  
**Session Name: Bio-Hydrogen**  
**Session Chair: Weihsin Chen, WenChien Lee**

Time	Paper ID	Author	Paper Title
13:10-13:30	458	Po-Min Kao, Bing-Mu Hsu, Kuan-Hao Huang, Chi-Wei Tao, Chia-	Biohydrogen production by immobilized co-culture of Clostridium butyricum and Rhodospseudomonas palustris



		Ming Chang and Wen-Tsai Ji	
13:30-13:50	637	Pinanong Tanikkul and Nipon Pisutpaisal	Biohydrogen Production under thermophilic Condition from Ozonated pretreated Palm Oil Mill Effluent
13:50-14:10	648	Rong-Yuan Jou	Measurement of Light Intensity Profiles of Light-Emitting Diodes in a Cylindrical Tank
14:10-14:30	1204	Noraishah Saidina Amin and Saeed Delavari	Photocatalytic conversion of carbon dioxide and methane over titania nanoparticles coated mesh: Optimization study
14:30-14:50	1179	Kai He and Liejin Guo	A-Novel-CdS-Nanorod with Stacking Fault Structures: Preparation and Properties of Visible-Light-Driven Photocatalytic Hydrogen Production from Water
14:50-15:10	210	Qiaobao Zhang and Kaili Zhang	Solar hydrogen generation from water splitting using ZnO/CuO hetero nanostructures
<b>Room: M</b>			
<b>Session Name: CCS (I)</b>			
<b>Session Chair: Jinying Yan, David Berstad</b>			
Time	Paper ID	Author	Paper Title
13:10-13:30	133	Tiantian Zhang, Yufei Tan, Hongxing Yang, Jinhui Zhao and Xuedan Zhang	Locating Gas Pipeline Leakage Based on Stimulus-Response Method
13:30-13:50	102	Xuejin Zhou, Kang Li, Ran Tu, Jianxin Yi, Qiyuan Xie and Xi Jiang	Numerical investigation of the leakage flow from a pressurized CO <sub>2</sub> pipeline
13:50-14:10	104	Wasim Akram Akber Hassan and Xi Jiang	Numerical investigation of multi-layer CO <sub>2</sub> injection in deep saline aquifers with improperly abandoned wells
14:10-14:30	430	Yi Zhou, Zhenyi Liu, Qian Huang, Feng Wang and De Ping Zhang	Small scale experiments of CO <sub>2</sub> boiling liquid expanding vapor explosion in injection pipes
14:30-14:50	973	Jens Hetland	CO <sub>2</sub> capture and storage: A geopolitical issue
14:50-15:10	1285	Xingxun Li and Xianfeng Fan	Pore Wetting Phenomena: Implications to Enhanced Oil Recovery and Geologic Carbon Storage
<b>15:10 – 15:30 TEA/COFFEE BREAK</b>			
<b>Room: A</b>			
<b>Session Name: Hydrogen energy</b>			
<b>Session Chair: Detlef Stolten, Hsiang-Yu Wang</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	100	Chang-Chen Chou, Bing-Hung Chen and Duu-Jong Lee	Hydrogen storage in a chemical hydride fuel system containing ammonia borane and Ni-Co/r-GO catalyst
15:50-16:10	193	Shuofeng Wang, Changwei Ji, Bo Zhang and Xiaolong Zhou	Analysis on combustion of a hydrogen-blended gasoline engine at high loads and lean conditions
16:10-16:30	587	Domenico Borello, Andrea Di Carlo, Carlos Boigues-Muñoz, Stephen McPhail, Giovanni Cinti and Daniele Penchini	The influence of bio-syngas composition on the derating of high temperature fuel cells
16:30-16:50	997	Mohammed Nazeer Ul Hasan Khan and Tariq Shamim	Investigation of Hydrogen Production using Chemical Looping Reforming
16:50-17:10	1006	Taegy Kim, Ju-Hyeong Sim and Chung Jun Lee	Hydrogen generation from solid-state NaBH <sub>4</sub> particles using NaHCO <sub>3</sub> agents for PEM fuel cell systems
<b>Room: B</b>			
<b>Session Name GCP &amp; JST-RISTEX session: Energy Resilient Urban Planning (ERUP) (II)</b>			
<b>Session Chair: Yoshiki Yamagata, Perry Yang</b>			
Time	ID	Author	Paper Title
15:30-15:50	58	Yamagata et al.	Energy Resilient Smart Community: Sharing Green Electricity using V2C Technology
15:50-16:10	759	Yang et al.	Performance metrics for designing an algae-powered eco urban district: A Geodesign perspective
16:10-16:30	1319	Kraxner et al.	Energy resilient solutions for Japan - a BECCS case study
16:30-16:50	529	Brudermann and Yamagata	Towards studying collective dynamics of electricity sharing systems
16:50-17:10			Discussion
<b>Room: C</b>			
<b>Session Name: Zero or low energy building sciences and technologies (I)</b>			
<b>Session Chair: Yuebin Yu</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	252	Xianglong Luo, Qiannan Zhu, Ying Chen and Songping Mo	Synthesis and design of a trigeneration system of large public buildings
15:50-16:10	1127	C K Lee and S K F Fong	Performance analysis of internal-combustion-engine primed tri-generation systems for use in high-rise office buildings in Hong Kong
16:10-16:30	1009	Liguo Li, Yuxin Wang, Wei Ren and Shuang Liu	Thermal Environment Regulating Effects of Phase Change Material in Chinese Style Solar Greenhouse
16:30-16:50	186	Rui Dai, Mengqi Hu and Heejin Cho	An Incentive Optimization for CCHP System Operation using Supervisory Feed-Forward Control
16:50-17:10	974	Xiaoguo Teng and Xin Wang	Comparison of Sensible and Latent heat storage applied in Building Cooling Heating and Power systems

Room D PANEL SESSION			
15:30 – 17:10	Young Scientist Panel: Powering the sustainable development in the 21th Century Dr Victor Nian, Dr. Hailong Li, Dr. Yingying Lu, Dr. Andrea Trianni, Mr. David Stoltz, Dr. Qie Sun		
Room: E Session Name: energy conservation in buildings (I) Session Chair: Franco Cotana, Shiming Deng			
Time	Paper ID	Author	Paper Title
15:30-15:50	386	Jianhua Zhang, Rui Wang, Fuli Shui and Junhui Chen	Performance assessment of controlled Organic Rankine Cycle Systems
15:50-16:10	1281	Caihang Liang	Experiments Investigation of the Parallel-plates Enthalpy Exchangers
16:10-16:30	1337	Fei Xiong, Yin Zhang and Yiping Zhang	Thermodynamic analysis of mixing loss for air handling process in indoor environment
16:30-16:50	11	Yuebin Yu, Denchai Woradechjumroen and Daihong Yu	Virtual Surface Temperature Sensor for Multizone Commercial Buildings
16:50-17:10	198	Ling Tim Wong, Kwok Wai Mui and Chun Pong Lau	Pump efficiency of water supply systems in buildings of Hong Kong
Room: F Session Name: distributed energy systems Session Chair: Xiaohua Xia, Stefano Campanari			
Time	Paper ID	Author	Paper Title
15:30-15:50	208	Xiaoyu Hong, Mingchao Xia and Yinghui Han	A Service restoration method for Active Distribution Network
15:50-16:10	238	Muditha Abeysekera, Marc Rees and Jianzhong Wu	Simulation and analysis of gas networks with decentralized fuel injection
16:10-16:30	281	Gianluca Valenti, Stefano Campanari, Paolo Silva, Nicola Fergnani, Antonino Ravidà, Gioele Di Marcoberardino and Ennio Macchi	Modeling and testing of a micro-cogeneration Stirling engine under diverse conditions of the working fluid
16:30-16:50	349	Paolo Iora, Paolo Chiesa and Stefano Campanari	Comparison of Pressure Driven Electrolytic Membranes (PEM) and Solid Electrolyte Oxygen Pumps (SEOP) for small scale oxygen production
16:50-17:10	539	Giacomo Bruni, Stefano Cordiner, Vincenzo Mulone, Vittorio Rocco and Francesco Spagnolo	A Study of Energy Management in Domestic Microgrids based on Model Predictive Control Strategies
Room: G Session Name: Energy planning (II) Session Chair: Geoffrey Hammond, Reinhard Madlener			
Time	Paper ID	Author	Paper Title
15:30-15:50	249	Carl-Fredrik Lindberg, Kouros Zahedian, Maryam Solgi and Rickard Lindkvist	Potential and limitations for industrial demand side management
15:50-16:10	490	Chenxi Song, Mingjia Li, Fan Zhang, Yaling He and Wenquan Tao	Analysis of energy efficiency for coal-fired power units based on data envelopment analysis model
16:10-16:30	585	Fan Zhang, Chenxi Song, Mingjia Li, Yaling He and Wen-Quan Tao	Study on energy efficiency evaluation index system for fossil-fuel power plant
16:30-16:50	627	Andres Ramirez-Portilla, Enrico Cagno and Andrea Trianni	Is Innovation an enabler of Energy Efficiency? An exploratory study of the foundry sector
16:50-17:10	353	Xianming Ye and Xiaohua Xia	Optimal sampling and maintenance plan for the lighting energy efficiency projects towards sustainable energy savings
Room: H Session Name: CO2 emission in China Session Chair: Maria Jesus Herrerias, Qie Sun			
Time	Paper ID	Author	Paper Title
15:30-15:50	1341	Jin Yang, Alexander Olsson, Jinyue Yan and Bin Chen	A Hybrid Life-Cycle Assessment of CO2 Emissions of a PV Water Pumping System in China
15:50-16:10	248	Krushna Mahapatra, Martina Johansson and Johanna Petersson	Environmental implications of Växjö municipality's energy requirement for new residential buildings
16:10-16:30	251	Xi Yang, Fei Teng and Gehua Wang	The role of China in 2 degree world: the needs for change in energy system planning
16:30-16:50	403	Na Duan, Jun-Peng Guo and Bai-Chen Xie	Environmental performance assessment of China's thermal power industry: a bootstrap-Malmquist approach

16:50-17:10	503	Weilong Huang, Wenying Chen and Xiang Yin	Prospective scenarios of CCS implementation in China's power sector: an analysis with China TIMES
<b>Room: I</b>			
<b>Session Name: ESI session (II) - Country/Region specific discussions</b>			
<b>Session Chair: SK Chou, Tony Owens</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	123	Christopher Len and Victor Nian	Nuclear Versus Natural Gas: An Assessment on the Drivers Influencing Japan's Energy Future
15:50-16:10	303	Anton Finenko and Lynette Cheah	Future Scenarios of Carbon Dioxide Emissions from Singapore's Power Generation Sector
16:10-16:30	770	Anton Finenko and Elspeth Thomson	Future CO2 emissions from Vietnam's coal power generation sector
16:30-16:50	846	Shiva Prasad Susarla and Kim Leng Poh	Equity Returns for Solar PV Leasing in Singapore: Invest or not?
16:50-17:10	714	Muhammad Kunta Biddinika, Pandji Prawisudha, Koji Tokimatsu, Kunio Yoshikawa and Fumitake Takahashi	Does Fukushima Accident shift public attention toward renewable energy?
<b>Room: J</b>			
<b>Session Name: bio-hydrogen</b>			
<b>Session Chair: Erik Dahlquist, Emma Nehrenheim</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	885	Jianjun Hu, Xuehua Zhou, Jie Guo, Yanyan Jing and Quanguo Zhang	Research on effect of initial temperature on photosynthetic hydrogen production with enzymatic micro straws
15:50-16:10	470	Chun-Yen Chen, Ching-Yu Chang and Jo-Shu Chang	Enhancing biohydrogen production from Chlorella vulgaris FSP-E under mixotrophic cultivation conditions
16:10-16:30	747	Chuan Zhang, Rong Chen, Yi Wang, Yanjin Wang and Quanguo Zhang	Effect of mass transfer on performance of substrate degradation within annular fiber-illuminating biofilm reactor for continuous hydrogen production
16:30-16:50	1290	Yen-Han Lin and Chen-Guang Liu	Process design for very-high-gravity ethanol fermentation
16:50-17:10	1002	Tsung-Yeh Ho and Liang-Yih Chen	The Study of Cu <sub>2</sub> ZnSnS <sub>4</sub> Nanocrystal/TiO <sub>2</sub> Nanorod Heterojunction Photoelectrochemical Cell for Hydrogen Generation
<b>Room: K</b>			
<b>Session Name: biogas (I)</b>			
<b>Session Chair: Sebastian Schwede, Monica Odlare</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	1221	Jian Lv, Yang Liu, Hongxing Yang and Shengfeng Ren	Experimental Study on Key Factors Affecting Dairy-based Gas Production
15:50-16:10	1096	Dang Saebea, Suthida Authayanun, Yaneeporn Patcharavorachot and Amornchai Arpornwihanop	Thermodynamic analysis of hydrogen production from the adsorption-enhanced steam reforming of biogas
16:10-16:30	1294	Jie Li	Impact of organic load shock on the dynamic transition of microbial communities during the anaerobic start-up process
16:30-16:50	634	Nunthaphan Vikromvarasiri and Nipon Pisutpaisal	Potential application of Halothiobacillus neapolitanus for hydrogen sulfide removal in biogas
16:50-17:10	1088	Pinanong Tanikkul, Wisakha Phoochinda, Nipon Pisutpaisal and Krisana Chantoom	Improvement of Biomethane Production Yield from Palm Oil Mill Effluent using Ozonation Process
<b>Room: L</b>			
<b>Session Name: biofuel (II)</b>			
<b>Session Chair: Wenming Yang, Wei-Hsin Chen</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	261	Hwai Chyuan Ong, A.S. Silitonga, W.T. Chong, H.H. Masjuki and T.M.I. Mahlia	Investigation of biodiesel production from cerbera manghas as biofuel sources
15:50-16:10	502	Yu-Yuan Wang, Hsiang-Ho Wang, Ti-Lung Chuang, Bing-Hung Chen and Duu-Jong Lee	Biodiesel Produced from Catalyzed Transesterification of Triglycerides Using Ion-Exchanged Zeolite Beta and MCM-22
16:10-16:30	670	Ching-Lung Chen, Jo-Shu Chang, Chien-Chang Huang, Kao-Chia Ho, Ping-Xuan Hsiao and Meng-Shan Wu	A novel biodiesel production method consisting of oil extraction and transesterification from wet microalgae
16:30-16:50	567	Lee Chi-Huan, Hsueh Chung-Chuan and Chen Bor-Yann	Dose-response assessment upon CO <sub>2</sub> tolerance of indigenous microalgal isolates for biofuel production
16:50-17:10	916	Stefanie Van Damme and Francesco Contino	Energy Balance and Environmental Impact of Biodiesel from Algae with Co-production of Triacetin

Room: M			
Session Name: emissions reduction (I)			
Session Chair: Chungen Yin, Bin Chen			
Time	Paper ID	Author	Paper Title
15:30-15:50	314	Abraham Teklay Gebremariam, Martin Bøjer, Anicka Adelsward, Chungen Yin and Lasse Rosendahl	Simulation of flash dehydroxylation of clay particle using gPROMS: A move towards green concrete
15:50-16:10	212	Jui-Yen Lin, Yu-Jen Shih, Yao-Hui Huang and Po-Yen Chen	Potential chemical oxo-precipitation (COP) for remediating wastewater with a high boron concentration using H <sub>2</sub> O <sub>2</sub> /Ba(OH) <sub>2</sub> at room temperature
16:10-16:30	746	Yus Donald Chaniago, Mohd Shariq Khan, Moonyong Lee and Bonggu Choi	Energy efficient optimal design of waste solvent recovery process in semiconductor industry using enhanced vacuum distillation
16:30-16:50	865	Meng Wang, Shengming Zhu and Peng Xu	Application of subway tunnels in forced ventilation to remove urban air pollutants: case study for central zones in Shanghai City
16:50-17:10	654	Ching Tsung Yu, Yi Lin Chen and Han Wen Cheng	Development of an innovative layered carbonates material for mercury removal sorbents



# Oral Presentations

## Day 2

Room: A			
Session Name: Fuel cell (II)			
Session Chair: Umberto Desideri, Chen Bor-Yann			
Time	ID	Author	Paper Title
08:15-08:35	1140	Min Yan, Min Zeng, Ting Ma, Pei Fu and Qiuwang Wang	Numerical study on mass transfer performance of a spiral-like interconnector for planar Solid Oxide Fuel Cells
08:35-08:55	1159	Zaki Yamani Zakaria, Mazura Jusoh, Anwar Johari, Farizul Hafiz Kasim and Mohd Abbas Ahmad Zaini	Thermodynamic analysis of hydrogen production from ethanol-glycerol mixture through dry reforming
08:55-09:15	1211	Arunachala Nadar Mada Kannan	High Power Fuel Cells using Nanoenabled Electrocatalysts
09:15-09:35	1257	Hamid Kazemi Esfeh and Mohd Kamaruddin Abd Hamid	Temperature Effect on Proton Exchange Membrane Fuel Cell Performance Part I: Modelling and Validation
	1258	Hamid Kazemi Esfeh, Mohd. Kamaruddin Abd. Hamida	Temperature Effect on Proton Exchange Membrane Fuel Cell Performance Part II: Parametric Study
09:35-09:55	1267	Simone Giovanni Santori, Domenico Borello, Luca Cedola, Andrea Calabriso and Luca Del Zotto	Development of improved passive configurations of DMFC with reduced contact resistance
Room: B			
Session Name: GCP & JST-RISTEX session: Community-Based Low Carbon Scenarios (CLCS) (I)			
Session Chair: Masayuki Horio, Yoshiki Yamagata			
Time	Paper ID	Author	Paper Title
08:15-08:35	1055	Barisa, et al.	System Dynamic Modelling of Low Carbon Strategy in Latvia
08:35-08:55	1020	Guan, et al.	The Impact of urbanization on Energy Consumption in Mining Areas of China
08:55-09:15	1333	Maeda, et al.	Direct Supply Chain from Forest to House Builder: A Japanese Business Model
09:15-09:35	826	Tonooka, et al.	Life Cycle Assessment of Domestic Natural Material Wood House
09:35-09:55	842	Takaguchi, et al.	Research on environmental performance of the natural material wooden house
Room: C			
Session Name: Advanced energy technology (I)			
Session Chair: Erik Dahlquist			
Time	Paper ID	Author	Paper Title
08:15-08:35	690	Yan-Bin Chen, Yun-Jyun Ou and Yingjeng James Li	Preparation of a novel composite PET/SiO <sub>2</sub> /PVA/poly(perfluorosulfonic acid) membrane for applications on a vanadium redox flow battery
08:35-08:55	1209	Zhongyang Shen, Di Zhang and Yonghui Xie	Heat transfer enhancement in gas turbine U-shaped channel with rib tabulators under rotational effect
08:55-09:15	1299	Dnyaneshwar Waghole, Ravi Warkhedkar and Vinayak Kulkarni	Experimental Investigation on Heat transfer Performance of Silver nanofluid in Absorber/Receiver of parabolic Trough collector
09:15-09:35	1191	Irene Chan, Sharifah Rafidah Wan Alwi, Mimi Haryani Hassim, Zainuddin Abd Manan and Jiří Jaromír Klemeš	Heat Exchanger Network Design Considering Inherent Safety
09:35-09:55	1137	Babak Lotfi, Min Zeng, Bengt Sundén and Qiuwang Wang	Thermo-hydraulic characterization of the smooth wavy fin-and-elliptical tube heat exchangers using new type vortex generators
Room: D			
Session Name: emissions reduction (II)			
Session Chair: Kunio Yoshikawa, Dennis Leung			
Time	Paper ID	Author	Paper Title
08:15-08:35	408	Dachao Ma, Guangyi Zhang, Chinnathan Areeprasert, Kunio Yoshikawa and Lina Gan	NO Emission Characteristics of Hydrothermally Pretreated Antibiotic Mycelial Dreg Combustion in a Drop Tube Reactor
08:35-08:55	465	Yuh-Yih Wu, Bo-Chiuan Chen, Hsien-Chi Tsai, Anh-Trung Tran and Shou-	Design and Control of Semi-Direct Injection Spark Ignition Engine Fuelled by LPG

		Chih Hsiao	
08:55-09:15	301	Yih-Hang Chen and Zong-Han Wu	Optimal Economic Flowsheet Design of Sour-Water-Gas-Shift Reaction/ Acid Gas Removal Processes
09:15-09:35	1345	Kai Deng, Zhong Liang Shen, Ming Xiao Wang, Yan Jun Hu and Ying Jie Zhong	Acoustic Excitation Effect on NOx Reduction in a Laminar Methane-air Flame
09:35-09:55	1240	Muhammad Abbas Ahmad Zaini, Muaz Zakaria, Norulaina Alias, Zaki Yamani Zakaria, Anwar Johari, Siti Hamidah Mohd. Setapar, Mohd. Johari Kamaruddin and Mohd. Azizi Che Yunus	Removal of heavy metals onto KOH-activated ash-rich sludge adsorbent
<b>Room: E</b>			
<b>Session Name: District Heating (I)</b>			
<b>Session Chair:Leif Gustavsson</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	167	Francesco Melino, Maria Alessandra Ancona and Antonio Peretto	An Optimization Procedure for District Heating Networks
08:35-08:55	754	Hongwei Li and Stephen Jia Wang	Challenges in Smart Low-Temperature District Heating Development
08:55-09:15	1149	Guanyi Chen, Zongpeng Xia, Mengjun Yang, Beibei Yan, Weihong Zhou and Xue Tian	Decentralised Heating in a Rural Village using Biomass Gasification and Anaerobic Digestion: Economic and Environmental Analysis
09:15-09:35	1331	Lipeng Zhang, Oddgeir Gudmundsson, Jan Eric Thorsen, Hongwei Li and Svend Svendsen	Optimization of China's centralized domestic hot water system by applying Danish elements
09:35-09:55	748	Nguyen Truong and Leif Gustavsson	Solar heating systems in renewable-based district heating
<b>Room: F</b>			
<b>Session Name: Energy system (II)</b>			
<b>Session Chair:Carl-Fredrik Lindberg, Joakim Lundgren</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	689	Henerica Tazvinga, Xiaohua Xia and Bing Zhu	Optimal energy management strategy for distributed energy resources
08:35-08:55	867	Yin Zhang, Xin Wang and Yinping Zhang	Influence of position of thermal energy storage on the performance of BHP system
08:55-09:15	897	Siwen Zhuo and Xin Wang	Comparison of thermal performance of BHP system with latent thermal energy storage in different locations
09:15-09:35	1190	Nor Erniza Mohammad Rozali, Sharifah Rafidah Wan Alwi, Zainuddin Abd Manan, Jiří Jaromír Klemeš and Mohammad Yusri Hassan	Cost-effective Load Shifting of Hybrid Power Systems Using Power Pinch Analysis
09:35-09:55	1243	Jiangjiang Wang, Zilong Xu, Fu Chao, Kun Yang and Zunkai Zhou	Multi-criteria performance analysis of BHP system taking reliability and availability into consideration
<b>Room: G</b>			
<b>Session Name: energy planning (III)</b>			
<b>Session Chair:Geoffrey Hammond</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	486	Hongjun Zhang, Wenying Chen and Xiang Yin	A bottom-up model analysis of transport sector: a study of China and USA
08:35-08:55	1308	Bret Strogon and David Zilberman	Complex Infrastructure-Vehicle-Consumer Considerations for Enabling Increased Consumption of Fuel Ethanol, Cost Effectively and Energy Efficiently
08:55-09:15	716	Mingjia Li, Chenxi Song, Yaling He and Wenquan Tao	Examining the Volatility degree of Mutual Influence among Different Variables: Thermal Power Plants
09:15-09:35	930	Yuan Xu, Jing Song and Weishi Zhang	Decomposing the impacts of time use on energy consumption
09:35-09:55	1154	Alireza Naseri, Ramin Vafaeipour, Masoud Naseri and Arash Dalil	Optimal energy consumption model in transport
<b>Room: H</b>			
<b>Session Name: Low emission (III)</b>			
<b>Session Chair:Florian Kraxner</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	191	Fei Teng, Xin Wang, Xi Yang and Xunzhang Pan	Understanding marginal abatement cost curves in energy-intensive industries in China: insights from comparison of different models
08:35-08:55	646	Andrea Trianni, Enrico Cagno, Ernst Worrell and Federica Miggiano	Barriers and drivers for energy efficiency: different perspectives from an exploratory study in the Netherlands
08:55-09:15	610	Fei Qin and Rajah Rasiah	Electricity Consumption, Economic Growth, Energy Prices and Technological Innovation: Does Energy Export Dependency and Development Levels Matter?
09:15-09:35	1322	Qi Zhang and Hailong Li	An Integrated Scenario Analysis toward Future Zero-Carbon Energy System

09:35-09:55	347	Yalin Lei, Li Li and Dongyang Pan	Study on the relationships between coal consumption and economic growth of the six biggest coal consumption countries: with coal price as a third variable
<b>Room: I</b>			
<b>Session Name: Biodiesel (I)</b>			
<b>Session Chair: Stefano Campanari, Changwei Ji</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	308	Zhenyu Zhang, Changlu Zhao, Zhaoyi Xie, Fujun Zhang and Zhenfeng Zhao	Study on the Effect of the Nozzle Diameter and Swirl Ratio on the Combustion Process for an Opposed-piston Two-stroke Diesel Engine
08:35-08:55	972	M. M. K. Bhuiya, Mohammad G Rasul, M. M. K. Khan, N. Ashwath, A. K. Azad and M. A. Hazrat	Second Generation Biodiesel: Potential Alternative to-Edible Oil-Derived Biodiesel
08:55-09:15	673	Kao Chia Ho, Jo-Shu Chang, Chien-Chang Huang, Ching-Lung Chen, Ping-Xuan Hsiao and Meng-Shan Wu	Biodiesel production from waste cooking oil by two-step catalytic conversion
09:15-09:35	612	Chih-Cheng Chou, Po-Shian Tzeng, Guan-Jhong Wang, Yu-Hsuan Su, Chia-Jui Chiang and Yong-Yuan Ku	Numerical Study of a Turbo-charged Common-rail Diesel Engine Fueled with Various Biodiesel Blends
09:35-09:55	457	Tsung-Hua Lee and Hsiang-Yu Wang	Simultaneous quantification of cellular lipids and carotenoids inside Chlorella vulgaris using Raman spectrometry
<b>Room: J</b>			
<b>Session Name: Biogas (II)</b>			
<b>Session Chair: Mandy Gerber, Emanuele Bonamente</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	1346	Jie He, Per Engstrand, Olof Björkqvist and Wennan Zhang	Bio-SNG Production in a TMP mill in Comparison with BIGCC
08:35-08:55	633	Nunthaphan Vikromvarasiri, Nipon Pisutpaisal, Verawat Champreda and Thanaporn Laothanachareon	Bioethanol Production from Glycerol by Mixed Culture System
08:55-09:15	871	Zhiguang Chen and Chaokui Qin	Experiments and simulation of a solar-assisted household biogas system
09:15-09:35	636	Vanatpornratt Sawasdee and Nipon Pisutpaisal	Feasibility of Biogas Production from Napier Grass
09:35-09:55	1254	Patrik Klintonberg, Max Jamieson, Viviane Kinyaga and Monica Odlare	Assessing biogas potential of slaughter waste: Can biogas production solve a serious waste problem at abattoirs?
<b>Room: K</b>			
<b>Session Name: biomass combustion</b>			
<b>Session Chair: Hailong Li, Xiaojing Zhang</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	869	Hou-Tsen Chen, Po-Chih Kuo and Wei Wu	Heat Integration of Biomass Co-firing in Coal Power Plant
08:35-08:55	1061	Chuan Wang, Mikael Larsson, Leif Nilsson, Pelle Mellin, Hassan Salman, Anders Hultgren, Weihong Yang and Jonas Lövgren	Injection of solid biomass products into the blast furnace and its potential effects on the integrated steel plant
08:55-09:15	1132	Xuebin Wang, Shuanghui Deng and Houzhang Tan	Effect of biomass/coal co-firing and air staging on NOx emission and combustion efficiency in a drop tube furnace
09:15-09:35	576	Chen Guanyi, Liu Cong, Yan Beibei and Ma Wenchao	Thermal degradation behaviors and kinetics of biomass tar
09:35-09:55	321	Jun Li, Giorgio Bonvicini, Xiaolei Zhang, Weihong Yang and Leonardo Tognotti	Char Oxidation of Torrefied Biomass at High Temperatures
<b>Room: L</b>			
<b>Session Name: PV system (II)</b>			
<b>Session Chair: Gang Xiao, Tariq Shamim</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	145	Matteo Santolini, Massimiliano Renzi and Gabriele Comodi	Performance analysis of a 3.5 kWp CPV system with two-axis tracker
08:35-08:55	1264	Sudhakar Babu, Rajasekar N, Vysakh M, Mohammed Azharuddin, Harshal Vilas, Muralidhar K, Don Paul, Basil Jacob and Karthik Balasubramanian	Application of modified particle swarm optimization for maximum power point tracking under uniform and partial shading condition
08:55-09:15	828	Jifeng Song, Yong Zhu, Dancheng Xia and Yongping Yang	A photovoltaic solar tracking system with bidirectional sliding axle for building integration
09:15-09:35	1103	Abdulrahman Aldossary, Abdulmageed Algareu, Saad Mahmoud and Raya Al-Dadah	Performance of Multi Junction PV Cells with High Concentration Ratio in Saudi Arabia
09:35-09:55	1175	Kanzumba Kusakana and Herman Vermaak	Techno-economic analysis of solar tracking systems in South Africa

Room: M			
Session Name: Emissions reduction (III)			
Session Chair: Jens Hetland, Xinhai Yu			
Time	Paper ID	Author	Paper Title
08:15-08:35	228	Peng Tan, Ji Xia, Cheng Zhang, Qingyan Fang and Gang Chen	Modeling and optimization of NOX emission in a coal-fired power plant using advanced machine learning methods
08:35-08:55	237	Denghui Wang, Shien Hui, Changchun Liu, Tong Shang, Hao Zou and Geng Zhang	Effect of the Shape of SCR Reaction Tower and the Internal Guiding Plates on the Airlow Uniformity
08:55-09:15	258	Chun-Hsiang Chiu, Hsing-Cheng Hsi and Hong-Ping Lin	Multipollutant Control of Hg/SOx/NOx from Coal-Combustion Flue Gases Using Metal-Modified Resource-Recovery SiO2 Nanocomposites
09:15-09:35	1053	Oghare V Ogidiana and Tariq Shamim	Performance Analysis of Industrial Selective Catalytic Reduction (SCR) Systems
09:35-09:55	602	Lina Gan, Wangliang Li, Dachao Ma, Juan Yang, Jian Yu and Guangwen Xu	High-Performance V2O5-WO3/TiO2 Catalyst for Diesel NOX Reduction at Low Temperatures
09:55 – 10:15 TEA/COFFEE BREAK			
Room: A			
Session Name: Fuel Cell (III)			
Session Chair: Umberto Desideri, Chia-Ying Chiang			
Time	Paper ID	Author	Paper Title
10:15-10:35	116	Wei-Hsin Chen, Shih-Chen Lin and Ming-Yueh Huang	Catalytic partial oxidation of methane with the enhancement of dry reforming in an excess enthalpy reactor
10:35-10:55	153	Hao Zhang, Jin Xuan, Hong Xu, Li Zhang, Michael K.H. Leung, Wang Huizhi and Dennis Leung	A theoretical study on photocatalytic fuel cell
10:55-11:15	154	Hao Zhang, Jin Xuan, Hong Xu, Michael K.H. Leung, Wang Huizhi, Dennis Leung, Li Zhang and Xu Lu	A numerical study on microfluidic fuel cell: Improving fuel utilization and fuel operation concentration
11:15-11:35	196	Bo Zhang, Changwei Ji, Shuofeng Wang and Xiaolong Zhou	Idling performance of a hydrogen-blended methanol engine at lean conditions
11:35-11:55	728	Chun-Chen Yang and Yan-Ting Lin	Preparation of a novel composite membrane and PtRu/Hollow carbon sphere anode catalyst for alkaline direct methanol fuel cell
11:55-12:15	507	Chen Bor-Yann, Xu Bin, Qin Lian-Jie and Hsueh Chung-Chuan	Exploring Redox-Mediating Characteristics of Textile Dye-bearing Microbial Fuel Cells: Thionin and Malachite Green
Room: B			
Session Name: GCP & JST-RISTEX session: Community-Based Low Carbon Scenarios (CLCS) (II)			
Session Chair: Masayuki Horio, Yoshiki Yamagata			
Time	Paper ID	Author	Paper Title
10:15-10:35	1304	Hashim, et al.	Green Industry Assessment Tool towards Low Carbon Economy: Palm Oil Mill Case Study
10:35-10:55	1305	Ho, et al.	Low Carbon Industry: Optimal Design of Biomass-Solar Town for Palm Oil Mill
10:55-11:15	807	Takagi, et al.	3D printer Pelton turbine: how to produce appropriate technology connecting with global-local knowledge links
11:15-11:35	775	Yoshikawa, et al.	Scenario Analysis of Greenhouse Gases Reduction by Changing Consumer's Shopping Behavior
11:35-11:55	868	Nagata, et al.	A Mutual Learning Platform ;A Consumer Supplier Collaboration Experiment for Low-carbon Supply Chain Innovation
11:55-12:15			discussion
Room: C			
Session Name: Hydrate (I)			
Session Chair: Praveen Linga			
Time	Paper ID	Author	Paper Title
10:15-10:35	47	Jiafei Zhao, Xiaoqing Chen, Yongchen Song, Zihao Zhu, Lei Yang, Yunlong Tian, Jiaqi Wang, Mingjun Yang and Yi Zhang	Experimental study on a novel way to methane hydrates recovery: combining carbon dioxide replacement and depressurization
10:35-10:55	300	Weiguo Liu, Qianqian Li, Yongchen Song, Liang Zhang, Mingjun Yang, Lijun Wang and Yunfei Chen	Diffusion Theory of Formation of Gas Hydrate from Ice Powder without Melting
10:55-11:15	796	Dong-Liang Zhong, Shuang-Yi He, Dong-Jun Sun and Chen Yang	Comparison of Methane Hydrate Formation in Stirred Reactor and Porous Media in the Presence of SDS
11:15-11:35	880	Ponnivalavan Babu, She Hern Bryan Yang, Somik Dasgupta and Praveen Linga	Methane Production from Natural Gas Hydrates via Carbon Dioxide Fixation
11:35-11:55	794	Dong-Liang Zhong, Kun Ding, Yi-Yu	Methane Recovery from Coal Mine Gas Using Hydrate Formation in Water-in-Oil Emulsion

		Lu, Jin Yan and Wei-Long Zhao	
11:55-12:15	346	Weiguo Liu, Lijun Wang, Mingjun Yang, Yongchen Song, Liang Zhang, Qianqian Li and Yunfei Chen	Experimental Study on the Methane Hydrate Formation from Ice Powders
<b>Room: D PANEL SESSION</b>			
10:15- 12:15	Panel: Scientific publishing: authors-reviewer-editor-publisher		
<b>Room: E Session Name: Energy system (III) Session Chair: Xiaojing Zhang, Xiaohua Xia</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	644	Andrea Trianni, Enrico Cagno and Stefano Farnè	An empirical investigation of barriers, drivers and practices for energy efficiency in primary metals manufacturing SMEs
10:35-10:55	788	Ding Ma, Xiang Yin and Wenying Chen	Co-benefits of Reducing Carbon Emissions in China's Iron and Steel Industry
10:55-11:15	806	Pirouz Shahkarami, Shohreh Fatemi and Longcheng Liu	Modeling and Optimization of Combined Dry and Steam Reforming Process in a Catalytic Fluidized Bed Membrane Reactor
11:15-11:35	1235	Mohd Faris Mustafa, Noor Asma Fazli Abdul Samad and Mohd. Kamaruddin Abd. Hamid	Methodology Development for Designing Energy Efficient Distillation Column Systems
11:35-11:55	1237	Yingying Xiong, Yanqing Niu, Xunbin Wang and Houzhang Tan	Pilot Study on In-Depth Water Saving and Heat Recovery from Tail Flue Gas in Lignite-Fired Power Plant
11:55-12:15	1121	Alessandro Maddaloni, Giacomo Filippo Porzio, Gianluca Nastasi, Teresa Annunziata Branca and Valentina Colla	Exploitation of multi-objective optimization in retrofit analysis: a case study for the iron and steel production
<b>Room: F Session Name: energy Conservation in buildings (II) Session Chair: Shiming Deng</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	38	Henry Nasution, Sumeru K, Azhar Abdul Aziz and Mohd. Yusoff Senawai	Experimental study of air conditioning control system for building energy saving
10:35-10:55	90	Yi Chen, Yimo Luo and Hongxing Yang	Fresh air pre-cooling and energy recovery by using indirect evaporative cooling in hot and humid region – a case study in Hong Kong
10:55-11:15	1229	Fu Jen Wang	Energy Conservation for Chiller Plants by Implementation of Variable Speed Driven Approach in an Industrial Building
11:15-11:35	363	Anna Laura Pisello, Alessandro Petrozzi, Veronica Castaldo and Franco Cotana	Energy refurbishment of historical buildings with public function: pilot case study
11:35-11:55	1282	Ali Alajmi and Hosny Abou-Ziyan	A Simplified Operation Approach of Multiple-Chiller Systems of Institutional Building during Vacation
11:55-12:15	523	Hyesim Han, Jinsook Lee, Jonghun Kim, Cheolyong Jang and Hakgeun Jeong	Thermal comfort control based on a simplified Predicted Mean Vote index
<b>Room: G Session Name: energy economics (I) Session Chair: Qi Zhang, Koji Tokimatsu</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	369	Kathleen Aviso, Christina Cayamanda, Francesca Dianne Solis, Michael Angelo Promentilla, Krista Danielle Yu, Joost Santos and Raymond Tan	P-Graph Approach to Optimal Allocation of Electricity to Economic Sectors in Crisis Conditions
10:35-10:55	21	Raymond Tan, Kathleen Aviso, Michael Promentilla, Krista Danielle Yu and Joost Santos	Fuzzy Inoperability Input-Output Analysis of Mandatory Biodiesel Blending Programs: The Philippine Case
10:55-11:15	508	Juozas Augutis, Linas Martišauskas, Ričardas Krikštolaitis and Elvyra Augutienė	Impact of the Renewable Energy Sources on the Energy Security
11:15-11:35	626	Xiong Weiming, Peggy Mischke, Zhang Da and Zhang Xiliang	Impacts of renewable energy quota system on China's future power sector
11:35-11:55	278	Xiaoqing Hao, Haizhong An and Hai Qi	Evolution of fossil energy international trade pattern based on complex network



11:55-12:15	574	Liang Qiao-Mei, Min Liu and Lancui Liu	The dynamic features of final demand carbon footprint in China from 1997-2010— an input-output analysis
<b>Room: H</b>			
<b>Session Name: life cycle assessments</b>			
<b>Session Chair: Leif Gustavsson, Raymond Tan</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	150	Gabriele Comodi, Maurizio Bevilacqua, Flavio Caresana, Leonardo Pelagalli, Paola Venella and Claudia Paciarotti	LCA analysis of renewable domestic hot water systems with unglazed and glazed solar thermal panels
10:35-10:55	181	Tan Jully, Nik Meriam Nik Sulaiman, Raymond Tan, Kathleen Aviso and Michael Promentilla	A Hybrid Life Cycle Optimization Model for Different Microalgae Cultivation Systems
10:55-11:15	569	Lung-Chieh Lin, Kuo-Wen Chen and Wen-Shing Lee	Analyzing the carbon footprint of the finished bovine leather: a case study of aniline leather
11:15-11:35	625	Ambrose Dodoo and Leif Gustavsson	Effect of different energy efficiency requirements for residential buildings in Sweden on lifecycle primary energy use
11:35-11:55	1332	Emanuele Bonamente, Maria Cleofe Merico, Gloria Pignatta, Anna Laura Pisello, Sara Rinaldi and Franco Cotana	Environmental impact of industrial prefabricated buildings: Carbon and Energy Footprint analysis based on an LCA approach
11:55-12:15	1328	Mohammad Asadullah, Nur Hanina Malek and Amin Azdarpour	Life Cycle Energy Balance Analysis for Producer Gas Production from Bio-oil for Power Generation
<b>Room: I</b>			
<b>Session Name: Solar energy receiver</b>			
<b>Session Chair: Lu Lin, Yian Tai</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	1261	Bala Abdullahi, Saad Mahmoud and Raya Al-Dadah	Optical Performance of Double Receiver Compound Parabolic Concentrator
10:35-10:55	1288	Moucun Yang, Yuezhao Zhu and Ling Zhang	Eurotrough Solar Concentrator Optimization Design Based on Variable Cross Section Beam
10:55-11:15	1045	Hoang-Jyh Leu, Chi-Lin Li and Chang-Mou Wu	Improved photovoltaic performance of ZnO-based dye sensitized solar cell using plasma assisted treatment
11:15-11:35	1265	Mohammed Azharuddin, Natarajan Rajasekar, Sudhakar Babu Thanikanti, Nishant Bilakanti, Vysakh M, Harshal Vilas, Don Paul, Basil Jacob, Muralidhar K and Karthik Balasubramanian	A near accurate Solar PV emulator using dSPACE controller for real-time control
11:35-11:55	1153	Abdulmageed Algareu, Saad Mahmoud and Raya Al-Dadah	Optical Performance of Low Concentration Ratio Reflective and Refractive Concentrators for Photovoltaic Applications
11:55-12:15	773	Hsiu-Po Kuo, An-Ni Huang and Wen-Chu Pien	Preparation of the working electrode of dye-sensitized solar cells using screen printing with alkyd resins
<b>Room: J</b>			
<b>Session Name: PV cells (I)</b>			
<b>Session Chair: Jo-Shu Chang, Emma Nehrenheim</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	575	Wenzhi Li, Mingjian Zhang, Tengfei Zhang and Qiaozhi Ma	Photocatalytic Degradation of bio-oil's oligomers by Pd/TiO <sub>2</sub>
10:35-10:55	1224	Jui-Jen Chang, Caroline Thia, Hsien-Lin Liu, Jiunn-Tzong Wu, Ming-Che Shih, Wen-Hsiung Li and Chieh-Chen Huang	Multipurpose biorefinery: development and application of an engineered yeast for production of both biofuel and antioxidant carotenoids
10:55-11:15	942	Olumide Bolarinwa Ayodele, Wan Mohd Ashri Wan Daud and Hazzim F Abbas	Synthesis of alumina supported nickel-oxalate catalyst for the hydrodeoxygenation of oleic acid into normal and iso-octadecane biofuel
11:15-11:35	1036	Jihong Li, Shizhong Li, Menghui Yu and Ran Du	A cost-effective integrated process to convert sweet sorghum stalks into biofuels
11:35-11:55	967	Jixiang Zhang, Yuanhui Zhang and Zhongyang Luo	Hydrothermal Liquefaction of Chlorella pyrenoidosa in Ethanol-water for Bio-crude Production
11:55-12:15	233	Aristotle T. Ubando, Joel L. Cuello, Alvin B. Culaba, Michael Angelo B. Promentilla and Raymond R. Tan	Multi-Criterion Evaluation of Cultivation Systems for Sustainable Algal Biofuel Production using Analytic Hierarchy Process and Monte Carlo Simulation
<b>Room: K</b>			
<b>Session Name: biomass torrefaction/pyrolysis/gasification (I)</b>			
<b>Session Chair: Wei-Hsin Chen, David Chiamonti</b>			
Time	Paper ID	Author	Paper Title

10:15-10:35	784	Yafei Shen, Peitao Zhao, Dachao Ma and Kunio Yoshikawa	Tar In-situ Conversion for Biomass Gasification via Mixing-Simulation with Rice Husk Char-supported Catalysts
10:35-10:55	398	Ye Huang, Mark Anderson, G.A. Lyons, W.C. McRoberts, Yaodong Wang, David McIlveen-Wright, Neil Hewitt and Tony Roskilly	Technical and Economic Analysis of Energy Generation and Bio-Char Production from Poultry Litter Waste
10:55-11:15	906	Wei-Hsin Chen and Bo-Jih Lin	Characterization of solid and liquid products from bamboo torrefaction
11:15-11:35	305	Xiaojuan Guo, Yongjun Xu, Xiaoxi Yang and Frank G.F Qin	Effect of Heating Rate on Edible Mushroom Bran Pyrolysis
11:35-11:55	628	Quang Vu Bach, Khanh-Quang Tran, Roger A. Khalil and Øyvind Skreiberg	Wet torrefaction of forest residues
11:55-12:15	629	Quang Vu Bach, Khanh-Quang Tran, Roger Antoine Khalil and Øyvind Skreiberg	Effects of CO <sub>2</sub> on wet torrefaction of biomass

**Room: L****Session Name: biomass torrefaction/pyrolysis/gasification (II)****Session Chair: Kunio Yoshikawa, Xuesong Bai**

Time	Paper ID	Author	Paper Title
10:15-10:35	350	Jan Skvaril, Anders Avelin, Jan Sandberg and Erik Dahlquist	The experimental study of full-scale biomass-fired bubbling fluidized bed boiler
10:35-10:55	890	Yi-Li Lin and Hsien Lien	Impact of torrefaction on the physicochemical properties of agricultural biomass
10:55-11:15	993	Huanghuang Zhuang, Hongzhou He, Longfei Zhao and Zhiwei Li	Experimental Study on Combustion Characteristics of Ultrafine Pulverized Fujian Anthracite
11:15-11:35	1148	Guanyi Chen, Xiaoxiong Zhang and Wenchao Ma	Co-pyrolysis of corn cob and waste oil in a fixed bed: Influence of the waste oil on product characteristics
11:35-11:55	769	David Chiaramonti, Renato Nistri, Marco Pettorali, Matteo Prussi and Andrea Maria Rizzo	Biomass carbonization: process options and economics for small scale forestry farms
11:55-12:15	1133	Xuebin Wang, Bo Wei, Houzhang Tan and Shuanghui Deng	Optimization study on air distribution of an actual agricultural up-draft biomass gasification stove

**Room: M****Session Name: CCS (II)****Session Chair: Xi Jiang, Jinying Yan**

Time	Paper ID	Author	Paper Title
10:15-10:35	640	Rahul Anantharaman, Berstad David and Simon Roussanaly	Techno-economic performance of a hybrid membrane – liquefaction process for post-combustion CO <sub>2</sub> capture
10:35-10:55	1118	Kefang Zhang, Zhongliang Liu, Yanxia Li and Anyuan Liu	Improved heat integration options for a MEA CO <sub>2</sub> capture system based on the pinch analysis
10:55-11:15	805	Yongchen Song, Pengfei Lv, Yu Liu, Lanlan Jiang, Yuechao Zhao, Zijian Shen and Junlin Chen	A Study on Combination of Polymer and CO <sub>2</sub> Flooding Using Magnetic Resonance Imaging
11:15-11:35	839	Qian Fu, Yasuki Kansha, Chunfeng Song, Yuping Liu, Masanori Ishizuka and Atsushi Tsutsumi	An advanced cryogenic air separation process for oxy-combustion based on self-heat recuperation technology
11:35-11:55	330	J. F. D. Tapia, Jui-Yuan Lee, Raymond Ooi, Dominic Foo and Raymond Tan	CO <sub>2</sub> Allocation for Scheduling Enhanced Oil Recovery (EOR) Operations with Geological Sequestration using Discrete-Time Optimization
11:55-12:15	1272	Shuai Deng, Ruikai Zhao, Li Zhao and Yuting Tan	Energy efficient considerations on carbon dioxide capture: Solar thermal engineering (Part I)
	1273	Shuai Deng, Ruikai Zhao, Li Zhao and Yuting Tan	Energy efficient considerations on carbon dioxide capture: Solar thermal engineering (Part II)

12:15-13:10

LUNCH

**Room: A****Session Name: CCS (III)****Session Chair: Xi Jiang, Mengxiang Fang**

Time	Paper ID	Author	Paper Title
13:10-13:30	176	Shou-Heng Liu, Wun-Hu Sie, Feng-Sheng Zheng and Wang Yu-Hsiang	Ionic liquids incorporated amine-modified mesoporous solid sorbents for enhanced durability of CO <sub>2</sub> capture
13:30-13:50	219	Chunfeng Song, Masanori Ishizuka, Yasuki Kansha, Atsushi Tsutsumi and Qian Fu	Reduction of energy consumption in adsorption CO <sub>2</sub> capture process using self-heat recuperation technology
13:50-14:10	881	Ponnivalavan Babu, Weng Inn Chin, Rajnish Kumar and Praveen Linga	The impact of pressure and temperature on tetra-n-butyl ammonium bromide semi-clathrate process for carbon dioxide capture
14:10-14:30	1116	Mengxiang Fang, Qunyang Xiang, Xuping Zhou, Qinhui Ma and Zhongyang Luo	Experimental study on CO <sub>2</sub> absorption of aqueous ammonia-based blended absorbent

14:30-14:50	1335	Jie Yang, Xinhai Yu, Jinyue Yan, Shantung Tu and Maogen Xu	CO2 capture using absorbents of mixed ionic and amine solutions
14:50-15:10	295	Yi Zhang, Zhaoyan Liu, Yongchen Song, Weiwei Jian, Wanli Xing, Shuyang Liu and Tongtong Li	Densities of the Binary System of Carbon Dioxide and Dodecane from (313 to 353) K and pressures up to 18MPa
<b>Room: B</b>			
<b>Session Name: GCP &amp; JST-RISTEX session: Community-Based Low Carbon Scenarios (CLCS) (III)</b>			
<b>Session Chair: Masayuki Horio, Yoshiki Yamagata</b>			
Time	Paper ID	Author	Paper Title
13:10-13:30	1117	Moriarty and Wang	Low-carbon cities: Lifestyle changes are necessary
13:30-13:50	751	Amagai, et al.	A Community-led Development and Implementation of "Low-speed Electric Bus" for Local Revitalization
13:50-14:10	744	Yamagata, et al.	Creation of gridded population/residential electricity demand scenarios of Japan for 2050 using statistical approaches
14:10-14:30	741	Horio, et al.	The Potential for Massive GHG Reduction by Mass Rural Remigration (the Renewable Energy Exodus): A case study for Japan
14:30-14:50	740	Shigeto, et al.	Socio-technological Co-evolution Approach: An Endeavor by the JST-RISTEX Environment-Energy R&D Program
14:50-15:10	Discussion		
<b>Room: C</b>			
<b>Session Name: Advanced energy system (II)</b>			
<b>Session Chair: Ocktaeck Lim</b>			
Time	Paper ID	Author	Paper Title
13:10-13:30	812	Hesham Baej, Agustin Valera-Medina, Nick Syred, Phil Bowen, Tim O'Doherty and Richard Marsh	Impacts on Blowoff by the CRZ using various syngases for Gas Turbines
13:30-13:50	7	Dongyue Jiang, Wenming Yang, Kian Jon Chua, Jianyong Ouyang and Jing Hua Teng	The evaluation of Second-Law performance of H2/air premixed flame in Micro-combustors with block insert
13:50-14:10	863	Harald H.-W. Funke, Jens Dickhoff, Jan Keinz, Anis Haj Ayed, Alessandro Parente and Patrick Hendrick	Experimental and Numerical Study of the Micromix Combustion Principle Applied for Hydrogen and Hydrogen-Rich Syngas as Fuel with Increased Energy Density for Industrial Gas Turbine Applications
14:10-14:30	1110	Kai Wang, Daming Sun, Ya Xu, Qie Shen, Jiang Zou, Xiaobin Zhang and Limin Qiu	Experimental study on a 500 W traveling-wave thermoacoustic electric generator
14:30-14:50	1241	David Wee Yang Khoo, Yousif Abdalla Abakr and Normah Mohd Ghazali	Radiation heat transfer between the externally heated surface and the regenerator of the thermoacoustic engine
14:50-15:10	400	Fukang Ma, Changlu Zhao and Shuanlu Zhang	The Study on Dual-spark Ignition Rapid Combustion Characteristic of Opposed-Piston Two-stroke GDI Engine
<b>Room: D</b>			
PANEL SESSION			
13:10-15:10	Discussion: Clean Technology Transfer and Diffusion Prof. SK Chou, Dr. J Hetland, Prof. E Dalhquist, Prof. H Jing, Dr Florian Kraxner, Dr. Fangfei Tsau		
<b>Room: E</b>			
<b>Session Name: building energy system control and operation</b>			
<b>Session Chair: Yuebin Yu</b>			
Time	Paper ID	Author	Paper Title
13:10-13:30	313	Yuli Husnil, Moonyong Lee, Bonggu Choi, Nhien Le Cao and Jinho Park	Steady-state optimality analysis for investigating the energy optimal operation of liquefaction cycles
13:30-13:50	482	Nan Wang and Xiaohua Xia	Indoor Human Thermal Comfort Optimal Control with Desiccant Wheel Cooling System
13:50-14:10	593	Riasat Sarwar, Heejin Cho and Mengqi Hu	Uncertainty Analysis of Building Thermal Load Prediction
14:10-14:30	669	Ou Zumin and Sun Lu	Analysis and Prediction of the Temperature Fields Based on in-situ Measured Temperature for CRTS-II ballastless track
14:30-14:50	985	Ligai Kang, Liangxu Liu, Qingsong An, Junhong Yang, Jun Zhao, Hongjie Jia and Dan Wang	The Equivalent Thermal Parameter Model and Simulation of Air Conditioner System in Demand Response Programs
14:50-15:10	459	Ning Mao, Dongmei Pan, Mingyin Chan, Shiming Deng and Mengjie Song	Numerical study on the effects of the height of supply air outlet on air flow, CO2 transport and thermal comfort in a bedroom
<b>Room: F</b>			
<b>Session Name: Zero or low energy building sciences and technologies (II)</b>			
<b>Session Chair: Shiming Deng</b>			
	Paper ID	Author	Paper Title
13:10-13:30	782	Tae-hoon Hong, Minhyun Lee and Jimin Kim	Development of the Process for Deploying Optimal Photovoltaic System

13:30-13:50	925	Yen-Chieh Huang, Chi-Chang Chan, Shui-Jinn Wang and Shin-Ku Lee	Development of building integrated photovoltaic (BIPV) system with PV ceramic tile and its application for building façade
13:50-14:10	1067	Axel Johann and Reinhard Madlener	Profitability of Energy Storage for Raising Self-Consumption of Solar Power: Analysis of Different Household Types in Germany
14:10-14:30	1277	Ronghui Qi, Lin Lu and Hongxing Yang	Energy Consumption of Solar-assisted Internally Cooled/Heated Liquid Desiccant Air-conditioning System In Hong Kong
14:30-14:50	619	Alessandra Scognamiglio and Giorgio Graditi	Photovoltaics and Net Zero Energy Buildings: new concepts towards a smart city vision
14:50-15:10	537	François Garde, Aurelie Lenoir, Alessandra Scognamiglio, Daniel Aelenei, David Waldren, Harald N. Rostvik, Josef Ayoub, Laura Aelenei, Michael Donn, Michel Tardif and Shaan Cory	Net Zero Energy Buildings Solution Sets : Lessons learned from international projects

**Room: G****Session Name: energy planning (IV)****Session Chair: SK Chou, Andrea De Pascale**

Time	Paper ID	Author	Paper Title
13:10-13:30	1013	Omar Shafqat, David Stoltz, Per Lundqvist and Jaime Arias	Participatory Simulation for Energy Target Identification in EcoCities
13:30-13:50	1063	David Stoltz, Omar Shafqat, Jaime Arias and Per Lundqvist	On Holistic Planning in EcoCity development: Today and in the past
13:50-14:10	1220	Fanyi Meng, Peng Zhou, Dequn Zhou and Yang Bai	Inefficiency and Congestion Assessment of Mix Energy Consumption in 16 APEC Countries by using DEA Window Analysis
14:10-14:30	1338	Channing Arndt, Rob Davies, Konstantin Makrelove, Bruno Merven, Faaiqa Hartley and James Thurlow	Economy-wide implications of energy build plans: a linked modeling approach
14:30-14:50	1343	Xianchun Tan, Huihui Di, Xianbo Tan and Baoguang Xu	Study on the Risk Assessment Method in Green Manufacturing-oriented Production Unit of the Manufacturing System
14:50-15:10	437	Mojie Li and Ke Wang	Industrial energy and environmental efficiency in China: Analysis based on 36 major cities with undesirable outputs

**Room: H****Session Name: energy economics (II)****Session Chair: Bo Shen, Haslenda Hashim**

Time	Paper ID	Author	Paper Title
13:10-13:30	1150	Kendon Matthew Bell, Simone P Souza, Bret Strogen and David Zilberman	Environmental and economic impacts of ethanol pipelines in Brazil: A case study
13:30-13:50	1178	Usama Perwez	GHG emissions and monetary analysis of electric power sector of Pakistan: Alternative scenarios and it's implications
13:50-14:10	1342	Yafeng Han, Bob Shen, Huajin Hu and Fei Fan	Optimizing the performance of ice-storage systems in electricity load management through a credit mechanism: An analytical work for Jiangsu, China
14:10-14:30	443	Michael Promentilla, Kathleen Aviso and Raymond Tan	A Group Fuzzy Analytic Network Process to Prioritize Low Carbon Energy Systems in the Philippines
14:30-14:50	554	Alexander Olsson, Mårten Lind and Jinyue Yan	PV Water Pumping for Increased Resilience in Dry Land Agriculture
14:50-15:10	177	Yazeed Y Ghadi, Mohammad G Rasul and Mohammad M.K. Khan	Potential of Saving Energy Using Advanced Fuzzy Logic Controllers in Smart Buildings in Subtropical Climates in Australia

**Room: I****Session Name: large scale power generation systems (I)****Session Chair: Heejin Cho, Melino Francesco**

Time	Paper ID	Author	Paper Title
13:10-13:30	151	Lisa Branchini, Michele Bianchi, Andrea De Pascale and Simone Cesari	Repowering Existing Under-Utilized WTE Power Plant with Gas Turbines
13:30-13:50	703	Cheng Xu, Gang Xu, Yaxiong Fang, Luyao Zhou, Yongping Yang and Dongke Zhang	A novel lignite pre-drying system incorporating a supplementary steam cycle integrated with a lignite fired supercritical power plant
13:50-14:10	901	Shengwei Huang, Gang Xu, Yongping Yang, Chenxu Zhang, Ligang Wang, Ningling Wang and Zhiping Yang	System Integration and Flowsheet Optimization of 1000 MW Coal-fired Supercritical Power Generation Units
14:10-14:30	702	Luyao Zhou, Gang Xu, Yongping Yang, Shifei Zhao, Cheng Xu and Kai Zhang	A comparative study of superheat utilization measures of extraction steam in double reheat power plants
14:30-14:50	915	Ningling Wang, Peng Fu, Yongping Yang, Longfei Zhu and Dianfa Wu	Spatial-temporal energy-saving effect for the diagnosis of energy-consumption benchmark state of thermal power units
14:50-15:10	789	Zhang Bai, Qibin Liu, Hongqiang Li and Hongguang Jin	Performance analysis of a polygeneration system for methanol production and power generation with solar-biomass thermal gasification

Room: J			
Session Name: Heat transfer (I)			
Session Chair: Qiuwang Wang			
Time	Paper ID	Author	Paper Title
13:10-13:30	1141	Mei Lin, Liangbi Wang and Qiuwang Wang	Investigation of evaluation criterion of axial wall heat conduction in tube laminar flow and heat transfer
13:30-13:50	1259	Suraya Hanim Abu Bakar, Mohd. Kamaruddin Abdul Hamid, Sharifah Rafidah Wan Alwi and Zainuddin Abdul Manan	Design Target Selection for Heat Exchanger Network Synthesis Based on Trade-Off Plot
13:50-14:10	1279	Yang Li, Qingsong An, Liangxu Liu and Jun Zhao	Thermal performance investigation of borehole heat exchanger with different U-tube diameter and borehole parameters
14:10-14:30	1326	Armand Fopah Lele, Thomas Rönnebeck, Christian Rohde, Thomas Schmidt, Wolfgang K. L. Ruck and Frédéric Kuznik	Modelling of heat exchangers based on thermochemical material for solar heat storage systems
14:30-14:50	497	Jui-Ching Hsieh, Bo-Heng Lee, Ming-Che Chung and David T.W. Lin	Experimental study of the heat transfer of supercritical carbon dioxide in silica-based porous media
14:50-15:10	267	Gechuanqi Pan, Jing Ding, Jianfeng Lu and Xiaolan Wei	The Simulation of The Steady-State Concentric Cylinder Method For Determining Thermal Conductivity of Sodium Nitrate
Room: K			
Session Name: biomass torrefaction/pyrolysis/gasification (III)			
Session Chair: Xiaoxi Yang, Kunio Yoshikawa			
Time	Paper ID	Author	Paper Title
13:10-13:30	477	Siek-Ting Yong, Shu-Hong Lim, Chien-Wei Ooi, Veena Doshi, Wan Ramli Wan Daud and Siang-Piao Chai	Pyrolysis of Palm waste for the application of direct carbon fuel cell
13:30-13:50	518	Domenico Borello, Roberto Meloni, Paolo Venturini, Andrea Di Carlo, Giulio Valerio Frangioni, Benedetta De Caprariis and Paolo De Filippis	A 3D packed bed model for biomass pyrolysis: mathematical formulation and experimental validation
13:50-14:10	960	Qiang Lu, Zhi-Bo Zhang, Xiao-Qiang Wang, Chang-Qing Dong and Yong-Qian Liu	Catalytic upgrading of biomass fast pyrolysis vapors using ordered mesoporous ZrO <sub>2</sub> , TiO <sub>2</sub> and SiO <sub>2</sub>
14:10-14:30	1021	Yi Yang, Zhongyang Luo, Guoxiang Li, Kongyu Lu, Hengli Zhang and Wen Chen	Catalytic Pyrolysis of Microcrystalline Cellulose with Five Molecular Sieve Based Catalysts in Py-GC-MS
14:30-14:50	675	Guanyi Chen, Huijun Yang, Jingang Yao, Wenchao Ma and Beibei Yan	Overview of upgrading of pyrolysis oil of biomass
14:50-15:10	1223	Noorhaza Alias, Norazana Ibrahim and Mohd. Kamaruddin Abd. Hamid	Pyrolysis of Oil Palm Empty Fruit Bunch by Thermogravimetric Analysis
Room: L			
Session Name: Biodiesel engine			
Session Chair: Tony Roskilly, Chanwgei Ji			
Time	Paper ID	Author	Paper Title
13:10-13:30	359	Panayiotis Tsaousis, Yao Dong Wang, Anthony Roskilly and Gary Caldwell	Algae to energy: Engine performance using raw algal oil
13:30-13:50	1047	Byungchul Choi, Young Kwon Kim, Gilsung Jung, Chunhwan Lee, Xiaolong Jiang and Inchul Choi	Effect of diesel fuel blend with biobutanol on the emission of turbocharged CRDI(common rail direct injection) diesel engine
13:50-14:10	834	H.G. How, H.H. Masjuki, M.A. Kalam and Y.H. Teoh	Engine performance, emission and combustion characteristics of a common-rail diesel engine fuelled with bioethanol as a fuel additive in coconut oil biodiesel blends
14:10-14:30	516	Stefano Cordiner, Vincenzo Mulone, Matteo Nobile and Vittorio Rocco	Effects of Waste Cooking Oil Biodiesel Usage on Engine Fuel Consumption and Emissions: a Study on the Impact of Oxidation Catalyst and Particulate Filter
14:30-14:50	1330	Luu Duc Phuong, Norimichi Takenaka, Luu Van Boi, Pham Ngoc Lan, Kyoshi Imamura and Yasuaki Maeda	Removal of solvent and other contaminants from biodiesel fuel
14:50-15:10	616	Chih-Cheng Chou, Ying-Wei Lin, Chia-Jui Chiang and Yong-Yuan Ku	Experimental Analysis of a Turbo-Charged Common-Rail Diesel Engine Fueled with Biodiesel
Room: M			
Session Name: CCS (IV)			
Session Chair: Yongping Yang, Stefano Campanari			
Time	Paper ID	Author	Paper Title
13:10-13:30	793	Yuan Rong, Zhao Tao and Xu Xianshuo	Regional Characteristics of Impact Factors for Energy-Related CO <sub>2</sub> Emissions in China, 1997–2010: Evidence from Tests for Threshold Effects Based on the STIRPAT Model
13:30-13:50	900	Tolga Baklacioglu and Mustafa Cavcar	Thrust Modeling for Turbofan Engines of Transport Aircraft for Emissions Reduction by Using Genetic Algorithms and Neural Networks



13:50-14:10	1070	Bonggu Choi, Sungsoo Lim, Riezqa Andika, Jinhee Jeon and Moonyong Lee	Detailed Process Simulation of Syngas Treatment with Wet Sulfuric Acid Process in A 300 MWE Integrated Gasification Combined Cycle (IGCC) Power Plant
14:10-14:30	1266	Dan Song and Bin Chen	A Life Cycle Modeling Framework for Greenhouse Gas Emissions of Cement Industry
14:30-14:50	679	Liu Wei	The Impacts of Individual Behavior on Household Daily Travel Carbon Emissions in Beijing, China
14:50-15:10	818	Ruikai Zhao, Li Zhao, Shuai Deng, Yuting Tan and Yinan Liu	Techno-economic study of solar-assisted Post-combustion Carbon Capture system integrated with desalination
<b>15:10 – 15:30 TEA/COFFEE BREAK</b>			
<b>Room: A</b>			
<b>Session Name: Fuel cell (III)</b>			
<b>Session Chair: Detlef Stolten</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	307	Cheng-Lan Lin and Chih-Chung Wang	Enhancement of Electroactivity of Platinum-Tungsten Trioxide Nanocomposites with NaOH-Treated Carbon Support toward Methanol Oxidation Reaction
15:50-16:10	495	Siek-Ting Yong and Siang-Piao Chai	Combustion-synthesized nickel-based catalysts for the production of hydrogen from methane reforming
16:10-16:30	771	Hong Sun, Hao Chen and Ye Wan	Mass Transfer in the HT-PEM Fuel Cell Electrode
16:30-16:50	1126	Saif Almheiri, Song Luo, Shan Jia and Hongtan Liu	Current density variations under land and channel in DMFCs
16:50-17:10	1336	Wei Yu, Xinhai Yu and Shan-Tung Tu	Oxidation of hydrogen off-gas from a fuel cell using a microstructured reactor with hydrophobic Pt-Al <sub>2</sub> O <sub>3</sub> catalyst coating
<b>Room: B</b>			
<b>GCP &amp; JST-RISTEX PANEL SESSION</b>			
15:30 - 17:10	Dr Mahd Nordin Hasan, Mr Shinichiro Izumi, Dr Masayuki Horio, Dr Perry Yang, Dr Yoshiki Yamagata		
<b>Room: C</b>			
<b>Session Name: biodiesel (II)</b>			
<b>Session Chair: Taegyu Kim, Jo-Shu Chang</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	1303	Chun-Yen Chen, Kuei-Ling Yeh, Hsin-Yueh Chang and Jo-Shu Chang	Optimization of outdoor cultivation of microalgae in vertical tubular-type photobioreactor for improving oil/lipid production
15:50-16:10	944	Xiaolei Zhang, Amit Kumar, Ulrich Arnold and Jörg Sauer	Biomass-derived Oxymethylene Ethers as Diesel Additives: A Thermodynamic Analysis
16:10-16:30	988	Qitao Gong, Yuanzheng Feng, Ligai Kang, Mengyuan Luo and Junhong Yang	Effects of light and pH on cell density of <i>Chlorella vulgaris</i>
16:30-16:50	499	Yu-Yuan Wang, Bing-Hung Chen and Duu-Jong Lee	Low-Al Zeolite Beta as Heterogeneous Catalyst in Biodiesel Production from Microwave-Assisted Transesterification of Triglycerides
16:50-17:10	280	A.S. Silitonga, Hwai Chyuan Ong, H.H. Masjuki, T.M.I. Mahlia, W.T. Chong and A.H. Sebayang	Optimization of biodiesel conversion from crude <i>Jatropha curcas</i> , <i>Calophyllum inophyllum</i> and <i>Ceiba pentandra</i> using Response Surface Methodology
<b>Room: D</b>			
<b>Session Name: electric vehicles &amp; battery (I)</b>			
<b>Session Chair: Ottorino Veneri</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	41	Bo-Chiuan Chen, Jen-Chiun Guan and Jhih-Hong Li	Adaptive Power Management Control of Range Extended Electric Vehicle
15:50-16:10	111	Rui Xiong and Hongwen He	Cell state-of-charge estimation for the multi-cell series-connected battery pack with model bias correction approach
16:10-16:30	270	Hongwen He, Hongzhou Qin, Yuanpeng Shui and Karpenko Oleksandr	State of Charge Estimation of Lithium-Ion Battery with Unscented Kalman Filter and RTOS $\mu$ COS-II
16:30-16:50	531	Chenheng Yuan, Huihua Feng, Yanxiao Li and Zhengxing Zuo	Tribological Characteristics of Piston Ring in a Free-piston Engine for Linear Generator
16:50-17:10	608	Clemente Capasso and Ottorino Veneri	Experimental Analysis of A Zebra Battery Based Propulsion System for Urban Bus under Dynamic Conditions
<b>Room: E</b>			
<b>Session Name: Heat pump and refrigeration system (II)</b>			
<b>Session Chair: Umberto Desideri</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	15	Nor Atiqah Zolpakar, Normah Mohd-Ghazali and Robiah Ahmad	Analysis of Increasing the Optimized Parameters in Improving the Performance of a Thermoacoustic Refrigerator
15:50-16:10	879	Peng Yang, Ming Fang and Yingwen	Optimization of a phase adjuster in a thermo-acoustic Stirling engine using response surface

		Liu	methodology
16:10-16:30	183	Renaldo Rasfuldi, Atsushi Tsutsumi, Yasuki Kansha and Yui Kotani	Self-Heat Recuperative Heat Circulator with Thermoelectric Device
16:30-16:50	163	Afiq Aiman Dahlan, Amirah Haziqah Zulkifli, Henry Nasution, Azhar Abdul A., Mohd Rozi Mohd Perang, Hishammudin Mohd Jamil and Ahmad Ammar Zulkifli	Efficient and 'Green' Vehicle Air Conditioning System using Electric Compressor
16:50-17:10	563	Limin Zhang, Yanyan Chen and Ercang Luo	A novel thermoacoustic system for natural gas liquefaction
<b>Room: F</b>			
<b>Session Name: Heat pump and refrigeration system (III)</b>			
<b>Session Chair: Jiri Klemes</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	62	Mengjie Song, Xiangguo Xu, Shiming Deng and Ning Mao	An experimental study on performance during reverse cycle defrosting of air source heat pump with a horizontal multi-circuit outdoor coil
15:50-16:10	464	Yik Teeng Leong, Raymond R. Tan and Irene Mei Leng Chew	Optimization of Chilled and Cooling Water Systems with a Centralized Utility Hub
16:10-16:30	831	Wenxian Zheng, Ying Chen, Nan Hua, Tianming Zhong and Yulie Gong	Comparative performance of an automotive air conditioning system using microchannel condensers with and without liquid-vapor separation
16:30-16:50	1124	Yunting Ge, Savvas Tassou, Idewa Santosa and Konstantinos Tsamos	Design Optimisation of CO2 Gas cooler/Condenser in a Refrigeration System
16:50-17:10	982	Zhaohong He, Hongyu Huang, Lisheng Deng, Haoran Yuan, Noriyuki Kobayashi, Mitsuhiro Kubota, Huhetaoli and Dandan Zhao	Development of novel type of two-stage adsorption chiller with different adsorbents
<b>Room: G</b>			
<b>Session Name: energy economics (III)</b>			
<b>Session Chair: Hatef Madani, Yaodong Wang</b>			
	Paper ID	Author	Paper Title
15:30-15:50	787	Mohammad Ali Hormozi, Mohammad Amin Asoodar, Abbas Abdeslahi and Debendra C. Baruah	Energy use pattern of paddy production systems in Khuzestan province, Iran
15:50-16:10	946	Theerawut Jinayim, Narong Mungkung and Nat Kasayapanand	Performance Analysis of Off-Grid Solar Photovoltaics Electrification System for Sustainable ICTs Development: Field Study in 4 Regions of Thailand
16:10-16:30	1039	Ellen De Schepper, Steven Van Passel, Sebastien Lizin and Bart Durlinger	Off-grid lighting: Economic and environmental performances of solar LED and kerosene lanterns
16:30-16:50	1283	Zulati Litifu	An Application of Developing Renewable Energy in an Extreme Arid and Energy-Scarce Area in Tarim Desert
16:50-17:10	1051	Channing Arndt, Rob Davies, Bruno Merven, Faaiaq Salie and James Thurlow	Economywide Implications of Detailed Energy Build Plans for South Africa: A Linked Modeling Approach
<b>Room: H</b>			
<b>Session Name: energy economics (IV)</b>			
<b>Session Chair: Victor Nian</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	1203	Yang Bai, Peng Zhou, Dequn Zhou, Lixin Tian and Fanyi Meng	Desirable SPR policies in coping with various market uncertainties: a Markov decision process analysis
15:50-16:10	1207	Weiqiong Zhong and Haizhong An	The Role of China in the International Crude Oil Trade Network
16:10-16:30	1	Holger Schloer, Wolfgang Fischer and Jürgen Friedrich Hake	Integrated sustainability assessment of climate, land, energy and water (CLEW) systems in Germany against the background of the UN Green Economy Model and Germany's Sustainability Strategy
16:30-16:50	129	Chiang-Ching Tan and Evan Lau	Econometric Analysis of the Causality between Energy Supply and GDP: The Case of Malaysia
16:50-17:10	264	Huajiao Li, Haizhong An, Jiachen Huang, Xuan Huang and Songtao Mou	The evolution and stability of the maximal connected sub-graph of holding-based network of China's listed energy company
<b>Room: I</b>			
<b>Session Name: grid integration of renewable energy sources</b>			
<b>Session Chair: Chengshan Wang, Fredrik Wallin</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	409	Zhaohong Bie, Jiakun An, Haipeng Xie and Xuwei He	A New Method for Active Power Dispatch in Wind Farms
15:50-16:10	913	Nadia Maïzi, Stéphanie Bouckaert and Vincent Mazauric	Expanding renewable energy by implementing Demand-Response

16:10-16:30	886	Xiao Luo, Shiwei Xia and Ka-Wing Chan	A simple decentralized charging control scheme of plug-in for alleviating wind farm intermittency
16:30-16:50	959	Frank Ling	Hardware and Software Innovations for Renewable Energy Integration: Review of the US Department of Energy's Green Electricity Network Integration (GENI) Program
16:50-17:10	544	Yazeed Ghadi, Mohammad G Rasul and Masud Khan	Recent Developments in Use of Advanced Fuzzy Logic Controllers in Smart Buildings in Subtropical Climate
<b>Room: J</b>			
<b>Session Name: PV system (III)</b>			
<b>Session Chair: Tariq Shamim</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	1313	Jiang Fan, Toh Peng Seng and Leung Kin On	Experimental Study on Glazed mc-Si Solar Photovoltaic/Thermal(PVT) System
15:50-16:10	664	Wen Tong Chong, Wan Khairul Muzammil, Ahmad Fazlizan, Mohammadreza Hassan, Sin Chew Poh, Hamid Taheri and Mohammed Gwani	A Novel Eco-Greenery Compact Hybrid Wind-Solar Energy Generation System
16:10-16:30	289	Gang Xiao, Liang Yan, Cheng Wan, Mingjiang Ni, Zhongyang Luo and Kefa Cen	Experimental study of an air tube-cavity solar receiver
16:30-16:50	820	Peipei Xu, Jianzhong Liu, Yi Xiang and Qi Lei	Numerical simulation and experimental study of the tube receiver's performance of solar thermal power tower
16:50-17:10	1158	M. Effendy Yaacob, Hashim Hizam, M. Bakri Adam, Mohd Amran, Tamer Khatib and Abdul Hameed Abdur Rahim	Performance Test Conditions for Direct Temperature Elements of Multiple PV Array configurations in Malaysia
<b>Room: K</b>			
<b>Session Name: PV cells (II)</b>			
<b>Session Chair: Hongxing Yang, Liang-Yih Chen</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	955	Kong-Wei Cheng, Huei-Jhen Jhang, Chun-Ting Li and Kuo-Chuan Ho	Preparation and characterization of CuIn <sub>1-x</sub> Ga <sub>x</sub> Se <sub>2</sub> nano-powders using solution growth technology for solar energy application
15:50-16:10	60	Hsiu-Po Kuo, Hung-An Tsai, An-Ni Huang and Wen-Chueh Pan	Non-vacuum method for formation of CuIn <sub>0.7</sub> Ga <sub>0.3</sub> Se <sub>2</sub> absorber thin film using screen printing and far infrared rapid thermal annealing
16:10-16:30	462	Cheng-Lan Lin and Chun-Ming Chu	A Study on the Effects of Siloxane Derivatives as Co-adsorbents on the Performance of Dye-Sensitized Solar Cells
16:30-16:50	521	Abebe Tedla, Yu-Tang Mu and Yian Tai	Solid-state Dye-Sensitized Solar Cell using a new Triphenylamine based Polymer as Hole Transporting Material
16:50-17:10	896	Long Tan, Honghang Sun, Xuanting Ye, Yun Liu and Jun Su	Comparing the Evolution of Crystalline Silicon Photovoltaic Cells: Technological Route and National Specialization
<b>Room: L</b>			
<b>Session Name: Thermoelectric Generation System</b>			
<b>Session Chair: Erik Dahlquist, Wei-Hsin Chen</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	439	Weerasak Somkhunthot, Nuwat Pimpabute, Arthorn Vora-Ud, Tosawat Seetawan and Thanusit Burinprakhon	Thermoelectricity of p-CCO and n-ZAO Thin Films
15:50-16:10	570	Tosawat Seetawan, Kunchit Singsoog, Suriya Srichai, Chanchana Thanachayanont, Vittaya Amornkitbamrung and Prinya Chindaprasirt	Thermoelectric Energy Conversion of p-Ca <sub>3</sub> Co <sub>4</sub> O <sub>9</sub> and n-CaMnO <sub>3</sub> Modules
16:10-16:30	856	Xiaolong Gou, Huifeng Ping, Qiang Ou, Heng Xiao and Shaowei Qing	A Novel Thermoelectric Generation System with Thermal Switch
16:30-16:50	399	Wei He, Shixue Wang, Chi Lu, Yanzhe Li and Xing Zhang	Effect of module size on the performance of thermoelectric generator under different cooling ways
16:50-17:10	235	Wei-Hsin Chen	Cooling power and performance of a thermoelectric generator accompanied by a cooler
<b>Room: M</b>			
<b>Session Name: fuel cell (IV)</b>			
<b>Session Chair: Michael K.H. Leung, Chia-Ying Chiang</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	888	Chia-Ying Chiang, Yoon Shin and Sheryl Ehrman	Dopant Effects on Copper Oxide Photoelectrochemical Cell Water Splitting
15:50-16:10	962	Sen Yao, Yaling He, Yinshi Li and Huan Xi	Effect of the Membrane Electrode Assemble Design on the performance of Single Chamber Microbial Fuel Cells

16:10-16:30	978	Taegy Kim and Jincheol Kim	Compact PEM fuel cell system using chemical hydride hydrogen source for portable power generators
16:30-16:50	1029	Bingye Song, Yaling He, Yinshi Li and Zedong Cheng	Anode structure design for the high-performance anion-exchange membrane direct glucose fuel cell
16:50-17:10	1071	Yaneeporn Patcharavorachot, Kidakarn Sangduan, Pimporn Ponpesh, Suttichai Assabumrungrat and Amornchai Arpornwichanop	Integration of ethanol processor and CO <sub>2</sub> absorption to produce hydrogen for fuel cell applications

# Oral Presentations

## Day 3

<b>Room: A</b> <b>Session Name: electric vehicles &amp; battery (II)</b> <b>Session Chair: Ottorino Veneri, Hongwen He</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	485	Huiming Zou, Bin Jiang, Qian Wang, Changqin Tian and Yuying Yan	Performance analysis of a heat pump air conditioning system coupling with battery cooling for electric vehicles
08:35-08:55	605	Clemente Capasso, Diego Iannuzzi and Ottorino Veneri	DC Charging Station for Electric and Plug-in Vehicles
08:55-09:15	729	Chun-Chen Yang and Yi-Xuan Wang	Preparation of high performance LiFePO <sub>4</sub> /C cathode materials by using polymer templates
09:15-09:35	1054	Cheng-Lun Chen, Kuo-Feng Chiu, Hoang-Jyh Leu, Chen-Chung Chen and Chang-Rung Yang	Preparation and Characterization of hyper-branched architecture modified LiMn <sub>2</sub> O <sub>4</sub> thin film cathodes
09:35-09:55	1183	Cheng Lin, Xiaohua Zhang, Rui Xiong and Fengjun Zhou	A Data-Driven Approach to State of Charge Estimation using Extended Kalman Filtering for Lithium-Ion Batteries in Electric Vehicles
<b>Room: B</b> <b>Session Name: Advanced power generation</b> <b>Session Chair: HsiuPo Kuo, Liang-Yih Chen</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	391	Maria Ibáñez-Puy, Cesar Martin-Gomez, Jose Antonio Sacristan Fernandez and Marina Vidaurre-Arbizu	Theoretical Design of an Active Façade System with Peltier Cells
08:35-08:55	724	Yu-Cheng Liu, Young Ku, Ping-Chin Chiu, Hsuan-Chih Wu, Yao-Hsuan Tseng and Yu-Lin Kuo	Feasibility Study of Fe-Ti based Oxygen Carriers for Chemical Looping Combustion
08:55-09:15	1001	Yen-Jhih Chen and Liang-Yih Chen	Effect of Morphology Control on Hematite Nanostructures for Solar Water Splitting
09:15-09:35	1143	Athorn Vora-Ud and Thanusit Burinprakhon	Investigation on the Enhancement of the Thermoelectric Power Factor of ZnO Thin Films by Al-doping using Asymmetric Bipolar Pulsed-DC Magnetron Sputtering Technology
09:35-09:55	1185	Jung-Chang Wang and Li-Wei Ye	Investigation on Thermo-Fluid Characteristics of Al <sub>2</sub> O <sub>3</sub> Nanofluid using Power Generation Facility
<b>Room: C</b> <b>Session Name: biomass torrefaction/pyrolysis/gasification (IV)</b> <b>Session Chair: David Chiaramonti, Wenzhi Li</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	833	Yue Hu, Wei Wang and Xiuning Hua	Reactivity of Iron-Based Oxygen Carriers Prepared by Wet and Dry Mixing Methods for Hydrogen Production via Biomass Derived Syngas Chemical Looping
08:35-08:55	378	Geng Fu, Changlu Zhao, Guoqian Song, Kai Han and Yuchuan Li	Multi-component Vaporization Model for Hexadecane-Benzyl Azide Droplets without Liquid Phase Reaction
08:55-09:15	723	Xiang Ying, Li Zhang, Hong Xu, Yanlun Ren and Jin Xuan	An experimental study on a microchannel reactor for Fischer-Tropsch synthesis
09:15-09:35	1306	Pooya Azadi, George P.E. Brownbridge, Sebastian Mosbach, Oliver R. Inderwildi and Markus Kraft	Production of Biorenewable Hydrogen and Syngas via Algae Gasification: A Sensitivity Analysis
09:35-09:55	277	Yuming Zhang, Guogang Sun, Shiqiu Gao and Guangwen Xu	Mechanism and kinetics of steam gasification of petroleum coke catalyzed by black liquor in fluidized beds
<b>Room: D</b> <b>Session Name: energy market, scenarios and forecasting, and energy security</b> <b>Session Chair: Andrea Trianni, Enrico Cagno</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	178	Fei Wu, Peng Zhou and Dequn Zhou	Does congestion affect total-factor energy efficiency? A theoretical study
08:35-08:55	315	Bubele Papy Numbi, Xiaohua Xia and	Optimal energy control modelling of a vertical shaft impact crushing process



		Jiangfeng Zhang	
08:55-09:15	582	Nelson Sommerfeldt and Hatef Madani	Improved methodology for determining the value of energy from distributed renewables using statistical analysis combined with normative scenarios
09:15-09:35	545	Juozas Augutis, Benas Jokšas, Ričardas Krikštolaitis and Rolandas Urbonas	The criticality measure of energy systems
09:35-09:55	1170	Usama Perwez	Forecasting of Pakistan's net electricity energy consumption on the basis of energy pathway scenarios
<b>Room: E</b>			
<b>Session Name: heat pump and refrigeration system (IV)</b>			
<b>Session Chair: Erik Dahlquist, Hui An</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	112	Xin Cui, Kian Jon Chua and Wenming Yang	Use of indirect evaporative cooling as pre-cooling unit in humid tropical climate: an energy saving technique
08:35-08:55	568	Li Donghui, Wu Zhanghua and Luo Ercang	Experimental investigation on the conversion between heat and power of the kW-class thermoacoustic engine
08:55-09:15	672	Weixiong Chen, Chaoyin Shi, Mengqi Hu, Daotong Chong, Jinshi Wang and Junjie Yan	Numerical and Experimental Analysis of Two Phase Flow in Ejector
09:15-09:35	937	Huan Tong, Jianying Hu, Ercang Luo and Limin Zhang	Thermoacoustic cryocooler with Multi-Cold Fingers for High Temperature Superconductor
09:35-09:55	1056	Girts Vigants, Ivars Veidenbergs, Dagnija Blumberga, Gundars Galindoms and Edgars Vigants	Heat Pump Application for Efficient DH Systems
<b>Room: F</b>			
<b>Session Name: heat pump and refrigeration system (V)</b>			
<b>Session Chair: David Berstad, Jun Zhao</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	1219	Diance Gao, Shengwei Wang, Fu Xiao and Kui Shan	A fault detection and diagnosis method for low delta-T syndrome in a complex air-conditioning system
08:35-08:55	1274	Jianying Hu, Jian Zhu, Shuai Chen, Ercang Luo, Wei Dai and Haibing Li	A Pulse Tube Cryocooler for BOG Recondensation in LNG Tanks
08:55-09:15	332	Mohd Shariq Khan, Jin Ho Park, Moonyong Lee and Yus Donald Chaniago	Energy efficiency process structure design of LNG/NGL recovery for offshore FLNG plant
09:15-09:35	402	Fei Qin, Shuangquan Shao, Changqing Tian and Hongxing Yang	Experimental Investigation on Heating Performance of Heat Pump for Electric Vehicles in Low Ambient Temperature
09:35-09:55	161	Afiq Aiman Dahlan, Henry Nasution, Amirah Haziqah Zulkifli, Azhar Abdul Aziz, Mohd Rozi Mohd Perang and Hishammudin Mohd Jamil	Performance Study of Hydrocarbon Mixture for Green Vehicle Air-Conditioning System
<b>Room: G</b>			
<b>Session Name: thermal energy management (I)</b>			
<b>Session Chair: Xiaoxi Yang, Yaodong Wang</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	230	Mohammed Al-Washahi, Guohong Tian and Alexander Anderson	Performance enhancement of MSF desalination by recovering stage heat from distillate water using internal heat exchanger
08:35-08:55	318	Le Quang Minh, Yuli Amalia Husnil, Jinho Park and Moonyong Lee	Design and optimization of fully thermally coupled distillation scheme for the naphtha splitter process
08:55-09:15	957	Ziye Ling, Jiajie Chen, Qi Zhang, Xiaoming Fang and Zhengguo Zhang	Temperature-dependent thermal conductivity of RT44HC/expanded graphite composite phase change material for thermal management systems
09:15-09:35	991	Yijuan Di, Minrui Fei, Ling Wang and Wei Wu	Multi-objective optimization for economic emission dispatch using an improved multi-objective binary differential evolution algorithm
09:35-09:55	1255	Peter Youssef, Saad Mahmoud and Raya Al-Dadah	Comparative Analysis of Desalination Technologies
<b>Room: H</b>			
<b>Session Name: Energy economics (V)</b>			
<b>Session Chair: Florian Kraxner, Reinhard Madlener</b>			
Time	Paper ID	Author	Paper Title
08:15-08:35	1236	Libo Zhang and Tao Yang	The evaluation and selection of renewable energy technologies in China
08:35-08:55	1344	Xianchun Tan, Dexue Chen, Baihe Gu and Bang Che	Study on China's regional low-carbon development potential: The case of Chongqing city
08:55-09:15	536	Priviledge Cheteni	Barriers and Incentives to widespread adoption of Biofuels Crops by smallholder farmers in Eastern Cape, South Africa
09:15-09:35	355	Ke Wang, Mingming Zhang, Zhimin Wang, Ran Li, Furong Li and Hao Wu	Time of use tariff design for domestic customers from flat rate by model-based clustering
09:35-09:55	1060	Lelde Timma and Dagnija Blumberga	Index Decomposition Analysis of Energy Sector in Latvia

Room: I			
Session Name: thermal energy management (II)			
Session Chair: Chuan Wang, Guohong Tian			
Time	Paper ID	Author	Paper Title
08:15-08:35	319	Boru Jia, Zhengxing Zuo, Huihua Feng, Guohong Tian and A.P. Roskilly	Investigation of the starting process of free-piston engine generator by mechanical resonance
08:35-08:55	1023	Stefan Schimpf and Roland Span	Simulation of a novel solar assisted combined heat pump - Organic Rankine Cycle system
08:55-09:15	1019	Yuanyi Liu, Houzhang Tan, Yiming Zhu, Yibin Wang and Yanqing Niu	Experimental Study on CO/H <sub>2</sub> Deflagration Characteristics under Complex Atmosphere and Temperature Conditions of Boiler Hopper
09:15-09:35	1027	Guoqiang Zhang, Wenlong Xu, Yongping Yang and Dongke Zhang	Utilization of LNG cryogenic energy in a proposed method for inlet air cooling to improve the performance of a combined cycle
09:35-09:55	97	Weifeng He, Dong Han, Chen Yue and Wenhao Pu	A Combined Thermal System with an Air-cooled Organic Rankine Cycle (ORC)
Room: J			
Session Name: Energy storage (I)			
Session Chair: Jean CASTAING-LASVIGNOTTES			
Time	Paper ID	Author	Paper Title
08:15-08:35	961	Xiao Zhen Yuan, Xiao Jun Wang, Ming Fang and Ying Wen Liu	Optimizing design of a new ZBO cryogenic storage tank in microgravity
08:35-08:55	64	Mona-Maria Druske, Armand Fopah-Lele, Kathrin Korhammer, Holger Rammelberg, Wolfgang Ruck, Thomas Schmidt and Nina Wegscheider	Developed materials for thermal energy storage: synthesis and characterization
08:55-09:15	1004	Jayaveera P. Muthusamy, Nicolas Calvet and Tariq Shamim	Numerical Investigation of a Metal-Oxide Reduction Reactor for Thermochemical Energy Storage and Solar Fuel Production
09:15-09:35	621	Jean Castaing-Lasvignottes, François Garde, Mathieu David and Eric Ottenwelter	Modeling of a compressed air energy storage connected to a PV field for NZEB in tropics
09:35-09:55	304	Shing-Fen Tsai, Jie-Ren Ku, Chan-Li Hsueh and Yih-Hang Chen	Solid Sodium Borohydride Tablet with High and Stable Hydrogen Release Rate for Portable Devices
Room: K			
Session Name: renewable energy (I)			
Session Chair: Wennan Zhang			
Time	Paper ID	Author	Paper Title
08:15-08:35	936	A. K. Azad, Mohammad G Rasul, M. M. K. Khan, Anis Omri, M. M. K. Bhuiya and M. A. Hazrat	Modelling of Renewable Energy Economy in Australia
08:35-08:55	5	Shikun Cheng, Zifu Li, Heinz-Peter Mang, Ruiling Gao and Xuemei Wang	Methodology development of evaluating agricultural biomass potential for a biomass power plant in China
08:55-09:15	700	Pelle Mellin, Wenjing Wei, Weihong Yang, Hassan Salman, Anders Hultgren and Chuan Wang	Biomass availability in Sweden for use in blast furnaces
09:15-09:35	1026	Li Lu	A review of assessments on liquid biofuels in China
09:35-09:55	902	Anders Avelin, Jan Skvaril, Robert Aulin, Monica Odlare and Erik Dahlquist	Forest biomass for bioenergy production – comparison of different forest species
Room: L			
Session Name: thermal energy management (III)			
Session Chair: Tony Roskilly			
Time	Paper ID	Author	Paper Title
08:15-08:35	500	Azad Rahman, Mohammad G Rasul, Mohammad M.K. Khan and Subhash Sharma	Aspen Plus based simulation for energy recovery from waste to utilize in cement plant preheater tower
08:35-08:55	1062	Chuan Wang, David Bellqvist, Leif Nilsson, Pavel Ivashechkin, Veronika Reimer, Ricardo Rato, Christelle Guillon, Valentine Weber and Juan-Jose Arribas	Techno-economic assessment of recovery and reuse of low temperature heat in the steel industry by means of process integration
08:55-09:15	1269	Jan Wiedemann and Roland Span	Simulation of an Exhaust Heat Driven Rankine-Cycle for Mobile Applications
09:15-09:35	903	Dongxiang Wang, Xiang Ling and Hao Peng	Ligament Mode Disintegration of Liquid Film at the Rotary Disk Rim in Waste Heat Recovery Process of Molten Slag
09:35-09:55	651	Yap Huey Tyng, Ong Zhi Chao, Chong Wen Tong, Kong Keen Kuan, Khoo Shin Yee, Zubaidah Ismail and Abdul Ghaffar Abdul Rahman	Design Optimization of Shroud-augmented Dual-rotor Exhaust Air Energy Recovery Wind Turbine Generator using Hybrid Nondestructive Evaluation Approach

Room: M			
Session Name: Clean Fuels for Future Engines (I)			
Session Chair: Shijin Shuai			
Time	Paper ID	Author	Paper Title
08:15-08:35	88	Wenming Yang, Hui An, Jing Li, Amin Maghbouli, Kian Jon Chua and S.K. Chou	Numerical investigation on the performance of dual-fuel diesel engine fueled by biodiesel and methane
08:35-08:55	367	Thomas Bohl, Guohong Tian, Weilin Zeng, Xu He and Anthony Roskilly	Optical investigation on diesel engine fuelled by vegetable oils
08:55-09:15	776	F. Zhang, R. Yu and X. S. Bai	DNS of H <sub>2</sub> /air combustion in a constant volume enclosure relevant to HCCI engines
09:15-09:35	798	Ocktaeck Lim, Narankhuu Jamsran and Norimasa Iida	A Computational Study of the Effects of EGR and Intake-Pressure Boost on DME Autoignition Characteristics over Wide Ranges of Engine Speed
09:35-09:55	425	Xiaokang Ma, Fujun Zhang, Kai Han, Zhenxia Zhu and Yangyang Liu	Effects of Intake Manifold Water Injection on Combustion Process and Emissions of Diesel Engine
09:55 – 10:15 TEA/COFFEE BREAK			
Room: A			
Session Name: electric vehicles & battery (III)			
Session Chair: Taegy Kim, Guohong Tian			
Time	Paper ID	Author	Paper Title
10:15-10:35	726	Chun-Chen Yang, Jer-Huan Jang and Jia-Rong Jiang	Comparison electrochemical performances of spherical Nb-doped LiFePO <sub>4</sub> /C cathode materials at low and high temperatures
10:35-10:55	733	Chun-Chen Yang, Jeng-Ywan Shih and Min-Yen Wu	Preparation of silicon oxide coated KS-6 graphite composite anode materials by sol-gel method in lithium ion batteries
10:55-11:15	808	Yu Song, Huihua Feng, Zhengxing Zuo, Mengqiu Wang and Chendong Guo	Comparison research on different injection control strategy of CI free piston linear generator in one-time starting process
11:15-11:35	943	Junqiu Li, Han Wei, Chengning Zhang and Fengchun Sun	Coordinated Control Of Downshift Powertrain Of Combined Clutch Transmissions For Electric Vehicles
11:35-11:55	954	Kanticha Korsesthakarn and Angkee Sripakagorn	Implementation of Energy Storage System with Fleet Management on Electric Shuttle Buses
11:55-12:15	1008	Junqiu Li, Fei Tan, Chengning Zhang and Fengchun Sun	Capacity Fade Diagnosis of Lithium ion Battery Pack in Electric Vehicle Base on Fuzzy Neural Network
Room: B			
Session Name: large scale power generation systems (II)			
Session Chair: Hongguan Jin, Xiaoze Du			
Time	Paper ID	Author	Paper Title
10:15-10:35	1022	Lingnan Wu, Ligang Wang, Yang Wang, Xiaoying Hu, Changqing Dong, Zhiping Yang and Yongping Yang	Component and process based exergy evaluation of a 600MW coal-fired power plant
10:35-10:55	3	Shuichi Torii and Shoto Watanabe	Combustion characteristics of combustion chamber using compost as a fuel
10:55-11:15	75	Yi Zhu, Adetoyese Olajire Oyedun, Maojian Wang, Tesfaldet Gebreegziabher, Yu Zhang, Jin Liu and Chi Wai Hui	Modeling, Integration and Optimization of Biomass and Coal Co-Gasification
11:15-11:35	126	Chinnathan Areeprasert, Prut Chayavanich, Dachao Ma, Bayu Prabowo and Kunio Yoshikawa	Combustion characteristic and NO emission of hydrothermally treated paper sludge
11:35-11:55	1122	Md. Obaidullah, Igor Dyakov, Jean Dominique, Thomas Duquesne, Svend Bram, Francesco Contino and Jacques De Ruyck	CO Emission Measurements and Performance Analysis of 10 kW and 20 kW Wood Stoves
11:55-12:15	606	Mi Yan, Junwei Li, Wanxing Su and Ningfei Wang	Study on Pulse Triggering Combustion instability in a Combustion Chamber
Room: C			
Session Name: heat transfer (II)			
Session Chair: Rebei Bel Fdhila, Jing Ding			
Time	Paper ID	Author	Paper Title
10:15-10:35	659	Minlin Yang, Sheng Chen, Si-Min Huang, Yongjun Xu, Frank G.F. Qin and Xiaoxi Yang	Fluid flow and heat transfer across a randomly distributed elliptical hollow fiber membrane tube bank for air humidification
10:35-10:55	827	Qiang Meng, Yuting Wu and Yaxuan Xiong	Preliminary Study on Start-up Characteristics of Molten Salt Heat Pipes
10:55-11:15	68	Yan Chen, Qie Sun and Ronald Wennersten	Heat transfer characteristics of water during flow boiling in a vertical rectangular mini-channel
11:15-11:35	19	Chungen Yin	Transient heating and evaporation of moving fuel droplets
11:35-11:55	1134	Wanxing Su, Junwei Li, Mi Yan, Bingbing Sun and Ningfei Wang	Evaluation of Nozzle Damping Characteristics by a Pulsed Method
11:55-12:15	1042	Ye Yuan, Yiji Lu, Huashan Bao,	Investigation of a heat pipe heat exchanger integrated with a water spray for the heat recovery

		Yaodong Wang, Wen Wang and Anthony Paul Roskilly	from boiler exhaust gas
<b>Room: D</b>			
<b>Session Name: Thermal energy storage</b>			
<b>Session Chair: Weilong Wang, Hailong Li</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	366	Saman Nimali Gunasekara, Ruijun Pan, Justin Ningwei Chiu and Viktoria Martin	Polyols as Phase Change Materials for Low-grade Excess Thermal Energy Storage
10:35-10:55	1007	Xiaoqin Sun, Quan Zhang, Mario Medina, Kyoung Lee and Linfeng Zhang	On the natural convection enhancement of heat transfer during phase transition processes of solid-liquid phase change materials (PCMs)
10:55-11:15	1065	Christoph Budny, Reinhard Madlener and Christoph Hilgers	Economic Feasibility of Pipeline and Underground Reservoir Storage Options for Power-to-Gas Load Balancing
11:15-11:35	23	Hadi Fauzi, Hendrik S. C. Metselaar, T. M. I. Mahlia and Mahyar Silakhori.	Thermal reliability of myristic acid/palmitic acid/sodium laurate eutectic mixture: a feasibility study of accelerated aging for thermal energy storage application
11:35-11:55	678	Xiaolan Wei, Ming Song, Jing Ding, Qiang Peng and Jianping Yang	New ternary chloride eutectic system for solar thermal energy storage
11:55-12:15	155	Alessandra Cuneo, Mario Luigi Ferrari, Matteo Pascenti and Alberto Traverso	State of charge estimation of thermal storages for distributed generation systems
<b>Room: E</b>			
<b>Session Name: biofuel (III)</b>			
<b>Session Chair: Wennan Zhang, Hongwei He</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	1028	Guoqiang Zhang, Wenlong Xu, Yongping Yang and Xiuyan Wang	Sensitivity Analysis and Optimization of a Coal-Fired Power Plant in Different Modes of Flue Gas Recirculation
10:35-10:55	412	Stefano Cordiner, Alessandro Manni, Vincenzo Mulone and Vittorio Rocco	A detailed study of a multi-MW biomass combustor by numerical analysis: evaluation of fuel characteristics impact
10:55-11:15	478	Balaji Mohan, Wenming Yang and Siawkiang Chou	Effects of injection rate shaping on combustion and emission characteristics of biodiesel fueled CI engine - A CFD study
11:15-11:35	1210	Shuanlu Zhang, Changlu Zhao and Zhenfeng Zhao	Heat release analysis of hydraulic free piston diesel engine
11:35-11:55	994	Longfei Zhao, Hongzhou He and Huanghuang Zhuang	Burnout Time Analysis of Superfine Pulverized Anthracite Coal during Combustion in Industrial Boiler
11:55-12:15	1176	Herman Vermaak and Kanzumba Kusakana	Cost and performance evaluation of hydrokinetic-diesel hybrid systems
<b>Room: F</b>			
<b>Session Name: industry energy systems</b>			
<b>Session Chair: Joakim Lundgren</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	506	Linshuang Long and Hong Ye	Performance demonstration and evaluation of the synergetic application of thermochromic window and phase change material in passive buildings
10:35-10:55	615	Alessandra Scognamiglio, François Garde and Harald N. Rostvik	How Net Zero Energy Buildings and cities might look like? New challenges for passive design and renewables design.
10:55-11:15	749	Nguyen Truong, Leif Gustavsson and Ambrose Dodoo	Heat supply of multi-apartment buildings with varied heat demands
11:15-11:35	317	Borui Cui, Shengwei Wang and Xue Xue	Effects and Performance of A Demand Response Strategy for Active and Passive Building Cold Storage
11:35-11:55	630	Uniben Y. A. Tettey, Ambrose Dodoo and Leif Gustavsson	Primary energy implications of different wall insulation materials for buildings in a cold climate
11:55-12:15	501	Byung-Lip Ahn, Cheol-Yong Jang, Seung-Bok Leigh and Hakgeun Jeong	Analysis of the effect of artificial lighting on heating and cooling energy in commercial buildings
<b>Room: G</b>			
<b>Session Name: energy market, scenarios and forecasting, and energy security</b>			
<b>Session Chair: Qie Sun, Geoffrey Hammond</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	107	Koji Tokimatsu, Satoshi Konishi, Keiichi Ishihara and Tetsuo Tezuka	Global zero emission scenario: role of innovative technologies
10:35-10:55	118	Gengyuan Liu, Bin Chen, Meirong Su, Yan Zhang and Lixiao Zhang	An Analysis of China's Energy Security Based on Supply Chain Theory
10:55-11:15	225	Shi Jingcheng, Yin Xiang and Chen Wenyong	The impact of technical progress and fuel switching on building sector's decarbonization in China
11:15-11:35	710	Maria Jesus Herrerias, Ana Cuadros and Dan Luo	Foreign and Indigenous Innovation on Energy Intensity: Further Research across Chinese Regions
11:35-11:55	268	Wang Lu and Wei Yi-Ming	Responsibility Accounting in Carbon Allocation: A Global Perspective

11:55-12:15	758	Chi Zhang and Jinyue Yan	Photovoltaic Business Model Innovation on the Photovoltaic Water Pumping System for the Conservation of Grassland and Farmland in China
<b>Room: H</b>			
<b>Session Name: energy storage (II)</b>			
<b>Session Chair: Fredrik Wallin, Hsiang-Yu Wang</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	829	Kittima Ngamsai and Amornchai Arpornwichanop	Study on mechanism and kinetic of air oxidation of V(II) in electrolyte reservoir of a vanadium redox flow battery
10:35-10:55	875	Min-Hsin Yeh, Lu-Yin Lin, Ta-Jen Li, Yow-Au Leu, Guan-lin Chen, Ta-chang Tien, Cheng-yu Hsieh, Shen-chuan Lo, Shu-jiuan Huang, Kuo-Chuan Ho and Wei-Hung Chiang	Synthesis of Boron-doped Multi-walled Carbon Nanotubes by an Ammonia-assisted Substitution Reaction for Applying in Supercapacitors
10:55-11:15	1238	Hai Wang, H Yang and Lin Lv	Topotactically synthesized TiO <sub>2</sub> nanowires as promising anode materials for high-performance lithium-ion batteries
11:15-11:35	1119	Simon Mueller, Philipp Sandner and Isabell Welppe	Monitoring innovation in electrochemical energy storage technologies: A patent based approach
11:35-11:55	152	Lisa Branchini, Michele Bianchi, Francesco Melino and Andrea De Pascale	Storage solutions for renewable production in household sector
11:55-12:15	999	Jianfeng Lu, Tao Yu, Jing Ding and Yibo Yuan	Thermal analysis of molten salt thermocline thermal storage system with packed phase change bed
<b>Room: I</b>			
<b>Session Name advanced energy systems (III)</b>			
<b>Session Chair: Carl-Fredrik Lindberg, Ward De Paepe</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	589	Yiji Lu, Huashan Bao, Ye Yuan, Yaodong Wang, Liwei Wang and Anthony Paul Roskilly	Optimization of a novel resorption cogeneration cycle using mass and heat recovery
10:35-10:55	29	Chun Kiat Tay, Yoke Kin Wan, Rex T. L. Ng and Denny K. S. Ng	Automated Targeting Approach for Synthesis of Heat Exchanger Network (HEN) with Trigeneration System
10:55-11:15	78	Davide Ziviani, Alessio Suman, Steven Lecompte, Michel De Paepe, Martijn van den Broek, Pier Ruggero Spina, Michele Pinelli, Mauro Venturini and Asfaw Beyene	Comparison of A Single-screw and A Scroll Expander under Part-load Conditions for Low-grade Heat Recovery ORC Systems
11:15-11:35	757	Marina Montero Carrero, Ward De Paepe, Alessandro Parente, Francesco Contino, Julien Blondeau and Hannes Laget	Economic Analysis of a Micro Humid Air Turbine for Domestic Applications
11:35-11:55	1017	Ward De Paepe, Marina Montero Carrero, Svend Bram, Alessandro Parente and Francesco Contino	Experimental Characterization of a T100 micro Gas Turbine converted to Full Humid Air Operation
11:55-12:15	984	Stephanie Bouckaert, Pengbo Wang, Vincent Mazaauric and Nadia Maïzi	Expanding renewable energy by implementing dynamic support through storage technologies
<b>Room: J</b>			
<b>Session Name: Solar power generation</b>			
<b>Session Chair: Yuanhao Wang</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	436	Junjie Wu, Hongjuan Hou and Yongping Yang	Research on the Performance of Coal-fired Power System Integrated with Solar Energy
10:35-10:55	813	Yong Zhu, Rongrong Zhai, Miaomiao Zhao and Yongping Yang	Analysis of solar contribution evaluation method in solar aided coal-fired power plants
10:55-11:15	1245	Gang Liu, Xiao-Hui Tan and Min Li	Impacts of climate change on techno-economic performance of solar PV power systems: A case study in Australia
11:15-11:35	706	Da Xu, Qibin Liu and Hongguang Jin	Combined Cooling Heating and Power System Using Internal Combustion Engine with Integration of Middle-and-low temperature Solar Thermal Energy and Methanol Decomposition
11:35-11:55	13	Yuanyuan Li, Yongping Yang and Jing Yuan	A Study on solar multiple for an integrated solar combined cycle system with direct steam generation
11:55-12:15	1271	Uday Kumar Nutakki and Andrew Martin	Co-generation of Drinking Water and Domestic Hot Water Using Solar Thermal Integrated Membrane Distillation System
<b>Room: K</b>			
<b>Session Name: Wind power</b>			
<b>Session Chair: Lin Lu, Erik Dahlquist</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	157	Marie Cecilie Pedersen and Chungun Yin	Preliminary modelling study of ice accretion on wind turbines
10:35-10:55	377	Yu-Jen Chen, Yi-Feng Tsai, Chang-Chi Huang, Meng-Hsien Li and Fei-Bin	The Design and Analysis of Passive Pitch Control for Horizontal Axis Wind Turbine

		Hsiao	
10:55-11:15	822	Chih-Ming Hong, Cong-Hui Huang and Fu-Sheng Cheng	Sliding Mode Control for Variable-Speed Wind Turbine Generation Systems using Artificial Neural Network
11:15-11:35	851	Chung-Yao Hsuan, Jhu-Hong Ke, Rico Aditia Prahmana, Ta-Hui Lin and Yuan-Shiang Tasi	Validation and Measurements of Floating LiDAR for Nearshore Wind Resource Assessment Application
11:35-11:55	1208	Kun Lu, Yonghui Xie and Di Zhang	Numerical Investigations into the Nonsinusoidal Motion Effects on Aerodynamics of a Pitching Airfoil
11:55-12:15	1312	Haseeb Shah, Sathyajith Mathew and Lim Chee Ming	Optimized Design of Small HAWT Rotor for Low Wind Speed Application
<b>Room: L</b>			
<b>Session Name: bio-energy (I)</b>			
<b>Session Chair: David Chiamonti</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	110	Jin Liu, Tesfaldet Gebreegziabher, Yu Zhang, Adetoyese Olajire Oyedun, Yi Zhu, Maojian Wang and Chi Wai Hui	Modeling and optimization of microalgae drying for power generation
10:35-10:55	1049	Yasuto Tanaka, Kentaro Umeki, Yutaka Tamaura and Kunio Yoshikawa	Performance of a hybrid power generation system integrated with biomass gasification and concentrated solar thermal processes
10:55-11:15	323	Jesper Olsson, Magnus Philipson, Hans Holmström, Eric Cato, Eva Thorin and Emma Nehrenheim	Energy efficient combination of sewage sludge treatment and hygenization after mesophilic digestion – Pilot study
11:15-11:35	1324	Junchao Huang, Jie Yang, Xinhai Yu, Shan-Tung Tu and Jinyue Yan	Energy-efficient extraction of fuel from chlorella combined with CO2 capture
11:35-11:55	375	Chih-Chun Kung, Bruce McCarl, Chi-Chung Chen and Li-Jiun Chen	Environmental Impact and Energy Production: Evaluation of Agricultural Commodity and Urban Waste Based Biochar Application on Taiwanese Set-Aside Land
11:55-12:15	450	Siu Hoong Lee, Irene Mei Leng Chew and Denny Kok Sum Ng	A two-stage optimization approach for the synthesis of an integrated pulp and paper biorefinery
<b>Room: M</b>			
<b>Session Name: Clean Fuels for Future Engines (II)</b>			
<b>Session Chair: Shijin Shuai, Hui An</b>			
Time	Paper ID	Author	Paper Title
10:15-10:35	79	Hui An, Wenming Yang, Jing Li, Amin Maghbouli, Kian Jon Chua and Siaw Kiang Chou	Numerical Modeling on a Diesel Engine Fueled by Biodiesel-Methanol Blends
10:35-10:55	89	Jing Li, Wenming Yang, Hui An, Amin Maghbouli, Siaw Kiang Chou and Kian Jon Chua	Modeling on blend gasoline/diesel fuel combustion in a direct injection diesel engine at partial load
10:55-11:15	801	Ocktaeck Lim, Nguyen Ba Hung and Norimasa Iida	A Power Generation Study Based on Operating Parameters of the Linear Engine Using a Powerpack
11:15-11:35	1239	Ftwi Yohannes Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman	Effect of Air-fuel Ratio on the Combustion Characteristics of Syngas (H2:CO) in Direct-injection Spark-ignition Engine
11:35-11:55	909	Y.H. Teoh, H.H. Masjuki, M.A. Kalam, M.A. Amalina and H.G. How	Impact of Premixed Kerosene Fuel on Performance, Emission and Combustion Characteristics in Partial HCCI Engine
11:55-12:15	1031	Shijin Shuai, Buyu Wang, Hongqiang Yang, Zhi Wang, Jianxin Wang, Xin He and Hongming Xu	Combustion and Emission Characteristics of Multiple Premixed Compression Ignition (MPCI) Mode with Low Octane Gasoline Fuels
<b>12:15-13:10 LUNCH</b>			
<b>Room: A</b>			
<b>Session Name: Advance energy technology</b>			
<b>Session Chair: Rebei Bel Fdhila</b>			
Time	Paper ID	Author	Paper Title
13:10-13:30	473	Jui-Ching Hsieh, Chi-Chuan Wang and Pao-Yuan Cheng	A co-axial multi-tube heat exchanger applicable for an ORC power plant
13:30-13:50	1302	Naihua Wang, Zheng Cui, Feng Luo, Qie Sun and Lin Cheng	Temperature oscillation of loop heat pipe for AMS cryocooler
13:50-14:10	910	Md Lokman Hosain, Rebei Bel Fdhila and Anders Daneryd	Multi-Jet Impingement Cooling of a Hot Flat Steel Plate
14:10-14:30	440	Guoyan Zhou, Lingyun Zhu, Hui Zhu, Shantung Tu, Junjie Lei	Prediction of temperature distribution in shell-and-tube heat exchangers
14:30-14:50	1263	Shiquan He and Weilong Wang	The Heat Transfer Characteristics of Molten Salts flowing in a Vertical Concentric Duct
14:50-15:10	24	Normah Mohd-Ghazali, Jong-Taek Oh, Kwang-Il Choi, Nguyen Ba Chien, Nor Atiqah Zolpakar and Robiah Ahmad	Optimization of an Ammonia-cooled Microchannel Heat Sink with Square and Circular Cross-section Using Multi-Objective Genetic Algorithm



Room: B			
Session Name: PV cells (III)			
Session Chair: Liang-Yih Chen, Yian Tai			
Time	Paper ID	Author	Paper Title
13:10-13:30	1275	Xiao-Hui Tan, Gang Liu and Ye-Xiang Liu	Cu(In,Ga)Se <sub>2</sub> thin film solar cells with solution processed metal nanowire based transparent conductor
13:30-13:50	1315	Dávidné Nagy Nagy, Imre Miklós Szilágyi and Xianfeng Fan	Study about the morphology effect on the photo-efficiency of WO <sub>3</sub>
13:50-14:10	1256	Yuanhao Wang, Hongxing Yang and Lin Lu	The fabrication of barrier layer free TiO <sub>2</sub> nanotube arrays and its application for highly efficient dye-sensitized solar cells
14:10-14:30	1000	Yu-Tung Yin and Liang-Yih Chen	Promising Surface Modification Strategies for High Power Conversion Efficiency Dye Sensitized Solar Cell Based on ZnO Composite Photoanode
14:30-14:50	1108	Jian-Ming Chiu, Yian Tai, Desalegn Manayeh and Chih-Chien Chu	Simultaneous Enhancement of Photocurrent and Open Circuit Voltage in a ZnO based Organic Solar cell by Mixing Self-assembled Monolayers
14:50-15:10	708	B. Parvathy Devia, Yian Tai	Copper Nanowire Plasmonic Effect for Improving the Performance of Inverted Polymer Solar Cell
Room: C			
Session Name: thermodynamics (I)			
Session Chair: Roland Span			
Time	Paper ID	Author	Paper Title
13:10-13:30	262	Yongchen Song, Weiwei Jian, Yi Zhang, Wanli Xing, Yangchun Zhan, Shuyang Liu and Tongtong Li	Density Behavior of CO <sub>2</sub> + Decane Mixtures by Modified SAFT Equation of State
13:30-13:50	696	Qian Huang, Zhenyi Liu, Yi Zhou, Deping Zhang and Feng Wang	Study on mechanisms of CO <sub>2</sub> BLEVE based on the cusp-catastrophe model
13:50-14:10	764	Tobias Fieback and Roland Span	High Temperature Sorption Measurements for Determining Surface Effects of Solid Fuels
14:10-14:30	447	Bin Ren, Li Zhang, Hong Xu and Zhenyu Tao	Theoretical study on condensation in horizontal tubes with noncondensable gas
14:30-14:50	335	Ying Teng, Yu Liu, Yongchen Song, Lanlan Jiang, Xinhuan Zhou, Junlin Chen, Yuechao Zhao and Hongfei Zhen	A Study on CO <sub>2</sub> Diffusion Coefficient in n-decane Saturated Porous Media by MRI
14:50-15:10	287	Xinxin Zhang, Noriyuki Kobayashi, Maogang He and Jingfu Wang	Radiative efficiency estimation of organic substance based on group contribution method
Room: D			
Session Name: tidal/wave energy			
Session Chair: Ottorino Veneri			
Time	Paper ID	Author	Paper Title
13:10-13:30	1298	Huliang Dai, Abdessattar Abdelkefi and Lin Wang	Nonlinear Analysis and Improvement of Piezoelectric Energy Harvesting from Combined Loadings
13:30-13:50	1329	Huliang Dai, Abdessattar Abdelkefi, Qiao Ni and Lin Wang	Modeling and identification of circular cylinder-based piezoaeroelastic energy harvesters
13:50-14:10	996	Hongzhou He, Hui Li, Quanyou Qu and Huanghuang Zhuang	Numerical simulation of the pendulum system in a buoy-pendulum wave energy converter
14:10-14:30	519	Silvio Barbarelli, Gaetano Florio, Nino Michele Scornaienchi, Mario Amelio, Antonino Cutrupi and Giacomo Lo Zupone	Transients Analysis of a Tidal Currents Self-Balancing Kinetic Turbine with On Shore Basement
14:30-14:50	853	Seungmin Jung, Hyun-Wook Kim and Gilsoo Jang	Adaptive power control method considering reactive power reserve for wave-offshore hybrid power generator system
14:50-15:10	590	Clemente Capasso, Luigi Ferraro, Diego Iannuzzi and Ottorino Veneri	Experimental Study on a Laboratory Test Bench for Sea Wave Generation Systems
Room: E			
Session Name: distributed energy and microgrids			
Session Chair: Chengshan Wang, Xiaohua Xia			
Time	Paper ID	Author	Paper Title
13:10-13:30	103	Xuezhi Liu, Nick Jenkins, Jianzhong Wu and Audrius Bagdanavicius	Combined Analysis of Electricity and Heat Networks
13:30-13:50	417	Yinghui Han, Mingchao Xia, Xiaoyu Hong and Mengyun Ye	A smooth transition control strategy for microgrid operation modes
13:50-14:10	452	Bingqi Jiao, Chengshan Wang and Li Guo	Scenario generation for energy storage system design in stand-alone microgrids
14:10-14:30	1059	Uldis Bariss, Dagnija Blumberga and Lelde Timma	Smart metering pilot project results
14:30-14:50	422	Yue Zhou, Chengshan Wang, Bingqi Jiao and Yamin Wang	Robust load scheduling in a smart home with photovoltaic system
14:50-15:10	721	Seung Tae Cha, Qiuwei Wu, Haoran Zhao and Chengshan Wang	Frequency Control for Island Operation of Bornholm Power System

Room: F			
Session Name: District heating (II)			
Session Chair: Hongwei Li, Hailong Li			
Time	Paper ID	Author	Paper Title
13:10-13:30	976	Lianzhong Li and Lei Xu	Control Strategy Simulation Based on a Verified Dynamic Model for an Actual Indirect District Heating System
13:30-13:50	1032	Lukas Lundström, Erik Dahlquist, Fredrik Wallin, Jan Helgesson and Ulf Björklund	Impact on carbon dioxide emissions from energy conservation within Swedish district heating networks
13:50-14:10	1057	Jelena Ziemele, Ieva Pakere, Dagnija Blumberga and Normunds Talcis	Multi-criteria Analysis of District Heating systems in Baltic States
14:10-14:30	1212	Lipeng Zhang, Oddgeir Gudmundsson, Jan Eric Thorsen, Hongwei Li and Svend Svendsen	Technical comparison of domestic hot water system which used in China and Denmark
14:30-14:50	127	Ditiro Setlhaolo and Xiaohua Xia	Optimal household appliance scheduling incorporating appliance coordination
14:50-15:10	695	Anbang Li, Xinhua Xu and Jiajia Gao	Analysis of Frequency Thermal Characteristics of Pipe-embedded Concrete Radiant Floors Based on FDFD method
Room: G			
Session Name: pollutant control and waste treatment			
Session Chair: Monica Odlare, Pao Chi Chen			
Time	Paper ID	Author	Paper Title
13:10-13:30	173	Bohao Wu, Xinhuan Zhou, Yongchen Song, Lanlan Jiang, Yu Liu and Mingjun Yang	Recent research results of physical trapping mechanism in CO <sub>2</sub> -brine system
13:30-13:50	1147	Wenchao Ma, Guanyi Chen, Susanne Rotter, Nan Zhang and Guiyue Du	Chloride deposit formation in a 24 MW waste to energy plant
13:50-14:10	1184	Wan Su Kim, Gi Tae Jang and Dong Seok Rhee	Degradation of Methylene blue by Titania doped with Transition metal and Nitrogen
14:10-14:30	1339	Yanjun Hu, Xiaoyan Zheng, Kai Deng and Jianli Ren	Characterization on Heavy Metals Transferring into flue gas during Sewage Sludge Combustion
14:30-14:50	1123	Barna Heidel, Tobias Rogge and Günter Scheffknecht	Controlled re-emission of mercury in waste water treatment
14:50-15:10	240	Jianfeng Lu, Yuan Chen, Jing Ding and Weilong Wang	High temperature energy storage performances of methane reforming with carbon dioxide in tubular packed reactor
Room: H			
Session Name: energy economics (VI)			
Session Chair: Qi Zhang, Patrik Klintonberg			
Time	Paper ID	Author	Paper Title
13:10-13:30	1113	Jin-Li Hu and Satoshi Honma	A Comparative Study of Energy Efficiency of OECD Countries: An Application of the Stochastic Frontier Analysis
13:30-13:50	1249	Zulati Litifu	Applicable Indices to Connecting Industrial Park Load and Renewable Sources to a Local Power System
13:50-14:10	1296	Bret Strogen, Kendon Bell and David Zilberman	Life-cycle Environmental and Safety Assessment of Pipelines and Other Bulk Liquid Fuel Distribution Modes
14:10-14:30	941	Zha Donglan	Threshold characteristic of energy efficiency on substitution between energy and non-energy factors
14:30-14:50	1064	Sebastian Weibel and Reinhard Madlener	Cost-effective Design of Ringwall Storage Hybrid Power Plants: A Real Options Analysis
14:50-15:10	1111	Lei Zeng, Jiayang Li, Yang Yu and Jinyue Yan	Developing a Products Prioritization Tool to Capture Energy Savings in China
Room: I			
Session Name: communication between the consumers and utility (I)			
Session Chair: Bo Shen, Jianzhong Wu			
Time	Paper ID	Author	Paper Title
13:10-13:30	824	Mehmet Börühan Bulut and Fredrik Wallin	Smart grids in buildings – perspectives of different stakeholders
13:30-13:50	911	Chuan Choong Yang, Chit Siang Soh and Vooi Voon Yap	Comparative Study of Event Detection Methods for Non-intrusive Appliance Load Monitoring
13:50-14:10	1321	Daniel Torstensson and Fredrik Wallin	Exploring the Perception for Demand Response among Residential Customers
14:10-14:30	12	Chengchu Yan, Xue Xue and Shengwei Wang	A novel air-conditioning system for proactive demand response to smart grid
14:30-14:50	467	Zhuangli Hu, Canbing Li, Yijia Cao, Baling Fang, Lina He, Mi Zhang and Yonghong Kuang	How Smart Grid Contributes to Energy Sustainability
14:50-15:10	164	Larry Banta, Alberto Traverso, Alberto Nicola Traverso and Iacopo Rossi	Advanced Control of a Real Smart Polygeneration Microgrid

Room: J			
Session Name: biodiesel (III)			
Session Chair: Xinhai Yu, David Chiaramonti			
Time	Paper ID	Author	Paper Title
13:10-13:30	20	Benjamin Michael Francis, Raymond Tan and Luis Razon	A Methodology for Criticality Analysis in Symbiotic Bioenergy Parks
13:30-13:50	1301	Adeeb Hayyan, Mohd Ali Hashim, Maan Hayyan and Khor Gui Qing	Biodiesel Production from Acidic Crude Palm Oil Using Perchloric Acid
13:50-14:10	552	Qing Zhang, Limin Zhang, Tiejun Wang, Ying Xu, Qi Zhang and Longlong Ma	Upgrading of bio-oil by removing carboxylic acids in supercritical ethanol
14:10-14:30	259	Tiejun Wang, Qing Zhang, Songbai Qiu, Jinxing Long, Lungang Chen, Longlong Ma, Jin Tan, Kai Li, Qiyang Liu and Qi Zhang	Liquid fuels production by aqueous phase catalytic transformation of biomass for aviation
14:30-14:50	642	Rajesh S.Kempegowda, Gonzalo Del Alamo Serrano, Berta Matas Güell and Khanh Quang Tran	Techno-economic analysis of biomass to Fischer-Tropsch Diesel production with and without CCS under Norwegian conditions
14:50-15:10	1012	Daeil Park, Dong Ju Moon and Taegy Kim	Novel macro-micro channel reactor for reforming glycerol produced from biodiesel productions
Room: K			
Session Name: bio-energy (II)			
Session Chair: Ocktaeck Lim, Wenzhi Li			
Time	Paper ID	Author	Paper Title
13:10-13:30	965	Zhipei Yan, Jihong Li, Ting Cui, Shizhong Li, Yan Jiang, Guangtao Cong and Menghui Yu	Impact of Lignin Content on the Sweet Sorghum Bagasse Enzymatic Hydrolysis
13:30-13:50	1206	Noraishah Saidina Amin, Zaki Yamani Zakaria and Juha Linnekoski	Thermodynamic analysis of glycerol conversion to olefins
13:50-14:10	1300	Pengfei Liu, Mingming Zhu, Zhezi Zhang, Wenchao Wan, Setyawati Yani and Dongke Zhang	Thermogravimetric Studies of Characteristics and Kinetics of Pyrolysis of Buton Oil Sand
14:10-14:30	1201	Xue Yi	Hydrothermal lactic acid production from glucose over feldspars as solid base catalysts in water
14:30-14:50	1093	Wenming Hao, Neda Keshavarzi, Adrien Branger, Lennart Bergström and Niklas Hedin	Strong discs of activated carbons from hydrothermally carbonized beer waste
14:50-15:10	1003	Ting Cui, Jihong Li, Zhipei Yan and Shizhong Li	Effect of Crystalline Cellulose Structure on Enzymatic Hydrolysis
Room: L			
Session Name: thermal energy management (IV)			
Session Chair: Mikael Larsson			
Time	Paper ID	Author	Paper Title
13:10-13:30	390	Guohong Tian and Tony Roskilly	Semi-Dynamic Simulation of ORC Based Engine Waste Heat Recovery
13:30-13:50	927	Bahram Saadatfar, Reza Fakhrai and Torsten Fransson	Exergo-environmental analysis of a nano fluid ORC low-grade waste heat recovery for hybrid trigeneration system
13:50-14:10	43	Steven Lecompte, Sanne Lemmens, Aviel Verbruggen, Martijn van den Broek and Michel De Paepe	Thermo-economic Comparison of Advanced Organic Rankine Cycles
14:10-14:30	348	Yuh-Ren Lee, Chi-Ron Kuo, Chih-Hsi Liu, Ben-Ran Fu and Chi-Chuan Wang	Response of a 50 kW Organic Rankine Cycle System Subject to Influence of Evaporators
14:30-14:50	83	Yingjie Xu, Xiaohong Han, Qin Wang, Guangmin Chen and Shiming Deng	Experimental study on a novel low-temperature absorption-compression cascade refrigeration system
14:50-15:10	883	Rui Shang, Yin Zhang, Yiping Zhang, Xin Wang and Wenxing Shi	Fresh Look and Understanding on Carnot Cycle
Room: M			
Session Name: CCS (V)			
Session Chair: Mengxiang Fang, Xianfeng Fan			
Time	Paper ID	Author	Paper Title
13:10-13:30	294	Matteo C Romano, Maurizio Spinelli, Stefano Campanari, Stefano Consonni, Maurizio Marchi, Giovanni Cinti and Natale Pimpinelli	The Calcium looping process for low CO <sub>2</sub> emission cement and power production
13:30-13:50	835	Pao Chi Chen, C. F. Huang, Hsiao-Wei Chen, Ming-Wei Yang and Chih-Ming Tsao	Capture of CO <sub>2</sub> from coal-fired power plant with NaOH solution in a continuous pilot-scale bubble-column scrubber
13:50-14:10	964	Ching Tsung Yu, Huan Ting Kuo and Yi Ming Chen	Manufacturing of the high-temperature CO <sub>2</sub> sorbents from titanite nanoparticles doped calcium aluminate carbonates
14:10-14:30	1280	Yingying Zhang, Yujiao Xie, Yudan	Energy consumption analysis for CO <sub>2</sub> separation from gas mixtures with liquid absorbents

		Zhu, Xiaohua Lu and Xiaoyan Ji	
14:30-14:50	489	Yongqiang Xiong, Peng Luo and Ben Hua	A novel CO <sub>2</sub> -capturing natural gas combined cycle with LNG cold energy utilization
14:50-15:10	1311	Amin Azdarpour, Mohammad Asadullah, Radzuan Junin, Muhammad Manan, Hossein Hamidi, Ahmad Rafizan Mohamad Daud and Erfan Mohammadian	Carbon Dioxide Mineral Carbonation Through pH-swing Process, A Review
<b>15:10 – 15:30 TEA/COFFEE</b>			
<b>Room: A</b>			
<b>Session Name: combustion</b>			
<b>Session Chair: Xuesong Bai, Kentaro Umeki</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	607	Jinghuai Huang, Junwei Li, Mi Yan and Ningfei Wang	Effects of low temperature oxidation of heptanes on flame stability in a micro-tube combustor
15:50-16:10	667	Jianfeng Pan, Di Wu, Yangxian Liu, Huifeng Zhang, Aikun Tang and Hong Xue	Hydrogen/Oxygen Premixed Combustion Characteristics in Micro Porous Media Combustor
16:10-16:30	697	Lisi Jia, Ying Chen, Songping Mo, Shijun Lei and Zhuowei Liu	Effect of magnetic field and surfactant on dispersion of Graphene/water nanofluid during solidification
16:30-16:50	1222	Rong Yao, Zuo-Zhen Qiu, Jun-Wei Li, Jing-Huai Huang, Xin-Jian Chen and Ning-Fei Wang	Experimental study on n-heptane droplet combustion in a micro-tube
16:50-17:10	1270	Hang-Suin Yang and Chin-Hsiang Cheng	A Nonlinear Non-dimensional Dynamic Model for Free Piston Thermal-lag Stirling Engine
<b>Room: B</b>			
<b>Session Name: communication between the consumers and utility (II)</b>			
<b>Session Chair: Jianzhong Wu</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	328	Gengfeng Li, Zhaohong Bie, Haipeng Xie, Xiuli Wang and Xifan Wang	Reliability evaluation of active distribution networks considering customer satisfaction
15:50-16:10	394	Dia Adhikari, Jianzhong Wu and George O'Malley	Real Time Closed-loop Test Rig for Decentralized Control of Smart Distribution Networks
16:10-16:30	1030	Shiwei Xia, Xiao Luo and Ka-Wing Chan	A Framework for Self-healing Smart Grid with Incorporation of Multi-Agents
16:30-16:50	632	Eric Siqueiros, Dr. Yaodong Wang, Dr. Barbara Sturm, Professor Kegang Li, Professor Tony Roskilly, Dr. Ye Huang, Richard Law and Youyou Li	Waste utilisation in a spirits plant to replace fossil fuels
16:50-17:10	1155	Adel Aldihani, Abdulrahman Aldossary, Saad Mahmoud and Raya Al-Dadah	THE EFFECT OF COOLING ON THE PERFORMANCE OF PHOTOVOLTAIC CELLS UNDER DUSTY ENVIRONMENTAL CONDITIONS
<b>Room: C</b>			
<b>Session Name: Advanced energy technology (II)</b>			
<b>Session Chair: Tony Roskilly, Rebei Bel Fdhila</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	802	Ligang Wang, Shengwei Huang, Lingnan Wu, Changqing Dong, Yongping Yang and George Tsatsaronis	A Modified Specific Fuel Consumption Analysis for Predicting the Rearrangement of System Structure
15:50-16:10	532	Yan Zhang, Zhengxing Zuo, Chenheng Yuan, Dongjie Wang and Yanxiao Li	Analysis on Performance of Leaf Spring Rotary Engine
16:10-16:30	861	Francesco Baldi, Cecilia Gabrieli, Karin Andersson and Hannes Johnson	Energy analysis of a ship - the case study of a chemical tanker
16:30-16:50	194	Xiaolong Liu, Changwei Ji, Binbin Gao, Shuofeng Wang and Jinxin Yang	A quasi-dimensional model for hydrogen-enriched gasoline engines with a new laminar flame speed expression
16:50-17:10	596	Dawei Wu and Anthony Paul Roskilly	Design and parametric analysis of Linear Joule-cycle Engine with out-of-cylinder combustion
<b>Room: D</b>			
<b>Session Name: thermodynamics (II)</b>			
<b>Session Chair: Roland Span</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	336	Wen-Long Cheng, Tong-Tong Li, Yong-Le Nian and Kun Xie	An analysis of insulation for Geothermal Power Generation from Abandoned Oil Wells
15:50-16:10	1251	Xingyang Yang and Li Zhao	Thermodynamic analysis of a combined power and ejector refrigeration cycle using zeotropic mixtures
16:10-16:30	16	Ulrich Terblanche and Rahmatollah Khodabandeh	Effective use of excess heat in a cement plant

16:30-16:50	269	Mohsen Torabi and Kaili Zhang	Entropy generation analysis in convective-radiative cooling composite walls with temperature-dependent thermal conductivity and internal heat generation
16:50-17:10	172	Minghao Yu, Yongchen Song, Lanlan Jiang and Weizhong Li	CO <sub>2</sub> /water displacement in porous medium under pressure and temperature conditions for geological storage
<b>Room: E</b> <b>Session Name: hydrate (II)</b> <b>Session Chair: Praveen Linga</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	265	Zhi-Ming Xia, Xiaosen Li, Zhaoyang Chen, Qiu-Nan Lv, Chun-Gang Xu and Chao Chen	Hydrate-based Capture CO <sub>2</sub> and Purification CH <sub>4</sub> from Simulated Landfill Gas with Synergic Additives based on Gas Solvent
15:50-16:10	310	Weiguo Liu, Yunfei Chen, Yiming Zhu, Yongchen Song, Yanghui Li, Lijun Wang and Qianqian Li	Effects of Different Mining Methods on the Strength Behavior of Methane Hydrate-bearing Sediments
16:10-16:30	445	Jing Cai, Chun-Gang Xu, Chao Chen, Zhao-Yang Chen and Xiao-Sen Li	Recovery of Methane from Coal-bed Methane Gas Mixture via Hydrate-based Separation Method using the Scale-up Apparatus with Bubbling
16:30-16:50	535	Yu Zhang, Xiao-Sen Li, Zhao-Yang Chen, Xu-Ke Ruan and Ning-Sheng Huang	Methane Hydrate Dissociation by Depressurization in Sediments with Different Hydrate Saturations in Cubic Hydrate Simulator
16:50-17:10	442	Gang Li, Xiao-Sen Li and Yi Wang	Gas Production from Methane Hydrate in Cubic Hydrate Simulator using Depressurization Method by Experimental and Numerical Studies
<b>Room: F</b> <b>Session Name: heat transfer (III)</b> <b>Session Chair: Heejin Cho, Hailong Li</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	8	Kian Jon Chua, Siaw Kiang Chou and Wenming Yang	Heat and mass transfer study of composite desiccants for air conditioning
15:50-16:10	887	Xiuhua Zheng, Haiyang Liu and Zhanxue Bai	Pressures Analysis of ZK212 Well of Yangyi High Temperature Geothermal Field (Tibet, China)
16:10-16:30	935	S. F. Ahmed, M. M. K. Khan, M. G. Rasul, M. T. O. Amanullah and N. M. S. Hassan	Comparison of Earth Pipe Cooling Performance between Two Different Piping Systems
16:30-16:50	232	Wenke Zhang, Hongxing Yang, Lin Lu and Zhaohong Fang	The heat transfer analysis and optimal design of borehole ground heat exchangers
16:50-17:10	67	Sarwo Edhy Sofyan, Eric Hu and Andrei Kotousov	Modelling of a horizontal geo heat exchanger with internal source term
<b>Room: G</b> <b>Session Name: energy economics (VII)</b> <b>Session Chair: Reinhard Madlener, Maria Jesus Herrerias</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	331	Lijun Wang, Haizhong An, Xiaojia Liu and Xiaoqi Sun	Generating Moving Average Trading Rules in the Oil Futures Market with Genetic Algorithms
15:50-16:10	419	Yanqing Niu, Houzhang Tan, Shi'En Hui, Wenzhi Du and Yiming Zhu	Economic Feasibility Study of Different Biomass Firing Models in China
16:10-16:30	687	Qunwei Wang, Ching-Ren Chiu and Yung-Ho Chiu	Driving factors of aggregate CO <sub>2</sub> emissions in China
16:30-16:50	1082	Art Nash	Practical Alaskan-Grown Remote Energy Solutions
16:50-17:10	407	Chien-Yu Liu, Hsueh-Hsien Chang and Chuan-Chuan Ko	Evaluating Carbon Emissions Trading Strategy for Sustainable Energy
<b>Room: H</b> <b>Session Name: thermal energy management (V)</b> <b>Session Chair: Mikael Larsson, Weilong Wang</b>			
Time	Paper ID	Author	Paper Title
15:30-15:50	1130	Ahmed Elsayed, Saad Mahmoud, Raya Al-Dadah, James Bowen and Waseem Kaialy	Experimental and numerical investigations of the effect of pellet size on the adsorption characteristics of activated carbon/ethanol
15:50-16:10	1168	Xingjian Li, Saad Mahmoud, Raya Al-Dadah and Ahmed Elsayed	Thermoelectric Cooling Device Integrated with PCM Heat Storage for MS Patients
16:10-16:30	1163	Suliman Alfarawi, Matthew Webb-Martin, Saad Mahboud and Raya Al-Dadah	Thermal Analysis of Stirling Engine to Power Automotive Alternator Using Heat from Exhaust Gases
16:30-16:50	66	Davide Ziviani, Michel De Paepe and Martijn van den Broek	Geometry-based Modeling of Single-screw Expanders for Organic Rankine Cycle Systems in Low-grade Heat Recovery
16:50-17:10	266	Yuting Tan, Xun Li, Li Zhao, Hailong Li and Jinyue Yan	Study on Utilization of Waste Heat in Cement Plant
<b>Room: I</b> <b>Session Name: large scale power generation systems (III)</b> <b>Session Chair: Hongguan Jin, Xiaoze Du</b>			

Time	Paper ID	Author	Paper Title
15:30-15:50	730	Ming Liu, Junjie Yan, Jinshi Wang, Daotong Chong and Liu Jiping	Thermodynamic Analysis on a Pre-dried Lignite-Fired Power System: Comparison on Energy Supply Systems for Dryer
15:50-16:10	739	Xiaoqu Han, Zhaonan Xue, Ming Liu, Junjie Yan, Jinshi Wang and Liu Jiping	Simulation Investigation on the Dynamic Characteristics of a 600MW Supercritical Lignite-fired Pulverized Boiler
16:10-16:30	917	Ningling Wang, Dianfa Wu, Yongping Yang, Zhiping Yang and Peng Fu	Generalized energy-consumption evaluation of coal-fired power plants considering pollutant emissions
16:30-16:50	119	Xinming Xi, Lei Yang, Yanan He, Lijun Yang and Xiaoze Du	Optimal design of large scale dry cooling tower with consideration of off-design operation
16:50-17:10	140	Suzan Abdelhady, Domenico Borello, Ahmed Shaban and Franco Rispoli	Viability Study of Biomass Power Plant Fired with Rice Straw in Egypt

**Room: J**  
**Session Name: bio-energy (III)**  
**Session Chair: Wenzhi Li**

Time	Paper ID	Author	Paper Title
15:30-15:50	1105	Mingyue Ding, Yong Yang, Baoshan Wu, Yongwang Li, Tiejun Wang and Longlong Ma	Study on reduction and carburization behaviors of iron-based Fischer-Tropsch synthesis catalyst
15:50-16:10	1171	Yuping Li, Xiaoming Huang and Tiejun Wang	Application of Raney Ni and Pt/SiO <sub>2</sub> -ZrO <sub>2</sub> catalysts for two-step hydrogenation of difurfurylidene acetone to long-chain alkanes
16:10-16:30	572	Paolo De Filippis, Benedetta de Caprariis, Marco Scarsella, Antonietta Petrucci and Vincenzo Palma	Biomass gasification and tar reforming in a two stage reactor
16:30-16:50	977	Ming Fang, Ying Ying Xiong, Xiao Zhen Yuan and Yingwen Liu	Numerical Analysis of the Chemical Vapor Deposition of Polycrystalline Silicon in a Trichlorosilane and Hydrogen System
16:50-17:10	414	Yanqing Niu, Yiming Zhu, Houzhang Tan, Shi'En Hui and Wenzhi Du	Experimental Study on The Synthetic Effects of Kaolin and Soil on Alkali-induced Slagging and Molten Slagging

**Room: K**  
**Session Name: biogas (III)**  
**Session Chair: Mandy Gerber, Emma Nehrenheim**

Time	Paper ID	Author	Paper Title
15:30-15:50	184	Thi Ngoc Bao Dung, Chin-Chao Chen, Biswarup Sen, Gopalakrishnan Kumar and Chiu-Yue Lin	Food waste to bioenergy via anaerobic processes
15:50-16:10	323	Jesper Olsson, Magnus Philipson, Hans Holmström, Eric Cato, Eva Thorin and Emma Nehrenheim	Energy efficient combination of sewage sludge treatment and hygienization after mesophilic digestion – Pilot study
16:10-16:30	838	Franco Cotana, Alessandro Petrozzi, Gianluca Cavalaglio, Valentina Coccia and Anna Laura Pisello	A batch digester plant for biogas production and energy enhancement of organic residues from collective activities
16:30-16:50	1292	Yuying Li, Xuemin Ren, Zhenzhen Guan, Panpan Fan, Erik Dahlquist and Eva Thorin	Biogas Potential from Vetiveria zizanioides
16:50-17:10	80	Xiaojing Zhang, Jinying Yan, Hailong Li, Shabnam Chekani and Longcheng Liu	Energy Saving for Biogas Production and Upgrading - Thermal Integration

**Room: L**  
**Session Name: Renewable energy (II)**  
**Session Chair: Carl-Fredrik Lindberg**

Time	Paper ID	Author	Paper Title
15:30-15:50	392	Sie Ting Tan, Haslenda Hashim, Chew Tin Lee, Taib Mohd Rozainee and Jinyue Yan	Economical and environmental impact of waste-to-energy (WTE) alternatives for waste incineration, landfill and anaerobic digestion
15:50-16:10	52	Tasneem Salih, Yao Dong Wang and Marwan Awad	Renewable Micro Hybrid System of Solar Panel and Wind Turbine for Telecommunication Equipment in Remote Areas in Sudan
16:10-16:30	158	Jui-Ching Hsieh, David T.W. Lin, Hsin-Jung Huang and Chi-Han Wei	The heat extraction investigation of supercritical carbon dioxide flow in heated porous media
16:30-16:50	466	Jingfu Wang, Xinxin Zhang, Yongzhi Zhang, Yong Zhang and Wei Wang	Experimental study of single screw expander used in low-medium temperature geothermal power system
16:50-17:10	665	Kok Hoe Wong, Wen Tong Chong, Yap Huey Tyng, Ahmad Fazlizan, Wan Zaidi Wan Omar, Sin Chew Poh and Fei-Bin Hsiao	The Design and Flow Simulation of a Power-Augmented Shroud for Urban Wind Turbine System

**Room: M**  
**Session Name: Renewable energy (III)**  
**Session Chair: Qie Sun, Ke Wang**

Time	Paper ID	Author	Paper Title
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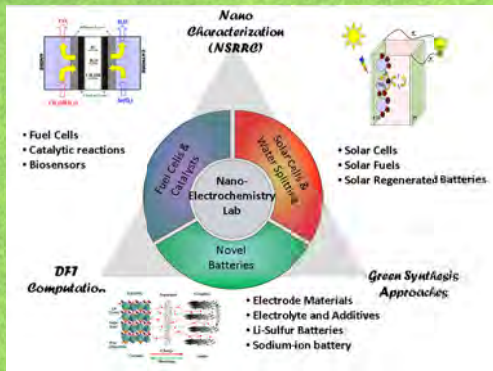
15:30-15:50	924	Richard Bonner and Tetyana Mamchych	Classifying households by the (Sobolev) norms of their electricity consumption
15:50-16:10	929	Yang Liu	Does carbon revenue finance learning investment? Evidence from the wind power sector in China
16:10-16:30	299	Neha Sehgal and Krishan Pandey	"The Drivers of Oil Prices " - A $[[MI]]^3$ Algorithm approach
16:30-16:50	1244	Dai Hancheng and Peggy Mischke	Future energy consumption, emissions and mitigation costs in East, Central and West China: Insights from soft-linking two global energy models
16:50-17:10	713	Mei Sun, Hui Zhang, Dun Han and Anna Gao	Study on the Hierarchical Structure of PV Enterprises in China Based on the Network Model





# The Department of Chemical Engineering of National Taiwan University of Science and Technology would like to welcome you to ICAE2014

Founded in 1978, TAIWAN TECH's Department of Chemical Engineering is one of the leading educational institutes in Taiwan. We are devoted in both fundamental and practical research; and through investigations into different areas such as nanotechnology, thermophysics, molecular computation, and material science, we aim to explore knowledge in various fields including applied energy.



## Nanoelectrochemistry Lab.

**Prof. Bing Joe Hwang (bjh@mail.ntust.edu.tw)**

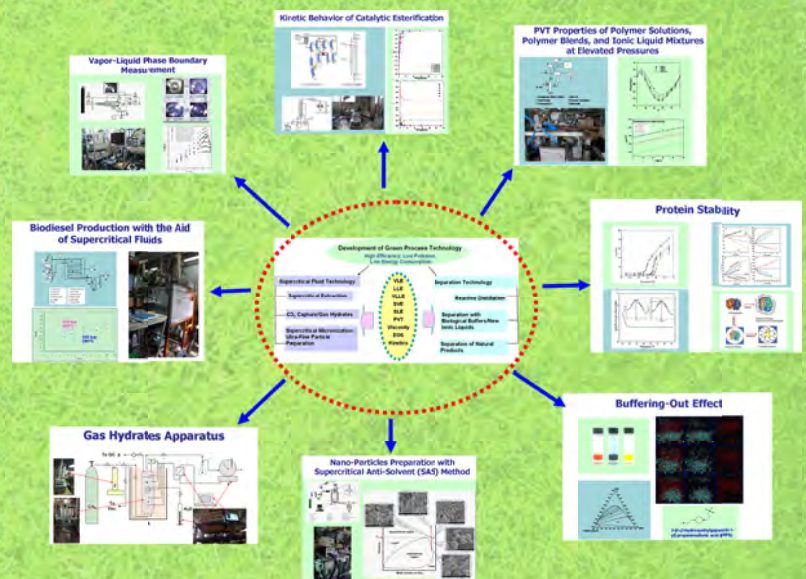
The research work has spanned a wide range of subjects from electrochemistry to spectroscopy, interfacial phenomena, materials science and theoretical chemistry. Combining in-situ spectroscopic techniques and computation, the work has led to a better understanding of reaction mechanisms on nanoparticles as well as electrodes and to an improved ability to design and synthesize new materials for both novel batteries and fuel cells.

## Thermophysical Properties Lab

**Prof. Ming-Jer Lee (mjlee@mail.ntust.edu.tw)**

The mixtures of interest are composed of natural gas, biofuels, supercritical fluids, ionic liquids, disperse dyes, polymers, biological buffers, or pharmaceutical materials etc. These experimental results are applied to develop innovative natural gas hydrates production technology, biofuels production process, and green chemical processes including reactive distillation and supercritical fluid technologies.

*Referred Paper: Tsai, Y. T., H. M. Lin, and M. J. Lee\*, "Biodiesel Production with Continuous Supercritical Process: Non-Catalytic Transesterification and Esterification with or without Carbon Dioxide", Bioresources Technology, 145 (2013), 362-369.*



## Oil/Lipid and Biotechnol Lab

**Prof. Yi-Hsu Ju (yhju@mail.ntust.edu.tw)**

Subcritical water (SCW) has been widely studied for its unique properties both as catalyst and solvent in various chemical processes. The use of SCW to pretreat agricultural products and waste has been extensively studied for producing fermentable sugars. SCW pretreatment was carried out to increase and/or improve the extractability of oils from oil seeds, allowed full extraction of the oils without grinding and/or dehulling of the seeds.

*Referred Paper: Go AW, YT Liu and YH Ju\*, "Applicability of Sub-Critical Water Treatment on Oil Seeds to Enhance Extractable Lipid", BioEnergy Research, 7(2014), 711-719*

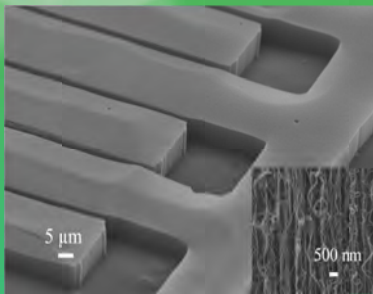
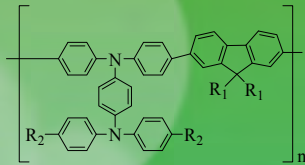
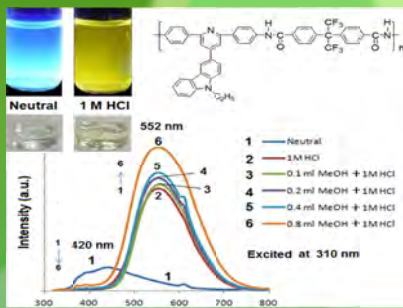
## Computational and Theoretical Chemistry lab

**Prof. Jyh-Chiang Jiang (jcjiang@mail.ntust.edu.tw)**

Designing and understanding of new materials for DSSCs, Hydrogen storage and Lithium-ion batteries (LIB). To assist in the development of improved battery system, research in LIB focuses on designing of major components and understanding of the chemical reactions involved. The DSSCs research sub-group designed a novel sensitizers based on the Ruthenium, Zn-porphyrins and metal free-organic molecules which show good performances as sensitizers compared to previous dyes. The group is also involved on H<sub>2</sub> storage research and proposed a new strategy to increase H<sub>2</sub> storage in the Transition metal decorated Boron-doped graphene surface.

*Referred Paper: Santhanamoorthi Nachimuthu, Po-Jung Lai, Jyh-Chiang Jiang\*, "Efficient Hydrogen Storage in Boron Doped Graphene Decorated by Transition Metals - A First-Principles Study", Caborn, 73(2014), 132-140*





### Polymer Science and Material Lab.

**Prof. Der-Jang LIAW (liawdj@mail.ntust.edu.tw)**

New functional polymers such as conjugated polymers, polynorbornenes (PNBs), polyimides (PIs) and polyamides (PAs) were synthesized via Suzuki coupling, ring-opening metathesis polymerization (ROMP) and low temperature polycondensation, respectively. Conjugated polymers with water/alcohol solubility and high carrier mobility acted as hole transporting materials for perovskite dye-sensitized solar cells. Triaryl amines-containing polymers cast on flexible substrates had electrochromic property and reversibility of multiple colour change. PIs and PAs derived from different architecture design revealed unique physico-mechanical, electrical and chemical properties. These polymers had good organo-solubility to fabricate optoelectronic devices such as solar cells, organic field effect transistors, polymer memories and smart window applications.

*Referred Paper:* Liaw, D. J., K. L. Wang, Y. C. Huang, K. R. Lee, J. Y. Lai and C. S. Ha, *Prog. Polym. Sci.*, 37(2012), 907

### Electronic Ceramics and CVD Research Lab.

**Prof. Dah-Shyang Tsai (dstsai@mail.ntust.edu.tw)**

Miniature Electrochemical Capacitor for Energy Storage-Interdigitated electrodes of vertically aligned CNT array were patterned using photolithography and CVD. Electrodes of ten CNT fingers are, 2.6 mm long, 0.2 mm wide, 60-70 μm high, separated by a gap 20 μm. When immersed in the gel electrolyte of PVdF-HFP/LiPF<sub>6</sub>, cycle life and reliability of the miniature electrochemical capacitor are improved.

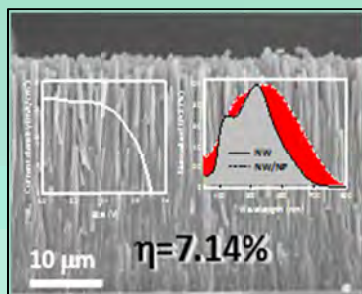
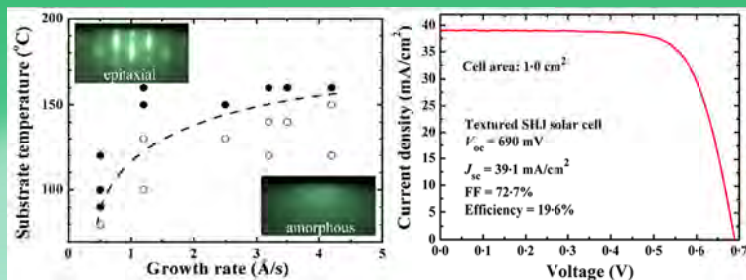
*Referred Paper:* Y.D. Chiou, D.S. Tsai\*, H.H. Lam, C.h. Chang, K.Y. Lee, Y.S. Huang, "Cycle Stability of the Electrochemical Capacitors Patterned with Vertically Aligned Carbon Nanotubes in LiPF<sub>6</sub>-Based Electrolyte", *Nanoscale*, 5(2013), 8122-8129.

### Thin Film Materials lab.

**Prof. Lu-Sheng Hong (hongls@mail.ntust.edu.tw)**

Si heterojunction (amorphous Si on crystalline Si) technology that allows for solar cells with energy conversion efficiencies over 20%. The approach to high quality Si heterojunction is to explore the window in which a-Si:H thin layers grown on c-Si could simultaneously retain their amorphous character and their high interface passivation ability as suggested by a growth mapping shown in Fig. Using the optimized a-Si:H growth conditions, a high cell efficiency near 20% can be achieved.

*Referred Paper:* C. S. Liu, C. Y. Wu, I. W. Chen, H.C. Lee and L. S. Hong\*, "High-Rate Deposition of a-Si:H Thin Layers for High-Performance Silicon Heterojunction Solar Cells", *Prog. Photovolt: Res. Appl.*, 21(2013), 326



### Optoelectronics Material Lab.

**Prof. Liang-Yih Chen (sampras@mail.ntust.edu.tw)**

Synthesis of ZnO, TiO<sub>2</sub>, Fe<sub>2</sub>O<sub>3</sub> as photoelectrodes and prepared CdS, CdSe, Cu<sub>2</sub>ZnSn(S,Se)<sub>4</sub> as light-harvesting materials for solar energy related devices. Now, we developed a continuous flow injection system to grow long and high crystallinity ZnO nanorods as photoanodes of dye-sensitized solar cells. The power conversion efficiency can be arrived 7.14%.

*Referred Paper:* Liang-Yih Chen\* and Yu-Tung Yin, "Hierarchically Assembled ZnO Nanoparticles on High Diffusion Coefficient ZnO Nanowire Arrays for High Efficiency Dye-Sensitized Solar Cells", *Nanoscale*, 5(2013), 1777-1780

### Nano Chemistry Lab.

**Prof. Jia-Yaw Chang (jychang@mail.ntust.edu.tw)**

Quantum-dot-sensitized solar cells (QDSCs) - A type of next-generation solar cells — offer new opportunities for harnessing solar energy. In spite of significant progress toward the fundamental investigation and optimization of the different components of QDSCs, improving the power conversion efficiency of QDSCs is still a big challenge. This study describes a systematic investigation of the influence of various interfacial conditions at the TiO<sub>2</sub>/ QD-sensitizer/electrolyte interfaces on the photovoltaic performance of QDSCs. The obtained results revealed that multilayered CuInS<sub>2</sub> QDSCs with distinct architectures show high power conversion efficiencies — approximately nine times that showed by single-layer CuInS<sub>2</sub> QDSCs.

*Referred Paper:* Jia-Yaw Chang\*, Jie-Mo Lin, Li-Fong Su, and Chia-Fu Chang, "Improved Performance of CuInS<sub>2</sub> Quantum Dot-Sensitized Solar Cells Based on a Multilayered Architecture", *ACS Appl. Mater. Interfaces*, 5(2013), 8740-8752

### Nano-hybrid materials lab.

**Prof. Yian Tai (ytai@mail.ntust.edu.tw)**

Designing and fabrication of organic/inorganic nano-hybrid materials, devices, and processes for the applications of electronics, optoelectronics, and energies. We incorporate small organic molecules and polymers with inorganic species to generate new materials, to modulate thin film growth process, and to improve the properties of device interfaces. In a P3HT/ZnO hybrid organic solar cell, the Jsc and therefore the power conversion efficiency can be largely improved by incorporation of organic silano- molecule in the ZnO fabrication process. The enhancement of solar cell efficiency was due to the increased charge mobility in the ZnO and improved morphology of P3HT layers facilitated by organic molecules.

*Referred Paper:* Jian-Ming Chiu and Yian Tai\*, "Improving the Efficiency of ZnO-Based Organic Solar Cell by Self-Assembled Monolayer Assisted Modulation on the Properties of ZnO Acceptor Layer", *ACS Appl. Mater. Interfaces*, 5(2013), 6946-6950













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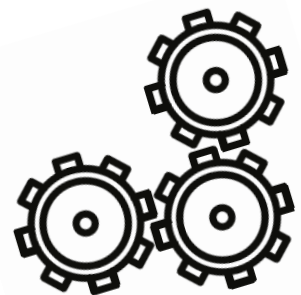








# Note



# AEii SUMCAMP <sup>2014</sup>



COOPERATION



INNOVATION



EVENT

# Invitation

June – August 2014

Young researchers, professors, project developers, and university students are welcome to take part in the Summer Camp AEii-2014 for exploring the opportunities on

- Starting up a spin off with support from the AEii for commercialization of your R&D innovations;
- Participating in on-going projects at AEii;
- Introducing innovative technologies/prototype/products (through your contacts network) and further developing them into market;
- Short guest visit as a researcher/developer;
- Joint supervision of your PhD/MSc students (through your university) to prepare a “virtual lab” with AEii;
- Student internship;
- Developing a collaboration project.

Please contact [info@ae-innovation.org](mailto:info@ae-innovation.org) if you are interested in AEii SUMCAMP 2014.



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