

CONFERENCE PROGRAM

Hiroshima, Japan / June 8-10, 2019

ACEEE | **2019 2nd Asia Conference on Energy and Environment Engineering (ACEEE 2019)**
2019 | **2019 2nd International Conference on Power and Smart Grid (ICPSG 2019)**
| **2019 the 4th International Conference on Renewable Energy and Conservation (ICREC 2019)**

TKP Garden City PREMIUM Hiroshima/広島駅前

Address: Japan, 〒732-0821 Hiroshima-ken, Hiroshima-shi, Minami-ku, Ōsugachō, 13-9 ベルヴェユオ

フェイス広島

Sponsored by:



Supported by:



Welcome Letter

Dear Professors, distinguished guests, ladies and gentleman,

Good morning.

On behalf of organizing committees of 2019 2nd Asia Conference on Energy and Environment Engineering (ACEEE 2019), I'd like to extend our warmest welcome to you all.

Welcome to join in our conferences as below:

2019 2nd Asia Conference on Energy and Environment Engineering, 2019 2nd International Conference on Power and Smart Grid and 2019 the 4th International Conference on Renewable Energy and Conservation.

2019 ACEEE, together with ICPSG and ICREC 2019 has been expected by us for more than half a year, and today they finally come into being. In order to prepare these conferences, the conference committee, organizing committee, program committee as well as all the authors neither seated here today or busy with their research works anywhere else have made a lot of efforts and contributions. Thank you very much for your continued supports to our conferences.

Special thanks are extended to distinguished Keynote & Plenary speakers: Prof. Zhixin Wang, from Shanghai Jiaotong University, China; Prof. Lin Chen, from Chinese Academy of Sciences, China (Tohoku University, Japan); Prof. Hee-Je Kim, from Pusan National University, Korea; Assoc. Prof. Nurdan Yildirim, Yasar University, Turkey.

So let us make progress together, and wish you a good job today. I'd like to seize this chance to send my good wishes to you and wish everything goes well in 2020.

Conference Organizing Committee

Hiroshima, Japan

Conference Venue

TKP Garden City PREMIUM Hiroshima 広島駅前



Address: Japan, 〒732-0821 Hiroshima-ken, Hiroshima-shi, Minami-ku, Ōsugachō, 13-9 ベルヴェオオフィス広島



Instructions for Presentation

Oral Presentations

- ☞ Time: a maximum of 15 minutes in total, including speaking time and discussion. Please make sure your presentation is well timed. Please keep in mind that the program is full and that the speaker after you would like their allocated time available to them.
- ☞ You can use USB flash drive (memory stick), make sure you scanned viruses in your own computer. Each speaker is required to meet her / his session chair in the corresponding session rooms 10 minutes before the session starts and copy the slide file (PPT or PDF) to the computer.
- ☞ It is suggested that you email a copy of your presentation to your personal inbox as a backup. If for some reason the files can't be accessed from your flash drive, you will be able to download them to the computer from your email.
- ☞ Please note that each session room will be equipped with a LCD projector, screen, point device, and a laptop with general presentation software such as Microsoft Power Point and Adobe Reader. Please make sure that your files are compatible and readable with our operation system by using commonly used fonts and symbols. If you plan to use your own computer, please try the connection and make sure it works before your presentation.
- ☞ Movies: If your Power Point files contain movies please make sure that they are well formatted and connected to the main files.

Dress code

- ☞ Please wear Business Suit, Business Casual or National Characteristics.

Notes and Tips

- ☞ Your paper ID will be required for the registration.
- ☞ Your punctual arrival and active involvement in each session will be highly appreciated.
- ☞ One best oral presentation will be selected from each oral session. The Certificate for the best one will be awarded at the end of each session.
- ☞ After the session, there will be a group photo for all presenters in this session.
- ☞ Please kindly make your own arrangements for accommodations.

Agenda Overview

Day 1
SATURDAY
June 8th, 2019

 **Room 5C (5th floor)**

Registration/13:00-17:00

The first day is all about registration, participants are supposed to sign in at the conference venue and collect all the conference materials at the registration counter on this day from 13:00 am to 17:00 pm. However, the registration is still open on the 2nd day of the conference within the same time.

Day 2
SUNDAY
June 9th, 2019

 **Room 5C (5th floor)**

Keynote Speeches and Parallel Sessions

Opening & Keynote Speeches, *Location: Room 5A (5th Floor)*

- 09:00-09:05** *Opening Remarks: Prof. Lin Chen, Chinese Academy of Sciences, China (Tohoku University, Japan)*

- 09:05-09:45** **Optimal Capacity Design of Independent Micro-Grid System for High Proportion of Wind-Solar Combined Cooling Heating and Power System with Energy Storage**
Prof. Zhixin Wang, Shanghai Jiaotong University, China

- 09:45-10:25** **Solar Power Generation and Various ESS (Energy Storage System) Applications**
Prof. Hee-Je Kim, Pusan National University, Korea

- 10:25-10:55** *Coffee Break & Group Photo*

- 10:55-11:35** **Key Challenges in Supercritical Fluid Energy Systems**
Prof. Lin Chen, Chinese Academy of Sciences, China (Tohoku University, Japan)

- 11:35-12:15** **Performance Assessment of University Buildings Based on Provided Thermal Comfort**
Assoc. Prof. Nurdan Yildirim, Yasar University, Turkey

- 12.15-13.30** *Lunch / Room 8B (8th Floor)*

13:30-17:30 **4 Parallel Sessions & Coffee Break**
Room 5A & Room 5B

18:00-20:00 **Dinner/ Room 8B (8th Floor)**

Day 3 **Monday June 10th, 2019**

One Day Tour

Keynote Speaker



Prof. Zhixin Wang, Shanghai Jiaotong University, China

Time: 09.05-09.45

Prof. Zhixin Wang received his BE degree in department of Scientific Instrumentation from Zhejiang University in 1985, M.S. degree in Department of Scientific Instrumentation, from Zhejiang University, in 1988 and Ph.D. degree in Mechanical Engineering, from Zhejiang University in 1994. Prof. Wang Zhixin is a full Professor in Department of Electrical Engineering at Shanghai Jiao Tong University, China. Professor Zhixin Wang conducts research in the areas of wind power, photovoltaic generation and control technology, distributed generations of smart grid and intelligent distribution system, motor control system and energy-saving system. He has published more than 100 international academic research papers, and there are 14 Sci index papers. He currently serves as Vice-Chairman of Shanghai Hydroelectric Engineering Society, Committee member of Shanghai New Energy Association Committee of Experts, and Honorary director of Shanghai Mechanical Engineering Society, etc.

Speech Title: Optimal Capacity Design of Independent Micro-Grid System for High

Proportion of Wind-Solar Combined Cooling Heating and Power System with Energy

Storage

Abstract: This paper researches the optimal capacity design of independent micro-grid system for wind-solar combined cooling heating and power system with energy storage, puts forward a dispatching method based on expert time-judge for dynamic control of wind-solar direct permeability and a hierarchical design based on energy storage module. Because of the uncertainty of wind -solar system, this paper adopts fuzzy parameters to describe the system constraints and clarify the opportunity constraints, then optimizes the capacity design on fuzzy constraints and particle swarm optimization, analyses the operation results of optimal capacity allocation under dispatching method and hierarchical design of energy storage.

Keynote Speaker



Prof. Hee-Je Kim, Pusan National University, Korea

Time: 09.45-10.25

Prof. Hee-Je Kim got PhD of Energy Conversion, Kyushu University, Fukuoka city, Japan. (1990, March) At present he is professor of Department of Electrical Engineering in Pusan National University (Busan, South Korea). And the group leader of BRL (Basic Research Lab.). He is currently working as an Associate Editor of NJC (New Journal of Chemistry)-RSC shared and Editorial Board Member of Journal [Energies], and the two permanent member of Korea Institute of Electrical Engineers [KIEE] / Renewable Energy. His main research area is dynamic, multi-objective, practical solution based research with a focus on highly efficient solar energy conversion and effective energy storage. That is related to mainly four area: i) Fabrication and commercialization of next-generation solar cells such as dye synthesized solar cells, quantum-dot, and perovskite solar cells). ii) Improving efficiency of existing solar PV and wind hybrid systems using different tools and techniques. iii) High energy and power density flexible super-capacitor for hybrid energy storage system. v) Dual active bridge (DAB), DC/DC Converter, MPPT, PV Inverter, Remote control by smart-phone with novel algorithm for Power conditioning system.

Speech Title: Solar Power Generation and Various ESS (Energy Storage System)

Applications

Abstract: Around the world, many governments have strived to increase the share of renewable green energy in their power productions. The main interest has mainly been energy security, increasing prices of carbon based energy sources and minimizing global warming. Concerning the second, global shipping is a major contributor to GHG (global greenhouse gas) emissions, bring responsible for approximately 3% of global CO₂ emissions.

The IMO (international maritime organization) is now working to start GHG regulations for global shipping, and is under pressure, e.g. from EU and UNFCCC (United Nations framework convention on climate change), to apply regulations that will have a substantial impact on emissions.

In addition, we introduce the second application of stand-alone PV with ESS system. This system will be very important in the isolated island and distant place without electrical power supply. So we demonstrate a cold storehouse for fresh fruits with a proto-type stand-alone PV system with ESS by using smart-phone based on internet networking as the next generation solar power system with various new applications.

Furthermore, we have been developed the eco-friendly power supply for various fast charging and discharging applications based on our own developing new ESS (super-capacitor/Li polymer battery/Chemical Battery). And we introduce the future of ESS applications such as new farming system, micro dust removing eco-friendly bill-board system and so on.

Keynote Speaker



Prof. Dr. Lin Chen, Chinese Academy of Sciences, China

(Tohoku University, Japan)

Time: 10.55-11.35

Dr. L. Chen is now a Professor in the Chinese Academy of Sciences, China. He obtained his B.Eng and PhD in from Peking University. He is also a granted JSPS/JST-CREST Research Fellow and Assistant Professor in Tohoku University (Japan). His current research topics include renewable and unconventional energy resources, supercritical fluids, multiscale heat/mass transfer, and advanced measurement techniques.

In recent years, he has authored more than 120 well-cited international journal papers and/or conference presentations/keynotes/invited talks, books/chapters, including the most famous one on energy conversion (“Advanced Applications of Supercritical Fluids in Energy Systems”, IGI Global, 2017, 680 pages). Dr. L. Chen is a winner of the President Scholarship, National Scholarship (MOE), Elite Scholar, Young Scientist Award, and many other honors/awards. He received the Innovation Award in 2011, 2012, and 2014, Elsevier journal TOP5 most-cited paper and the Elsevier Excellent Reviewer (2013, 2017). He is also a Reviewer, an Editorial/Advisory/TPC Member/Guest Editor for many renowned international journals/conferences.

Speech Title: Key Challenges in Supercritical Fluid Energy Systems

Abstract: Supercritical/near-critical fluids has become a hot topic as the trans-critical/supercritical energy systems are more and more proposed in recent years. It has been widely proposed in solar, nuclear, geothermal and other energy systems. Key challenges remain with the efficiency and safety problems of such high-pressure energy systems. When fluids go across the critical point or the equilibrium curve in the phase boundaries in the critical region, dramatic changes happen in fluid properties. Such effects introduce additional complexity in thermal systems with supercritical fluids (heat exchanger, turbines, reactors, etc). For the efficiency analysis in heat transfer and stability in multi-scales are discussed in this talk. The coupling between heating/cooling process and system stability are explained. The controlling laws are explained with models connecting micro-scale process and macro-scale parameter variations in the system. New trends in energy system applications including chemical, MEMS, medical engineering will also be discussed in this talk.

Keynote Speaker



Assoc. Prof. Nurdan Yildirim, Yasar University, Turkey

Time: 11.35-12.15

“Nurdan Yildirim is an Associate Professor and Head of the department of Mechanical Engineering at Yasar University, Izmir, Turkey. She obtained her B.S. degree in Mechanical Engineering from Dokuz Eylul University in 1999, and her M.Sc. and Ph.D. degrees in Mechanical Engineering from Izmir Institute of Technology in 2003 and 2010, respectively. In 2002, she attended a six-month “United Nations Geothermal Training Programme” at Reykjavik, Iceland, on an Iceland government and United Nations University fellowship. In 2005, she attended a nine-month “Diploma Course on Environmental and Applied Fluid Dynamics Department” at Von Karman Institute for Fluid Dynamics, Belgium, received a NATO fellowship. She is a certified Energy Manager and additionally has a Professional Engineer Certificate on Air-Conditioning, Ventilating, Refrigerating, Heating, Sanitary and Heat Insulation. Her main research interests are renewable energy systems, mainly geothermal energy (modeling and simulation of geothermal district heating system and geothermal power plants), energy management and energy efficiency.”

Speech Title: Performance Assessment of University Buildings Based on Provided

Thermal Comfort

Abstract: Buildings and industry cover the largest share of total energy consumption. When the distribution of energy consumption in buildings is examined, it is seen that the most important part is air conditioning systems. Therefore, improving the energy consumption of air conditioning systems or using more efficient systems have great importance. The factors affecting the energy consumption of air conditioning systems are system type, capacity, design, operation and climate conditions and user interventions.

Conference Program