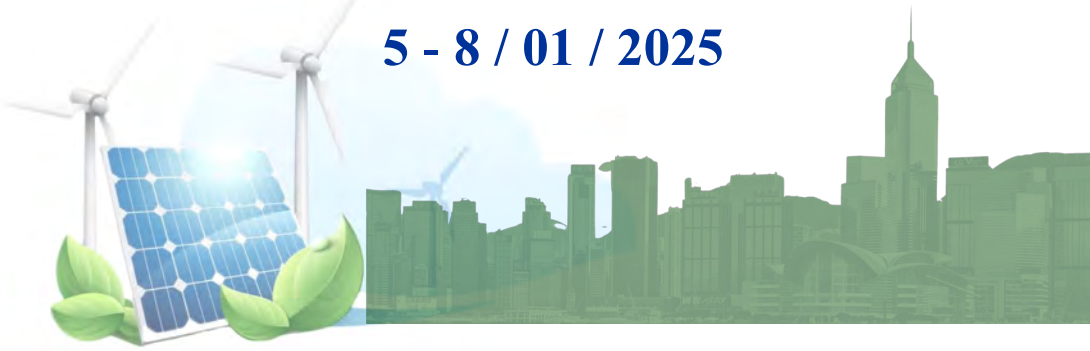
First International Conference on Digital Intelligence for Energy Systems

第一屆國際數智能源大會

5 - 8 / 01 / 2025



Organised by:
主辦單位:

THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

ZHEJIANG UNIVERSITY
浙江大學

OTTO POON CHARITABLE FOUNDATION
RESEARCH INSTITUTE FOR SMART ENERGY
潘樂陶慈善基金智慧能源研究院
RISE

Sponsored by:
贊助單位:

王寬誠教育基金會
K. C. WONG EDUCATION FOUNDATION

RIAIoT
人工智能物聯網研究院
Research Institute for Artificial Intelligence of Things

Contents

**** Conference Programme as of 23 December 2024. Provisional programme details may be subject to change without prior notice.***

Welcome Message

Welcome to the First International Conference on Digital Intelligence for Energy Systems!

The conference brings together academics, researchers, professionals and industry practitioners as well as government and professional society leaders to exchange ideas and the updated states of technology development and applications.

It facilitates dialogues and collaborations among power generation, distribution and consumers, and addresses interdisciplinary challenges towards continuous and healthy development and practical applications of digital intelligence technologies for energy systems.

Shengwei WANG

Conference Chair
Director of Otto Poon Charitable Foundation
Research Institute for Smart Energy (RISE)
The Hong Kong Polytechnic University

Conference Objectives

With a focus on the cutting-edge research and technology development and their industrial applications, this conference aims to promote the innovative utilization of artificial intelligence, big data, the Internet of Things, cloud /edge computing, smart sensing, and other digital technologies in the energy-related disciplines, bridging the gaps between academic research, technology development and industrial applications.

Conference Scope

The conference will feature:

- Dialogue and debate between AI “promoters” and challengers” in energy field
- Dialogue between power generation, distribution and consumers
- Dialogue between scientists, professionals and policy makers
- Keynote speech, invited presentation
- Oral presentation

Topics:

- AI, data science and analytics, and other numerical technologies for energy system planning, design and management;
- IoT, cloud/edge computing, digital twin and other digital technologies for energy system planning, design and management;
- Smart, digital and numerical technologies for building-grid interaction and energy-flexible buildings/districts;
- Smart, digital and numerical technologies for power system carbon neutral transformation;
- Smart, digital and numerical technologies for energy storage in-generation, grid and demand sides;
- Smart, digital and numerical technologies for renewable energy generation and integration;
- Smart, digital and numerical technologies for power transmission and distribution systems;
- Smart, digital and numerical technologies for smart grid and microgrid operation and management;
- Smart, digital and numerical technologies for energy efficient and sustainable building/districts;
- Policy, economic and regulatory aspects for digital energy and carbon neutrality transformation

Conference Committees

Conference Chairs

- Prof Shengwei WANG
- Prof. Linda Fu XIAO
- Prof. Zhao XU
- Prof. Yang ZHAO

Scientific Committee

(by alphabetical order of surname)

- Prof. Zhimin DU
- Prof. Cheng FAN
- Prof. Wenjie GANG
- Prof. Diance GAO
- Prof. Gongsheng HUANG
- Prof. Youwei JIA
- Prof. Xinqiao JIN
- Prof. Xiaolong JIN
- Dr Jing KANG
- Ir Harry LAI BBS
- Prof. Dunnan LIU
- Prof. Zhaoxi LIU
- Prof. Henrik Lund
- Prof. Zhenjun MA
- Prof. Henrik Madsen
- Prof. Jinhan MO
- Prof. Dajan Mumovic
- Prof. Kashem Muttaqi
- Prof Yongjun SUN
- Prof. Huilong WANG
- Prof. Xinhua XU
- Prof. Da YAN
- Prof. Xuejun ZHANG
- Prof. Jian ZHAO
- Prof. Chaoqun ZHUANG

Conference Secretariat

Secretariat coordinator: Prof. Hangxin LI

Scientific Secretary: Dr Hong TANG

Logistic Secretary: Ms Kate FUNG

Chair

Prof. Shengwei WANG

Director of Research Institute for Smart Energy, Chair Professor of Building Energy and Automation, and Otto Poon Charitable Foundation Professor in Smart Buildings, The Hong Kong Polytechnic University

Biography

Ir Professor Wang Shengwei, earned his BEng and MSc degrees from Huazhong University of Science and Technology (China) in 1983 and 1986 respectively, and PhD degree from University of Liege (Belgium) in 1993. He joined PolyU in 1993 and was promoted to Chair Professor (Building Energy and Automation) in 2008 and received an endowed professorship (Otto Poon Charitable Foundation Professor in Smart Buildings) in 2020. He is the fellows of ASHRAE, IBPSA, CIBSE and HKIE.

Professor Wang focusses his research on building energy and smart building technologies, including energy system and control optimization, building energy flexibility and building-grid interaction, diagnosis and commissioning, data centre cooling and cleanroom air-conditioning, as well as IT-enabled smart building technologies. He has secured a large number of research grants, including 20 grants of General Research Fund (GRF) and a Collaborative Research Fund (CRF) from RGC in Hong Kong, and an overseas outstanding youth talent grant from NSFC. Professor Wang has published four books and over 500 papers, and was one of the highly-cited scholars in “energy science and engineering” and was ranked No. 20 in “building and Construction” (in Stanford Report).

Professor Wang also has extensive experience in successful building energy projects both for new and existing buildings, such as International Commerce Centre (ICC) and International Gateway Centre (IGC), received over HKD 40 M industrial grant in total and achieved energy saving up to 42% of energy and over 10 million kWh per year in individual building.

Co-chair

Prof. Linda Fu XIAO

Associate Dean of FCE and Professor
The Hong Kong Polytechnic University

Biography

Prof. Xiao obtained her double Bachelor degrees in Heating, Ventilation and Air-Conditioning Engineering (major) and Marketing (minor) from Xi'an Jiao Tong University in 1998, her Master degree in Refrigeration and Cryogenics Engineering from Shanghai Jiao Tong University in 2001, and her PhD in Building Services Engineering from the Hong Kong Polytechnic University (PolyU) in 2004. She worked in Ove Arup & Partners Hong Kong Ltd. from 2005 to 2006. She joined PolyU as a lecture in July 2006 and promoted to Assistant Professor in September 2009, Associate Professor in July 2013 and Professor in July 2020.

Prof. Xiao is a member of Chartered Institution of Building Services Engineers (MCIBSE), a Chartered Engineer (CEng) with Engineering Council UK, a member of American Society of Heating, Refrigerating and Air-Conditioning Engineers (MASHRAE), and a member of Hong Kong Institution of Engineers (MHKIE).

Prof. Xiao has been doing innovative multidisciplinary research on smart buildings and smart energy system management, with the focus on dynamic modeling of building energy systems, optimal control and diagnosis of building and energy systems, as well as big data analytics and AI for smart energy-efficient and resilient buildings. She has received numerous awards including 2021 The President's Awards for Outstanding Achievement in Knowledge Transfer, 2018 Outstanding ICAE Paper Award, 2017 Annual Best Paper Award in Journal of Refrigeration, 2017 PolyU Distinguished Knowledge Transfer Awards, ASHRAE Technology Award 2014, Dean's Award for Outstanding Achievement in Research Funding 2013, Commissioning Project of the Year (Final three) in 2011 CIBSE Awards, etc. She is the Associate Editor of Building Simulation, editorial members of Automation in Construction, Energy and AI, etc.

Prof. Xiao's work has been funded by the Ministry of Science and Technology (MOST) of China, Hong Kong Research Grant Council (RGC), Innovation and Technology Fund (ITF), National Science Foundation of China (NSFC), Environment and Conservation Fund of Hong Kong, industrial sponsors, etc. She secured 27 competitive research grants as the PI or Co-PI worth HK$15.0+ million, including one RGC theme-based, one RGC CRF and one MOST National Major Development Programme. The research outcomes of Prof. Xiao's work were applied to a large number of existing and new buildings and achieved significant energy savings.

Co-chair

Prof. Yang ZHAO

Professor
Zhejiang University

Biography

Dr Yang Zhao is a professor of the College of Energy Engineering at Zhejiang University in China. His research focuses on intelligent building, artificial intelligence, energy efficiency, fault detection and diagnosis. He is very interested in making buildings as intelligent as possible. In addition to his academic roles He was formerly a postdoctoral researcher of Eindhoven University of Technology in The Netherlands, and a research associate of the Department of Building Services Engineering at Hong Kong Polytechnic University in Hong Kong. He obtained his PhD degree on HVAC from the same department, and received MSc and BEng degrees on HVAC from Dalian University of Technology and Harbin Institute of Technology respectively in China. He serves as a member of the editorial board for serval journals including Building Simulation, Building Energy Efficiency, HVAC and Energy and Built Environment.

Co-chair

Prof. Zhao XU

Professor
The Hong Kong Polytechnic University

Biography

Prof Z. Xu obtained PhD from The University of Queensland in 2006. He was Assistant and then Associate Professor with Department of Electrical Engineering, Technical University of Denmark during 2006-2010. He is now a Professor with EE Department, The Hong Kong Polytechnic University. His research interests include smart grid, renewable energy and applications of AI and big data analytics. He has extensive research experiences involving collaborations with academia, industrial and business sectors. Prof Xu received several awards for research excellence including 2017 State Award in Nature Science from MOE, PR China. He is currently Chairman of IEEE Hong Kong Joint Chapter of PES/IELS/IAS/PELS. He also holds editorships for several top journals e.g. IEEE Transactions on Smart Grid.

Honorable Guest

Ir Dr Otto POON Lok To, BBS,OBE

Chairman
ATAL Engineering Group

Biography

Ir Dr Poon is Chairman of ATAL Engineering Group. With more than 50 years of experience in engineering and business, he has contributed significantly towards the accreditation of engineering degrees. He is a member of the Election Committee – Engineering Subsector, President of Hong Kong Academy of Engineering Sciences, Life President of Hong Kong Federation of Electrical and Mechanical Contractors, Honorary Advisor of the Bauhinia Foundation Research Centre, and Past President of The Hong Kong Institution of Engineers. In 2017, Dr. Poon established the Otto Poon Charitable Foundation Limited to support education in science, engineering and technologies through setting up scholarships, research fellowships, research grants, and funding educational activities in Hong Kong and the Mainland. He and Otto Poon Charitable Foundation supported the university initiative in setting up RISE at PolyU in 2020, so that faculty members with various research interests on energy issues could work cohesively, via interdisciplinary approaches, to make a much higher impacts on academia, industry and society.

Honorable Guest

Ir Kwok-ying POON Raymond JP

Director
Electrical & Mechanical
Services Department, HKSAR
Government

Biography

Ir Raymond KY POON is the Director of the Electrical and Mechanical Services Department. He is overseeing the engineering services for over 100 government departments and public organisations, as well as the enforcement of legislations in ensuring public safety on using electricity, gas, railway and other electrical and mechanical installations, and promoting energy efficiency and conservation and application of renewable energy in Hong Kong.

Ir POON has been working in the government for 30 years and taken up professional and managerial roles in the areas of engineering services, project management, business development as well as regulatory enforcement. Ir POON received his Bachelor of Engineering degree in Electrical and Electronics Engineering and Master of Science degree in Environmental Management from the University of Hong Kong. He has also obtained his Executive MBA degree from the Chinese University of Hong Kong in 2019.

Honorable Guest

Ir Prof. Christopher CHAO

Vice President (Research and Innovation), Chair Professor of Thermal and Environmental Engineering, Director of Policy Research Centre for Innovation and Technology (PReCIT)
The Hong Kong Polytechnic University

Biography

Prof. Christopher Chao received his BSc(Eng) degree in Mechanical Engineering (First Class) from The University of Hong Kong (HKU) in 1988. He was awarded the Sir Edward Youde Memorial Fellowship for Overseas Studies in 1990 and obtained his M.S. and Ph.D. degrees in Mechanical Engineering from The University of California, Berkeley, USA, in 1992 and 1994, respectively. Prof. Chao was an Assistant Professor at Hong Kong Polytechnic University (PolyU) from 1995-1997. Before returning to PolyU in September of 2021, he was an Assistant Professor (1997-2002), Associate Professor (tenured, 2002-2009), Full Professor (2009-2015) and Chair Professor of Mechanical and Aerospace Engineering (2015-2018) at The Hong Kong University of Science and Technology (HKUST). He was Associate Dean of Engineering (Research and Graduate Studies) (2011-2014) and Head of Mechanical and Aerospace Engineering at HKUST (2014-2018). He joined HKU to serve as Dean of Engineering and Chair Professor of Mechanical Engineering from 2018 to 2021. Prof. Chao was ranked by Clarivate Analytics in the top 1% worldwide by citations in the research field of Engineering in 2021. He has published over 170 archival journal papers. He serves as Editor and is on the editorial boards of several major journals in the field of Energy and Built Environment including Energy and Buildings, Building and Environment, Indoor Air, Building Simulation, Indoor and Built Environment, etc. He is a Fellow of the Hong Kong Academy of Engineering Sciences, American Society of Mechanical Engineers, Institution of Mechanical Engineers, Chartered Institution of Building Services Engineers, Hong Kong Institution of Engineers and International Society of Indoor Air Quality and Climate. He serves in various Government units and core I&T organizations including the New Energy Transport Fund and Gas Safety Advisory Committee of the Hong Kong Environment Bureau, the Building Committee of the Housing Authority, the Sir Edward Youde Memorial Fund Council, Board of Directors of Cyberport, Board of Directors of the Engineering Forum of HKIE, etc.

Honorable Guest

Prof. Qingyan CHEN

Director of PolyU Academy for Interdisciplinary Research (PAIR), Chair Professor of Building Thermal Science, Hong Kong Global STEM Scholar
The Hong Kong Polytechnic University

Biography

Prof. Qingyan “Yan” Chen earned his B.Eng. from Tsinghua University and M.Eng. and Ph.D. from the Delft University of Technology. He worked as a Research Scientist at ETH-Zurich, a Project Manager for TNO, and Assistant and Associate Professor at MIT. Before he joined PolyU, he was James G. Dwyer Professor of Mechanical Engineering at Purdue University. He is also the Editor-in-Chief of Building and Environment.

Prof. Chen's current research topics include indoor environment, aircraft cabin environment, and energy-efficient, healthy, and sustainable building design and analysis. He has published three books, six papers in book chapters, and over 470 journal and conference papers, and has been invited to deliver more than 180 lectures internationally.

Prof. Chen received several technical paper and poster awards and Distinguished and Exceptional Service Awards from the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE) and CAREER award from the National Science Foundation in the United States. He has also received the Willis J. Whitfield Award from the Institute of Environmental Sciences and Technology, John Rydberg Gold Medal from the Scandinavian Federation of Heating, Ventilating and Sanitary Engineering Associations (SCANVAC), and Distinguished Achievement Award from the International Building Performance Simulation Association (IBPSA). He was awarded as an honorable member of the Society of Heating, Air-conditioning and Sanitary Engineers of Japan (SHASE). Prof. Chen is a fellow of the ASHRAE, the International Society of Indoor Air Quality (ISIAQ), and the International Association of Advanced Materials (IAAM).

Keynote Speaker

Prof. Jiannong CAO

Member of Academia Europaea, IEEE Fellow, Director of Research Institute for Artificial Intelligence of Things, Dean of GS
The Hong Kong Polytechnic University
Hong Kong

Title of the Presentation

Advances of AI and Its Applications in Engineering

Biography

Prof. Cao's research interests include edge computing and distributed systems, wireless sensing and networking, big data and AI. He published 6 co-authored and over 500 papers in major international journals and conference proceedings. He also obtained 13 patents. He received many awards for his outstanding research achievements. Prof. Cao served the Chair of the Technical Committee on Distributed Computing of IEEE Computer Society 2012-2014. He is a member of Academia Europaea, a fellow of HK Academy of Engineering, a fellow of IEEE, a fellow of CCF and a distinguished member of ACM.

Keynote Speaker

Prof. Xiang GAO

Academician of Chinese Academy of Engineering, President of Zhejiang University of Technology, Mainland China

Title of the Presentation

Integration between Science and Education to Promote Green Energy Science and Technology Innovation

Biography

GAO Xiang is a Member of the Chinese Academy of Engineering and holds Fellowships from the Institution of Engineering and Technology, the Chinese Society for Electrical Engineering, and the Chinese Society for Environmental Sciences. He currently serves as President of Zhejiang University of Technology, Director of the Institute of Carbon Neutrality at Zhejiang University, and Director of Baima Lake Laboratory. He has been involved in long-term research on fundamental theories, key technologies, and engineering applications in the fields of energy and the environment, achieving a series of innovative results in areas such as clean energy, long-term energy storage, reduction of pollution and carbon emissions, and resource recycling. He has led or participated in the development of over 80 national and industry standards. His achievements have been recognized with numerous awards, including the First Prize and the Second Prize of the State Technological Invention Awards, the Second Prize of the State Scientific and Technological Progress Award, two Second Prizes of the National Teaching Achievement Awards, the Scientific and Technological Innovation Award of the Ho Leung Ho Lee Foundation, the National Award for Excellence in Innovation, and the National May Day Labor Medal, among others.

Keynote Speaker

Prof. Henrik Lund

Editor-in-Chief of Energy
Department of Sustainability and Planning
Aalborg University, Denmark

Biography

Henrik Lund is MSc Eng, PhD, Dr.Techn. and Professor in Energy Planning at Aalborg University, Denmark. He holds a PhD in the Implementation of Sustainable Energy Systems (1990), and a Dr Techn in Choice Awareness and Renewable Energy Systems (2009). Henrik Lund is a highly ranked world-leading researcher. For 10 successive years, he is listed among ISI Highly Cited researchers, ranking him among the top 1% researchers in the world within engineering, and is on the Stanford list of top 2% scientists. He is member of The Danish Academy of Technical Sciences (ATV) and has been awarded the Royal Order of Chivalry of the Dannebrog. For 15 years, Henrik Lund has been Editor-in-Chief of Elsevier's high-impact journal Energy with annual 15000+ submissions, and is the founding editor of the journal Smart Energy. He is the author of more than 500 books and articles including the book "Renewable Energy Systems". He is the architect behind the advanced energy system analysis software EnergyPLAN, which is a freeware used worldwide that have formed the basis of more than 300 peer-reviewed journal papers around the world.

Title of the Presentation

New insights into Smart Energy Systems- Theory, Concepts and Applications.

Abstract

This presentation includes new insights into the concept, theory and application of smart energy systems. The concept was introduced in 2012 and shortly after received a scientific definition. As opposed to, for instance, the smart grid concept, which puts the sole focus on the electricity sector, smart energy systems include the entire energy system in its approach to identifying suitable pathways to the green transition.

Based on the 3rd edition of "Renewable Energy Systems" a theory of two smart energy systems hypotheses has been formulated. First, that one must take a holistic and cross-sectoral smart energy systems approach in order to be able to identify the best solutions of affordable and reliable transitions of the energy system into a carbon neutral society. Next, that subsector studies (no matter if they consider the role of a specific technology or the role of a region or country) should aim at identifying the role to play in the context of the overall system transition rather than aim at decarbonizing the sub-sector on its own.

The concept and theory have been applied to the analysis of the need for energy storage and electricity balancing in a future climate-neutral society. In five Smart Energy System Integration Levels (SESIL), progressing from a sole electricity sector focus to a fully integrated system of electricity, heating, cooling, industry, transport, and materials, optimal investments in storage and resulting levels of curtailment are identified. It is illustrated how overall least-cost solution is only identified in a fully integrated smart energy system, with affordable types of energy storage and little curtailment that cannot be found in a sole electricity sector approach.

Keynote Speaker

Prof. Henrik Madsen

Head of Centre for IT-Intelligent Energy Systems in Cities, Section Head of Dynamical Systems
Technical University of Denmark, Denmark

Biography

He got a PhD in Statistics at the Technical University of Denmark in 1986. He was appointed Ass. Prof. in Statistics in 1986, Assoc. Prof. in 1989, and Professor in Mathematical Statistics with a special focus on Stochastic Dynamical Systems in 1999. In 2017 he was appointed Professor II at NTNU in Trondheim. His main research interest is related to analysis and modelling of stochastic dynamic systems. This includes signal processing, time series analysis, identification, estimation, grey-box modelling, prediction, optimization and control. The applications are mostly related to Smart Grids, Energy Forecasting, Energy Systems Modelling, Informatics, Environmental Systems, Bioinformatics, Biostatistics, and Finance. The most recent books are Time Series Analysis (2008); General and Generalized Linear Models (2011); Integrating Renewables in Electricity Markets (2013), Statistics for Finance (2015), and Statistical Modelling of Occupant Behaviour (2024)

Title of the Presentation

Digitalisation and Solutions for Activating Demand-side Flexibility

Abstract

It will be argued that demand-side flexibility (DSF) is key to an efficient implementation of the future decentralized and weather-driven energy system. DSF solutions call for intensive use of data as well as a digitalisation of the energy grids and markets. In this talk we shall first outline the economic benefits of demand-side flexibility, and it will be argued that DSF is key to an efficient acceleration of the green transition. Secondly, we will focus on the digitalisation needed at all levels of the energy system for harvesting the full potentials of DSF. This digitalisation includes data models represented by the so-called flexibility functions, which are data- and AI-driven models used to characterize the flexibility at all levels of the energy systems. We will describe the so-called Smart Energy OS (Operating System) framework, which represents a spatial-temporal hierarchical setup of data spaces, flexibility functions, and solutions for forecasting, control and optimization for smart energy solutions. The hierarchical setup has demonstrated fundamental improvements in forecasting and control for renewable integration, and the setup also facilitates new solutions for balancing and grid services. The findings in a number of use-cases will be outlined. Finally, we describe how the methodologies will be demonstrated and evaluated within new large-scale European Energy Data Space projects.

Keynote Speaker

Prof. Dejan Mumovic

Director of the Institute for Environmental Design and Engineering
University College London (UCL), UK

Biography

Dejan is a building scientist with a background in heating, ventilation and air conditioning engineering and the extensive experience of monitoring and modelling work in the field of the built environment. In the last 20 years Dejan has led, co-led or significantly contributed to 60 research projects, and co-authored over 300 peer reviewed publications. 20 doctoral researchers graduated under his supervision.

Dejan Mumovic is Professor of Building Performance Analysis and Director of the Institute for Environmental Design and Engineering at the Bartlett, University College London (UCL). He is the Expert Adviser for Climate Change and Decarbonisation (2023-2025) in the Department for Education, UK, and a co-founder of IBPSA-England (an affiliate specialist group of the International Building Performance Simulation Association) and CIBSE School Design Group (a specialist group interested in school building design, construction and operation).

Title of the Presentation

Realising the health co-benefits of the transition to net zero: Modelling Platform for Schools (MPS)

Abstract

This keynote is given on behalf of a group of researchers from a range of backgrounds, including engineering, public health, clinical medicine, mental health research and education. Here we set out our plan to explore the health co-benefits of the transition to net zero in the context of school building stock in England. Our approach is based on the six steps: (a) Map, (b) Understand, (c) Model, (d) Test and Evaluate, (e) Involve, and (f) Engage. This talk focuses on the progress so far to create the world's first dynamic, one-by-one school building stock model, to evaluate the health and economic impacts of proposed adaptation and mitigation pathways for the school estate to reach net zero. This talk is designed to provide an opportunity for the delegates to provide early feedback and to engage with our efforts to evaluate the effectiveness of net zero policies and overheating mitigation strategies in the near, medium, and long-term in schools across England using our Modelling Platform for Schools (MPS) linked with novel 'synthetic population' health models.

Keynote Speaker

Prof. Kashem Muttaqi

IEEE Fellow, Editor-in-Chief – IEEE Transactions on Industry Applications, Director of the ARC Training Centre in Energy Technologies for Future Grids, University of Wollongong, Australia

Biography

Professor Kashem Muttaqi is the Director of the Australian Research Council Industrial Transformation Training Centre in Energy Technologies for Future Grids (ARC Future Grids Training Centre), sponsored by the Australian Federal Government, New South Wales State Government and 15 industries and 6 Universities in Australia. He is also the Director of the Australian Power and Energy Research Institute (APERI) at the University of Wollongong (UOW), New South Wales, Australia. He is a Distinguished Professor and Discipline Leader in Electrical Engineering at the School of Electrical, Computer and Telecommunications Engineering, University of Wollongong. Professor Muttaqi has 25 years of academic experience and authored or co-authored more than 550 papers in international journals and conference proceedings. He has supervised more than 30 higher-degree research students to completion. Currently, Professor Muttaqi is the Editor-in-Chief of the IEEE Transactions on Industry Applications. He is a Board Member of the IEEE Industry Applications Society (IAS). He is also the Past Chair of the Industrial Automation and Control Committee (IACC) for IEEE IAS. He has served as an Associate Editor for several journals, including IEEE Transactions on Industry Applications, IEEE Transactions on Sustainable Energy, and IET Generation, Transmission & distribution. He is the General Chair for the IEEE International Conference in Energy Technologies for Future Grids (IEEE ETFG 2025) to be held on 7–11 December 2025 at Wollongong, Australia. He is a Member of IEEE Industry Applications Society, IEEE Power & Energy Society, IEEE Industrial Electronics Society, and IEEE Power Electronics Society. Professor Muttaqi is a Fellow of the Institution of Engineers Australia (FIEAust). He is a Fellow of the Institution of Engineering and Technology, UK (FIET). In 2023, he has become a Fellow of the Institute of Electrical and Electronics Engineers (FIEEE) for his contribution to modeling and control of renewable and distributed energy resources.

Title of the Presentation

Energy Technologies for Future Grids

Abstract

Energy supply systems across the globe are undergoing a rapid transformation, revolutionizing how we produce, deliver and consume energy, driven by the imperative to achieve a net-zero future. This transition is marked by declining renewable energy costs, significant advancements in energy efficiency, the proliferation of smart technologies, the electrification of transportation, and the widespread adoption of energy storage solutions. While these developments signal progress toward sustainability, they also pose challenges for integrating new energy technologies into existing power grid infrastructures. Ensuring grid stability and enhancing the resilience and capabilities of power systems require innovative solutions. This keynote will explore the role of emerging energy technologies, sustainable energy sources, electric vehicles, and advanced integration strategies in shaping the future of power grids. By addressing these challenges, we can improve grid stability and reliability, as well as facilitate a seamless transition to a cleaner, more sustainable energy landscape.

About Conference

Date:	5—8 January 2025 (Sunday to Wednesday)
Location:	Podium, Block Z, The Hong Kong Polytechnic University, Hung Hom, Hong Kong
Mode:	Face-to-Fcae

Contact Us:	Email: info.rise@polyu.edu.hk Tel: +852 3400 3037 (Ms Kate FUNG)
Website:	https://events.polyu.edu.hk/rise_digital_intelligence/registration

Registration

Online registration:

https://events.polyu.edu.hk/rise_digital_intelligence/registration

(Walk-in) Registration counter opening time and location:

5 Jan : HKT 2:00pm - 8:00pm

6 Jan : HKT 8:00am - 5:00pm

7 Jan : HKT 8:00am - 5:00pm

Outside Rm Z209, Podium, Block Z, The Hong Kong Polytechnic University Campus

Registration fee:

HK$ 3,200 (Regular participants) /HK$ 2,000 (Student participants)

Online Payment only, Cash is not accepted.

Once the payment is completed, an email receipt will be sent to your registered email. No refund is allowed.

Should you have further queries, please contact the Conference Secretariat via email at info.rise@polyu.edu.hk Thank you.

Registration

All registered participants should pick up their badges, conference booklet, and other materials at registration counter.

Name Badge

Please bring along with you during the Conference. It is used to identify you to attend the Conference, have the lunch and banquet.

Conference booklet

You may download the e-copy of Conference booklet from

https://events.polyu.edu.hk/rise_digital_intelligence/home

Hardcopy will be provided in the registration counter.

Travel

By MTR

The nearest MTR station is Hung Hom Station and a footbridge at Exit A1 or D1 leads you to the campus.

By Bus

Two major bus stops around campus are Hung Hom Station and Cross Harbour Tunnel Toll Plaza (Kowloon side).

By Taxi

Three types of taxis are operating in Hong Kong: Urban red taxi, New Territories green taxi, and Lantau Island blue taxi. All three types of taxis serve Hong Kong International Airport, but only Urban red taxis go to PolyU. Details for taxi far are available at https://www.td.gov.hk/en/transport_in_hong_kong/public_transport/taxi/ Additional charges occur for large baggage. The tunnel tolls are both payable by a passenger for cross-harbour hiring.

Visa Issue

Nationals of about 170 countries and territories may visit Hong Kong without a visa/entry permit for a period ranging from 7 days to 180 days. For more information on visa/entry permit requirements for visitors to the HKSAR, please refer to the website of the Immigration Department.

Insurance

The organiser does not accept responsibility for accidents that might occur. Participants are strongly encouraged to arrange travel insurance prior to their departure from their home countries. An insurance plan covering accidental loss of belongs, medical costs of injury and illness, and other possible risks related to international travel are recommended.

Travel

Time zone

Local Hong Kong time is Greenwich Mean Time +8 hours.

Currency

The legal tender in Hong Kong is the Hong Kong dollar (HKD), which is pegged to the US dollar at a rate of about HKD 7.80 to USD 1, although exchange rates may fluctuate slightly. Foreign currencies can be exchanged at airports, banks, hotels and currency exchange stores. All major credit cards are widely accepted in Hong Kong.

Power and electricity

The standard electrical voltage in Hong Kong is 220 volts AC, 50Hz (British three-pin rectangular blade plug).

Weather

Please visit the website of Hong Kong Observatory to find the latest weather forecast of Hong Kong.

Tourism attractions

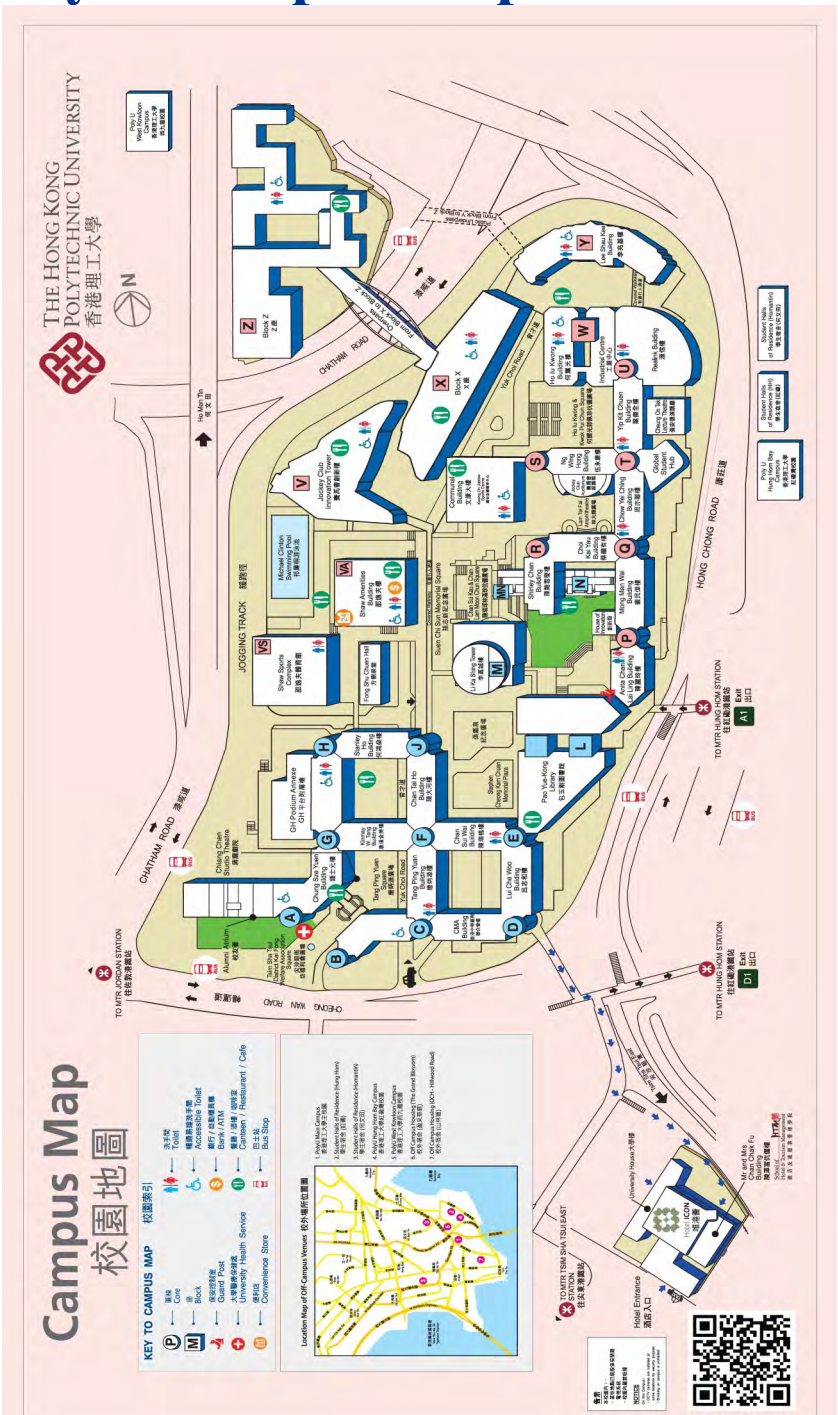
Please visit the website of Hong Kong Tourism Board to know more about attractions of Hong Kong:

Octopus card

The Octopus card is a multi-usage smart card charging for the public transportation in Hong Kong, making it easy to enjoy Hong Kong's public transportation system. You can loan an Octopus at any MTR customer service centre with a refundable deposit of HK$50. Please refer to the MTR Octopus Card website for details.

More detail of Travel useful information, please refer: https://events.polyu.edu.hk/rise_digital_intelligence/travel

PolyU Campus Map



Oral Presentation Guidelines

Each conference room is equipped with a computer and an LCD projector. Onsite speakers should bring your usb with your presentation materials for your presentation. Or Please send your oral presentation PowerPoint / PDF file to info.rise@polyu.edu.hk **on or before 27 December 2024 (Friday)** so that we can test the slides for you in case you have technical difficulties.

Use of your personal computer is not supported.

Kindly refer to the Detailed Programme (will be provide later) for your oral presentation timeslot. You should arrive at the presentation venue 10 minutes in advance of your designated session.

Each of the papers will be presented in an on-site session of the Conference, and **NO online presentation option will be arranged**. If you did not participate in the oral presentation, your paper will not be considered for the Best Paper Award. Five papers will be selected to receive Best Paper Awards and each will receive a cash award of HK$3,000.

Programme at a Glance

January 5th					
Welcome Reception and Registration (14:00 – 20:00) Site: Block Z, Room209					
January 6th					
Opening ceremony and keynote speech, Room Z209					
9:00 - 9:30	**Opening Ceremony**	Welcome speech: Prof. Christopher Chao Vice President (RI), PolyU			Chair: Prof. Shengwei Wang
		Opening speech: Ir Kwok-ying Poon Raymond, JP, Director, Electrical and Mechanical Services Department (EMSD), Hong Kong SAR			
9:30 – 9:35	Group photo				
9:35 – 10:15	**Keynote speech**	Speaker: Prof. Jiannong Cao, PolyU			Chair: Prof. Qingyan Chen
10:15-10:45	Coffee break				
10:45 - 11:25	**Keynote speech**	Speaker: Prof. Henrik Lund, AalborgU/Denmark			Chair: Prof. Zhao Xu
11:25 - 12:05		Speaker: Prof. Kashem Muttaqi, UoW/Australia			
12:05 - 13:30	Lunch				
Parallel workshops and sessions					
13:30 - 14:30	Workshop 1	Workshop 2	Workshop 3	Session 1	Session 2
14:40 - 15:40				Session 3	Session 4
15:40 - 16:00	Coffee break				
16:00 - 17:00	Session 5	Session 6	Session 7	Session 8	
17:10 - 18:10	**Dialogue and debate between AI "promoters" and "challengers" in energy field** (Moderator: Prof. Da Yan)				
Banquet (18:30-21:00) at JS Cuisine 港晶軒					

January 7th				
Keynote speech and dialogue, Room Z209				
9:00 – 10:20	**Keynote speech**	Speaker: Prof. Xiang Gao, ZJUT/China		Chair: Prof. Yang Zhao
		Speaker: Prof. Henrik Madsen, DTU/Denmark		
10:20-10:50	Coffee break			
10:50-11:30	**Keynote speech**	Speaker: Prof. Dejan Mumovic,UCL/UK		Chair: Prof. Yang Zhao
11:30-12:10	**Dialogue between power generation, distribution and consumers** (Moderator: Prof. Jinhan Mo and Prof. Lasantha Meegahapola)			
12:10 - 13:30	Lunch			
Parallel workshops and sessions				
13:30 - 14:30	Workshop 4	Workshop 5	Workshop 6	Session 9
14:40 - 15:40				Session 10
15:40 - 16:00	Coffee break			
16:00 - 17:00	Session 11	Session 12	Session 13	Session 14
17:10 - 17:50	**Dialogue between scientists, professionals and policy makers** (Moderator: Ir. Harry Lai)			
17:50 - 18:20	**Closing Ceremony**	Best paper awards Closing remarks: Prof. Shengwei Wang Next Conference		Chair: Prof. Linda Fu Xiao
January 8th				
Technical visits				

Programme at a Glance

Parallel workshops			
Date and time: 6th Jan, 13:30-15:40			
NO.	**Topic**	**Time and Room**	**Chair**
1	Data science and technology for smart buildings	13:30-15:40, Z209	Prof. Cheng FAN
2	CSG collaboration: Building-grid interaction and load aggregation	13:30-15:40, Z204	Prof. Dunnan LIU and Prof. Hangxin LI
3	Energy management in smart grids cum Seminar for Key Program of National Natural Science Foundation of China—Low-Carbon Smart Operation of Integrated Energy System Considering Multi-energy Flow Trading Mechanism, Interaction Model and Decision-making Algorithm under Complex Time-Space Coupling Environment	13:30-15:40, Z207	Prof. Zhao XU
Date and time: 7th Jan, 13:30-15:40			
4	RMIT-PolyU FutureLab: Advanced load flexibility engagement technologies	13:30-15:40, Z204	Prof. Lasantha Meegahapola
5	Energy storage material, integration and application	13:30-15:40, Z207	Prof. Gongsheng HUANG
6	Artificial Intelligence for energy management	13:30-15:40, Z211	Prof. Yang ZHAO

Programme at a Glance

Parallel Sessions			
Date and time: 6th Jan, 13:30-17:00			
NO.	Topic	Time and Room	Chair
1	Integrated Energy System Design and Optimization- I	13:30 - 14:30, Z211	Prof. Xinhua XU, Prof. Minghao WANG
2	Digitalization and Smart Platforms for Energy Management- I	13:30 - 14:30, Z212	Prof. Zhengguo ZHANG Prof. Chong ZHANG
3	Energy Storage and Management	14:40 - 15:40, Z211	Prof. Xuejun ZHANG Prof. Kui SHAN
4	Digitalization and Smart Platforms for Energy Management- II	14:40 - 15:40, Z212	Prof. Tengfei ZHANG Prof. Xiuming LI
5	Renewable Energy Technologies and Applications	16:00 - 17:00, Z204	Prof. Zhonghua GOU Prof. Wenjie GANG
6	Intelligent Control and Automation in Energy Systems- I	16:00 - 17:00, Z207	Prof. Zhe TIAN Prof. Yongbao CHEN
7	System Performance Prediction and Analysis- I	16:00 - 17:00, Z211	Prof. Tianyi ZHAO Prof. Maomao HU
8	Building-grid Interaction and Energy-flexible Buildings/districts- I	16:00 - 17:00, Z212	Prof. Diance GAO Prof. Xiaolong JIN

Programme at a Glance

Parallel Sessions			
Date and time: 7th Jan, 13:30-17:00			
NO.	Topic	Time and Room	Chair
9	Data Analytics and Performance Diagnosis for Energy Systems	13:30 - 14:30, Z212	Prof. Xinqiao JIN Prof. Yixing CHEN
10	Integrated Energy System Design and Optimization- II	14:40 - 15:40, Z212	Prof. Zhaoxi LIU Prof. Yuvraj Sahni
11	System Performance Prediction and Analysis- II	16:00 - 17:00, Z204	Prof. Yongjun SUN Prof. Jiaqiang WANG
12	Building-grid Interaction and Energy-flexible Buildings/districts - II	16:00 - 17:00, Z207	Prof. Rongling LI Prof. Huilong WANG
13	Intelligent Control and Automation in Energy Systems - II	16:00 - 17:00, Z211	Prof. Baolong WANG Prof. Chaoqun ZHUANG
14	Advanced Technologies in Sustainable Energy Solutions	16:00 - 17:00, Z212	Prof. Zhimin DU Prof. Haoshan REN

5 Jan (Sun)

HKT	Activities
14:00-20:00	On-site Welcome Reception and Registration

Location: Outside Rm Z209, Podium, Block Z,

The Hong Kong Polytechnic University Campus

6 Jan (Mon)

Opening ceremony — Rm Z209

09:00-09:15	**Welcome Speech** **Ir Prof. Christopher CHAO** Vice President (Research and Innovation), Chair Professor of Thermal and Environmental Engineering, Director of Policy Research Centre for Innovation and Technology (PReCIT), The Hong Kong Polytechnic University
09:15-09:30	**Opening Speech** **Ir Kwok-ying POON Raymond JP** Director, Electrical and Mechanical Services Department, HKSAR
09:30-09:35	**Group Photo**

Keynote speech — Rm Z209

09:35-10:15	**Prof. Jiannong CAO** Member of Academia Europaea, IEEE Fellow, Director of Research Institute for Artificial Intelligence of Things, Dean of GS, The Hong Kong Polytechnic University, Hong Kong
10:15 –10:45	Coffee Break
10:45-11:25	**Prof. Henrik Lund** Editor-in-Chief of Energy Department of Sustainability and Planning, Aalborg University, Denmark
11:25-12:05	**Prof. Kashem Muttaqi** IEEE Fellow, Editor-in-Chief – IEEE Transactions on Industry Applications, Director of the ARC Training Centre in Energy Technologies for Future Grids, University of Wollongong, Australia
12:05-13:30	Lunch

6 Jan (Mon)

Parallel workshops and sessions

<table>
<tr><td>13:30 - 14:30</td><td rowspan="2">Workshop 1
Rm Z209</td><td rowspan="2">Workshop 2
Rm Z204</td><td rowspan="2">Workshop 3
Rm Z207</td><td>Session 1
RmZ211</td><td>Session 2
RmZ212</td></tr>
<tr><td>14:40 - 15:40</td><td>Session 3
RmZ211</td><td>Session 4
RmZ212</td></tr>
<tr><td>15:40 - 16:00</td><td colspan="5">Coffee break</td></tr>
<tr><td>16:00 - 17:00</td><td>Session 5
Rm Z204</td><td>Session 6
Rm Z207</td><td>Session 7
Rm Z211</td><td colspan="2">Session 8
Rm Z212</td></tr>
<tr><td>17:10 - 18:10</td><td colspan="5">Dialogue and debate between AI “promoters” and “challengers” in energy field
Rm Z209</td></tr>
</table>

6 Jan (Mon)

Workshop 1 : Data science and technology for smart buildings

13:30-15:40 Rm Z209

Chair: Prof. Cheng FAN, Associate Professor, Shenzhen University

Speaker	Presentation Title
Prof. Li LAN Professor, Shanghai Jiao Tong University	Built Environment and human health
Prof. Qiong LI Professor, South China University of Technology	Recognition and prediction of elderly outdoor thermal sensation based on facial skin temperature
Prof. Guanjing LIN Associate Professor, Tsinghua Shenzhen International Graduate School	Accelerating fault-free optimal control through EMIS-enabled fault correction
Prof. Yixing CHEN Professor, Hunan University	Integration of unmanned aerial vehicles for building energy model generation
Prof. Haoshan REN Professor, South China University of Technology	Evaluate existing building photovoltaics and potentials in cities via machine learning assisted by multi-source information
Prof. Yang GENG Assistant Research Fellow, Tsinghua University	Human-environment multimodal data sensing and mining technology for smart buildings
Discussion	

6 Jan (Mon)

Workshop 2 : CSG collaboration: Building-grid interaction and load aggregation

13:30-15:40 Rm Z204

Chair: Prof. Dunnan LIU, Professor, North China Electric Power University
Prof. Hangxin LI, Research Assistant Professor , The Hong Kong Polytechnic University

Speaker	Presentation Title
Prof. Dunnan LIU Professor, North China Electric Power University	Research on key technologies of connected vehicle trading and market model design to promote green energy consumption
Prof. Zhaoxi LIU Professor, South China University of Technology	Optimal coordinated operation of distributed energy resources in active distribution networks
Prof. Xiaolong JIN Associate Professor, Tianjin University	Aggregation, control, and market mechanisms for large-scale buildings-to-grid
Dr Jing KANG Senior technical manager, Shenzhen Institute of Building Research Co., Ltd.	Using flexible loads for grid interaction: New opportunities for building energy saving and decarbonization
Prof. Huilong WANG Assistant Professor, Shenzhen University	Experimental analysis of an innovative RC-Mapping model for flexibility quantification of building air conditioning systems
Prof. Hangxin LI Research Assistant Professor, The Hong Kong Polytechnic University	Optimization and management of load flexibility in cooling-dominated non-residential buildings for improved grid interaction
Discussion	

6 Jan (Mon)

Workshop 3 : Energy management in smart grids cum Seminar for Key Program of National Natural Science Foundation of China—Low-Carbon Smart Operation of Integrated Energy System Considering Multi-energy Flow Trading Mechanism, Interaction Model and Decision-making Algorithm under Complex Time-Space Coupling Environment

13:30-15:40 Rm Z207

Chair: Prof. Zhao XU, Professor, The Hong Kong Polytechnic University

Speaker	Presentation Title
Prof. Can WAN Professor, Zhejiang University	Cost-oriented prediction intervals: On bridging the gap between probabilistic forecasting and decision in renewable power systems
Prof. Youwei JIA Associate Professor, Southern University of Science and Technology	Deep Coupling Process of Transportation-energy Networks with Large-scale Integration of Electric Vehicles
Prof. Gaoqi LIANG Professor, Harbin Institute of Technology	Climate Change Impacts on Power Planning—the case of Future Wind Energy Resource Prediction in Guangdong
Prof. Jian ZHAO Professor, Shanghai University of Electric Power	Situation Awareness for Distribution System: From Estimation to Self-evolution
Prof. Huaizhi WANG Associate Professor, Shenzhen University	Transient Stability Stochastic Switching Emergency Control for Coastal AC/DC Hybrid Power Systems under Extreme Typhoon Weather
Prof. Chun Sing LAI Professor, Brunel University of London	Smart City Transportation Technologies and Standardization
Discussion	

6 Jan (Mon)

Session 1: Integrated Energy System Design and Optimization - I

13:30-14:30 RmZ211

Chairs: Prof. Xinhua XU, Professor, Huazhong University of Science and Technology Prof. Minghao WANG, Assistant professor, University of Macau	
Author	**Title**
Yu Yang, Wenxuan Zhao, and Rongpeng Zhang	Design optimization for distributed multi-energy systems: An energetic-economic-environmental perspective with operational flexibility
Qi Xue, Xinqiao Jin, Yuan Lyu, Zhiyang Jia, Zhimin Du	Optimal capacity configuration of multiple chiller system based on design knowledge graph
Xin Liu and Zhonghua Gou	Optimizing Photovoltaic-Storage Building Energy Systems: A Comparative Study of Rule-Based and Reinforcement Learning Control for Grid Stability and Self-Consumption
Kailong Pang, Feng Wang, Tengfei (Tim) Zhang	Optimization of the Geometric Design of Photovoltaic Shading Devices (PVSDs) in a Multi-Story Building
Xiuxia Hao, Wenjie Gang, Chong Zhang and Ying Zhang	A Two-stage Intra-day Optimal Operation Optimization Method for Integrated Energy Systems

6 Jan (Mon)

Session 2: Digitalization and Smart Platforms for Energy Management - I

13:30 - 14:30 Rm Z212

Chairs: Prof. Zhengguo ZHANG, Professor, South China University of Technology Prof. Chong ZHANG, Professor, Huazhong University of Science and Technology	
Author	**Title**
Xingyu Yang, Zhen Yu, Xinhua Xu, Huai Li, Jianlin Wu and Li Li	Research on Automatic Extraction Methods for Connection Information of MEP System Equipment Based on BIM
Wanbin Dou, Xinlei Zhou, Mark Goldsworthy, Jun Shen and Zhenjun Ma	Development of a digital twin model for performance testing and evaluation of optimal control strategies for building HVAC systems
Jiefan Gu, Peng Xu, Linxue Li, Weixiang Wang, Ruiying Jin, Yi Zhu, Junjie Li, Hengsheng Jia, Moyun Liu and Yongjiu Lai	BIM-based Automatic Design Framework for Subway Station HVAC Systems and Environment Control Switch Cabinets
Wuyou Xiao, Yibo Ding and Zhao Xu	A review of deep learning methods for multi-energy load joint forecasting in integrated energy systems

6 Jan (Mon)

Session 3: Energy Storage and Management

14:40 - 15:40 Rm Z211

Chairs: Prof. Xuejun ZHANG, Professor, Zhejiang University Prof. Kui SHAN, Research Assistant Professor, The Hong Kong Polytechnic University	
Author	**Title**
Shukun Dong, Wenjie Gang, Keqi Chen, Lihong Su and Ying Zhang	Operation Optimization of Behind-the-meter Battery Energy Storage Systems Considering Multiple Electricity Markets
Xiaomin Chang, Bowen Guan, Xiaohua Liu and Tao Zhang	Analysis of Flexible Adjustment Potential for the Air-conditioning System in a Lithium Battery Factory Based on Model Prediction
Pei Huang	Diversified Dynamic Pricing Strategy for Mitigating Peak Demand in Distributed EV Charging Networks: A Real-World Case Study
Yihang Ye, Zhiang Zhang, Kehao Shi, Yuanli Ma, Hao Zhang, Xiaopeng Wang and Dezhou Kong	Data Mining for Deep Dehumidification in Li-ion Battery Manufacturing Using On-Site Operational Data

6 Jan (Mon)

Session 4: Digitalization and Smart Platforms for Energy Management - II

14:40 - 15:40 Rm Z212

Chairs: Prof. Tengfei ZHANG, Professor, Tianjin University
Prof. Xiuming LI, Associate Professor, Northeastern University

Author	Title
Dezhou Kong, Zhiang Zhang, Rabee Reffat, Zhexuan Chen, Zesheng Yang, Haocheng Ma, Xiaopeng Wang, Yihang Ye and Dengfeng Du	LightMBC-tool: A web-based platform to support industrial HVAC system energy efficiency
Timothy Lok, Wallace Lin, Barry Lau and Leo Li	Utilizing Cloud-Based Smart Energy Management Platform as a Property Developer
Howard Cheung	A Review of the Trend of Sustainable Building Development for Building Digitization Transformation
Lingyun Xie, Hangxin Li and Shengwei Wang	Design and construction of AI-enabled smart control stations for field-level optimization of building chiller plants

6 Jan (Mon)

Session 5: Renewable Energy Technologies and Applications

16:00 - 17:00 Rm Z204

Chairs: Prof. Zhonghua GOU, Professor, Wuhan University
Prof. Wenjie GANG, Associate Professor, Huazhong University of Science and Technology

Author	Title
Chengliang Xu, Shiao Chen, Yongjun Sun and Guannan Li	A GIS and deep learning integrated method for high-accuracy solar potential assessment of building facades at city scale
Rebecca Yang and Tharushi Samarasinghalage	Supporting optimal BIPV design through digitalization (abstract)
Xu Wang, Feng Wang and Tengfei (Tim) Zhang	Integrated Photovoltaic Facades for an Apartment in Eight Cities of China
Yuan Gao and Junichiro Otomo	Innovative Network Structures for Coupling Predictive Information: A Deep Reinforcement Learning Application in Building-integrated photovoltaics (BIPV)

6 Jan (Mon)

Session 6: Intelligent Control and Automation in Energy Systems - I

16:00 - 17:00 Rm Z207

Chairs: Prof. Zhe TIAN, Professor, Tianjin University
Prof. Yongbao CHEN, Research Assistant Professor, The Hong Kong Polytechnic University

Author	Title
Kai Hu, Chengchu Yan, Junjian Fang, Yizhe Xu and Chaoqun Zhuang	An enhanced multi-sensor calibration method for HVAC systems under uncertain fault conditions using segmented sliding windows
Zhe Chen and Fu Xiao	Enhancing smoothness in model-based online optimal control through multi-objective optimization approach
Xudong Li, Yibo Ding and Zhao Xu	Coordinated short-term dispatch for variable-speed pumped storage units, wind, solar and data center hybrid system

6 Jan (Mon)

Session 7: System Performance Prediction and Analysis - I

16:00 - 17:00 Rm Z211

Chairs: Prof. Tianyi ZHAO, Professor, Dalian University of Technology Prof. Maomao HU, Assistant Professor, National University of Singapore	
Author	**Title**
Jie Shen, Fanghao Zheng, and Wu Deng	Macro-Scale Prediction of Solar PV Siting in Perth and Brisbane Using CNN+Transformer and XAI
Zhiqian He, Qingzheng Liu, Anxu Chen, Ziheng Ni, Mingcheng Zhang, Shifei Yuan, Shiming Xu, He Fan and Xianyong Peng	Metal Temperature Prediction Model based on Attention-Enhanced CNN-BiLSTM for Pulverized Coal Boiler Reheat Wall
Lei Zhan, Guannan Li, Chengliang Xu, Jiajia Gao, Chen Xu, Enye Leng, Weijun Xu	Experience Knowledge Decomposition Data Generation: Enhanced multi-step short-term building energy predictions in data centers with data shortage issues
Wenkai Zhang, Zihan Wang and Yang Zhao	A U-Net based surrogate model for fast prediction of indoor airflow under variable geometries
Tianhang Wang, Wanting Tao, Yilin Li and Feng Deng	Long-term forecasting of high-rise residential building integrated photovoltaic system based on LSTM model in hot-summer and cold-winter regions in China

6 Jan (Mon)

Session 8: Building-grid Interaction and Energy-flexible Buildings/districts - I

16:00 - 17:00 Rm Z212

Chairs: Prof. Diance GAO, Professor, Sun Yat-sen University
Prof. Xiaolong JIN, Associate professor, Tianjin University

Author	Title
Yujia Jin, Han Zhu and Zhengrong Li	Impact of Heatwave Events on Energy Supply and Demand Systems in the Context of Climate Change: A Quantitative Analysis Based on the Yangtze River Delta Region
Kexin Xie, Rui Tang, Dimitrios Rovas	Sobol-based Sensitivity Analysis on building demand flexibility: an office case study in the UK
Cuiling Wang, Shiyu Yang, Baolong Wang and Man Pun Wan	An Easy-to-Integrate Model Predictive Control Using Inverse State-Space Thermal Model for Demand-Responsive Air-Conditioning Control
Keqi Chen, Wenjie Gang, Manjia Liu, Xiuxia Hao, and Shukun Dong	Study on the Temporal and Spatial Characteristics of Electricity Loads of 5G Base Stations Considering Impacts on the Grid

6 Jan (Mon)

Dialogue and debate between AI "promoters" and "challengers" in energy field

17:10 - 18:10 Rm Z209

Moderator	Panelists
Prof. Da YAN Professor, Tsinghua University	Prof. Yang ZHAO Professor, Zhejiang University
	Prof. Guanjing LIN Associate Professor, Tsinghua Shenzhen International Graduate School
	Prof. Cheng FAN Associate Professor, Shenzhen University
	Prof. Shengwei WANG Chair Professor, The Hong Kong Polytechnic University
	Mr. Edward TSUI Managing Director, Intelligent Technologies
	Dr Howard CHEUNG Technical Director, Building Energy Analytics Company Limited

7 Jan(Tue)

Keynote speech Rm Z209

9:00 – 10:20	**Prof. Xiang GAO** Academician of Chinese Academy of Engineering, President of Zhejiang University of Technology, Mainland China
	Prof. Henrik Madsen Head of Centre for IT-Intelligent Energy Systems in Cities, Section Head of Dynamical Systems, Technical University of Denmark, Denmark
10:20-10:50	**Coffee break**
10:50-11:30	**Prof. Dejan Mumovic** Director of the Institute for Environmental Design and Engineering, University College London (UCL), UK

7 Jan (Tue)

Parallel workshop sessions

11:30-12:10	Dialogue between power generation, distribution and consumers **Rm Z209**			
12:10 - 13:30	Lunch			
13:30 - 14:30	Workshop 4 **Rm Z204**	Workshop 5 **Rm Z207**	Workshop 6 **Rm Z211**	Session 9 **RmZ212**
14:40 - 15:40				Session 10 **RmZ212**
15:40 - 16:00	Coffee break			
16:00 - 17:00	Session 11 **Rm Z204**	Session 12 **Rm Z207**	Session 13 **Rm Z211**	Session 14 **Rm Z212**
17:10 - 17:50	Dialogue between scientists, professionals and policy makers **Rm Z209**			

Closing Ceremony Rm Z209

17:50 - 18:20	**Best paper awards presentation** **Prof. Zhejun MA** Chair of publish and selection committee
	Closing remarks Ir Prof. Shengwei WANG Chair of ICDIES 2025 **Next Conference**

7 Jan (Tue)

Dialogue between power generation, distribution and consumers

11:30-12:10 Rm Z209

Moderator:	Panelists
Prof. Jinhan MO Professor, Shenzhen University Prof. Lasantha Meegahapola Associate Professor, RMIT University	Prof. Zhao XU Professor, The Hong Kong Polytechnic University
	Prof. Minghao WANG Assistant professor, University of Macau
	Ir Wilson KWOK Head of Technical Services, Hong Kong Electric
	Prof. Chaoqun ZHUANG Professor, Nanjing Tech University
	Prof. Zhe WANG Assistant Professor, Hong Kong University of Science and Technology
	Prof. Rongling LI Professor, Technical University of Denmark

7 Jan (Tue)

Workshop 4 : RMIT-PolyU Future-Lab: Advanced load flexibility engagement technologies

13:30-15:40 Rm Z204

Chair: Prof. Lasantha Meegahapola, Associate Professor, RMIT University

Speaker	Presentation Title
Prof. Lasantha Meegahapola Associate Professor, RMIT University	Machine Learning based Energy Demand Prediction for Demand Response Market
Dr Mingkun DAI Postdoc Fellow, The Hong Kong Polytechnic University	A hierarchical optimal control strategy of cooling system for building demand limiting
Prof. Rebecca YANG Associate Professor, RMIT University	Energy Flexibility in Buildings, Communities and Urban Precinct
Mr. Wei LIAO PhD candidate, The Hong Kong Polytechnic University	Enhancing regional energy resilience: a coordinated charging and V2G discharging strategy through a building-transportation-grid network node model
Prof. Liuping WANG Professor, RMIT University	Model Predictive Control of Electrical Drives and Power Converters in Building Installations
Mr. Xingyu ZANG PhD candidate, The Hong Kong Polytechnic University	Assessment and optimal design of distributed energy systems for energy flexibility enhancement
Discussion	

7 Jan (Tue)

Workshop 5 : Energy storage material, integration and application

13:30-15:40 Rm Z207

Chair: Prof. Gongsheng Huang, Professor, City University of Hong Kong

Speaker	Presentation Title
Prof. Quan ZHANG Professor, Hunan University	Multiple energy storage challenges for the low carbon data center
Prof. Zhengguo ZHANG Professor, South China University of Technology	Thermal Storage for Advanced Battery Management
Prof. Xinhua XU Professor, Huazhong University of Science and Technology	A Pipe-encapsulated PCM Wall System for Active Heat Removal by Using Nocturnal Sky Radiative Cooling
Prof. Tao XU Professor, Guangzhou University	Development of sodium acetate trihydrate-glycine-potassium chloride composite phase change material for the swimming pool heating system.
Prof. Ziye LING Professor, South China University of Technology	Machine Learning for Thermal Analysis of Thermochemical Chip Cooling
Prof. Yongjun SUN Professor, City University of Hong Kong	Data-driven surrogate optimization for deploying heterogeneous multi-energy storage to improve demand response performance at building cluster level
Prof. Gongsheng HUANG Professor, City University of Hong Kong	Power control of latent heat thermal energy storage system
Discussion	

7 Jan (Tue)

Workshop 6: Artificial Intelligence for energy management

13:30-15:40 Rm Z211

Chair: Prof. Yang Zhao, Professor, Zhejiang University

Speaker	Presentation Title
Prof. Rongling LI Professor, Technical University of Denmark	IEA EBC - Annex 96 - Grid Integrated Control of Buildings
Prof. Diance GAO Professor, Sun Yat-sen University	Similarity-based dataset optimization for machine-learning based short-term building cooling load prediction
Prof. Wenjie GANG Associate Professor, Huazhong University of Science and Technology	Imputation and disaggregation of energy consumption data for demand response based on machine learning methods
Prof. Chaoqun ZHUANG Professor, Nanjing Tech University	Linked Deep Gaussian Processes for Digital Twins in Building Energy Systems
Prof. Cheng FAN Associate Professor, Shenzhen University	Novel machine learning paradigms-enabled solutions for reliable building energy modeling
Prof. Maomao HU Assistant Professor, National University of Singapore	Data or Algorithms: Reliability and Interpretability of Machine Learning in Building Load Forecasting
Discussion	

7 Jan (Tue)

Session 9: Data Analytics and Performance Diagnosis for Energy Systems

13:30 - 14:30 Rm Z212

Chairs: Prof. Xinqiao JIN, Professor, Shanghai Jiao Tong University
Prof. Yixing CHEN, Professor, Hunan University

Author	Title
Lihong Su, Wenjie Gang, Ying Zhang, and Xiuxia Hao	An unsupervised non-intrusive load monitoring method for HVAC systems based on MSTL method
Yong Deng, Jiaqiang Wang, Peizhi Yang, Yit Jing Ee and Kamaruzzaman Sopian	An unsupervised fault detection diagnosis for sensor faults in data center cooling system with reconstruction-based contribution (RBC) coupled with KPCA method
Jian Zhang, Chaobo Zhang and Yang Zhao	Causal discovery-based post mining method for operation anomaly detection of building energy systems
Fanchen Kong, Mingxuan Huang, Shuo Zhang, Mingsheng Tang, Huiming Zou, Zhouhang Hu and Changqing Tian	A Novel Online Detection Method of Linear Refrigeration Compressor Stroke Based on Artificial Neural Network
Ying Liu, Siliang Chen, Xinbin Liang and Zhimin Du	Data augmentation based open set fault diagnosis on building energy systems

7 Jan (Tue)

Session 10: Integrated Energy System Design and Optimization - II

14:40 - 15:40 Rm Z212

Chairs: Prof. Yuvraj Sahni, Research Assistant Professor, The Hong Kong Polytechnic University
Prof. Zhaoxi LIU, Professor, South China University of Technology

Author	Title
Ziyang Zhan, Yang Jing, Zixuan Peng, Qinghuan Liu and Xiaoyun Xie	Study on the Applicability of Air-cooled Data Center Cooling Systems in Different Regions of China
Xiaoyue Yi, Haotian Li, Llewellyn Tang, and Yu Zheng	A graph neural network-based fault detection framework for combined building-integrated photovoltaics, energy storage, and building flexibility control systems
Menglong Lu and Zhenjun Ma	Numerical modeling and uncertainty-based design for renewable energy systems with energy storage in net/nearly zero energy buildings

7 Jan (Tue)

Session 11: System Performance Prediction and Analysis - II

16:00 - 17:00 Rm Z204

Chairs: Prof. Yongjun SUN, Associate Professor, City University of Hong Kong
Prof. Jiaqiang WANG, Associate Professor , Central South University

Author	Title
Haonan Zhou, Yaxi Zhang, Jiaji Li, Jinfeng Wu and Diance Gao	Data analysis of transfer learning-based building load forecasting
Zhongjun Ren, Hu Zhang and Tao Huang	Application of Transfer Learning Models based on Multi-layer LSTM Deep Learning Framework in Cooling Prediction
Zhipeng Guo, Yu Jiang , Leqi Zhu and Guanjing Lin	Development of monthly energy consumption prediction model for new VRF systems in office buildings: A Case Study in Guangdong, China
Yamei Ma, Yingjun Ruan, Tingting Xu, Yuting Yao and Hua Meng	Short term energy consumption prediction of regional building group based on spatiotemporal graph convolutional network considering spatiotemporal correlation between building nodes
Shiqi Zhou, Junfang Wang, Zhekang Dong, Xiaoyue Ji, Chun Sing Lai and Jujie Yuan	Multi-region Probabilistic Load Forecasting with Graph Bayesian Transformer Network

7 Jan (Tue)

Session 12: Building-grid Interaction and Energy-flexible Buildings/districts-II

16:00 - 17:00 Rm Z207

Chairs: Prof. Rongling LI, Professor, Technical University of Denmark
Prof. Huilong WANG, Assistant Professor, Shenzhen University

Author	Title
Ying Zhang, Wenjie Gang, Xiuxia Hao and Lihong Su	An unsupervised assessment method of HVAC demand response potential based on the total energy consumption of buildings
Wenya Xu, Yingjun Ruan, Tingting Xu, Yuting Yao, Hua Meng and Yanxue Li	Investigation of residential heat and transport electrification considering grid flexibility within existing zero energy houses
Xiaopeng Wang, Qiang Wei, Zhenwen Guo, Jialu Li, Zesheng Yang and Zhiang Zhang	Assessment of Energy flexibility based on different control methods on thermally activated system: a case study on zero-energy office building
Yemao Li, Barry Lau, Jean Qin, Bin Hao, Lemon Liu, Lin Sun and Haichao Yu	Integrated practice of photovoltaic, energy storage, DC microgrid and flexible energy control technologies in commercial buildings
Kaige Wang, Rebecca Yang, Chengyang Liu, Jiatong Zhang	Enhancing Energy Flexibility and Renewable Integration in Water Utilities through Machine Learning-based Battery Automation

7 Jan (Tue)

Session 13: Intelligent Control and Automation in Energy Systems - II

16:00 - 17:00 Rm Z211

Chairs: Prof. Baolong WANG, Associate Professor, Tsinghua University
Prof. Chaoqun ZHUANG, Professor, Nanjing Tech University

Author	Title
Yue Yuan, Liying Gao, Kejun Zeng, Yongbo Li, and Yixing Chen	An Occupant-Centric Evaluation Framework for Intelligent Comfort and Energy-Efficient Control Systems
Yuying LIANG and Gongsheng Huang	Thermal performance in condensation-free personalized radiant cooling boards: an experimental approach
Xiao Wang, Hubert Jian, Yino Gu, Jean Qin, Xuyuan Kang, and Da Yan	Implementation of reinforcement learning for smart control of a large chiller plant
Jiyuan Cui, Konstantin Filonenko and Rongling Li	Model predictive control in a neighborhood district heating system
Naifeng Han, Qiang Zhao, Tishi Huang, Feng Huang, Shiyu Zhou, Wenke Zhang, Ping Cui, and Yabin Wu	Load prediction study for the air conditioning system based on LSSVM optimized by PSO algorithm

7 Jan (Tue)

Session 14: Advanced Technologies in Sustainable Energy Solutions

16:00 - 17:00 Rm Z212

Chairs: Prof. Zhimin DU, Associate Professor, Shanghai Jiao Tong University
Prof. Haoshan REN, Professor, South China University of Technology

Author	Title
Qi Li, Xiaowei Luo, and Maomao Hu	Multi-modal deep ensemble learning neural networks for microclimate assessment with urban morphological maps
Yizhuo Fan, Jiaqiang Wang, Gao Shu , Shu Xiao , Yit Jing Eb, Kamaruzzaman Sopian	A real-time correction model of carbon emission factors and a measurement method of carbon emissions in coal-fired power plants based on data fusion
Wenxuan Zhao, Rongpeng Zhang, Shengwei Wang	Environmental features, optimal design methods and advanced control technologies of high-precision industrial buildings
Zhijie Liu, Zeyu Liu, Junhao Yan, Ding Wang, Zun Liu and Limei Shen	A Flexible Organic Thermoelectric Power Generator with Potential for Smart Sensing Applications
Chengyang Liu, Rebecca Yang, Chen Liu, Ali Moradi Amani, Nirajan Shiwakoti, Yusen Zhao, Jiatong Zhang	Digital-twin enabled renewable energy transition for sustainable urban precinct

7 Jan (Tue)

Dialogue between scientists, professionals and policy makers

17:10 - 17:50 Rm Z209

Moderator:	Panelists
Ir Harry LAI, BBS Executive Director, Hong Kong Green Building Council	Ir Alex LAI Acting Chief Engineer, Electrical and Mechanical Services Department, Hong Kong SAR Government
	Prof. Linda Fu XIAO Professor, The Hong Kong Polytechnic University
	Prof. Gongsheng HUANG Professor, City University of Hong Kong
	Ir Gary CHIANG Principal Manager, CLP Power Hong Kong Ltd.
	Dr Jianying QIN Deputy Director of Technical Services and Sustainable Development, Swire Properties (China) Investment Company Limited

7 Jan (Tue)

Closing Ceremony Rm Z209

	Best Paper Award Presentation **Prof. Zhejun MA** Chair of publish and selection committee, ICDIES 2025 Deputy Director of the Sustainable Buildings Research Centre, University of Wollongong, Australia
17:50 - 18:20	**Closing Remarks** **Ir Prof. Shengwei WANG** Chair of First International Conference on Digital Intelligence for Energy Systems Chair Professor of Building Energy and Automation Director of Research Institute for Smart Energy (RISE) The Hong Kong Polytechnic University **Next Conference**

Moderator Biography

(by alphabetical order of surname)

Ir Harry LAI, BBS

Executive Director
Hong Kong Green Building Council

Biography

Ir Harry LAI, BBS is the Executive Director of the Hong Kong Green Building Council. He was the Principal Advisor of the Electrical and Mechanical Services Department from 2019 to 2023, and the Deputy Director of the Department before his retirement from the civil services in 2019.

Ir LAI is a chartered engineer, fellow member of the Hong Kong Institution of Engineers and also fellow member of the Institution of Engineering and Technology, UK. He is the Adjunct Professor of the School of Energy and Environment, City University of Hong Kong and also the Adjunct Professor of the Research Institute for Smart Energy, Hong Kong Polytechnic University.

Prof. Lasantha Meegahapola

Associate Professor
RMIT University

Biography

Prof. Lasantha Meegahapola received the PhD from the Queen's University of Belfast, UK, in 2010. He received the BSc. Eng. degree in Electrical Engineering (First Class, Honours) from the University of Moratuwa, Sri Lanka in 2006. Prof. Meegahapola is currently with the Department of Electrical and Electronic Engineering, School of Engineering, RMIT University, Australia. He has more than 17 years of research experience in power system dynamics & stability with renewable power generation, and microgrid dynamics, stability & control. He has been involved with seminal research and industry projects, such as technical feasibility analysis of super-capacitors for providing frequency regulation services in wind farms and the characterisation of the combined-cycle gas-turbine lean blowout phenomenon. He has published more than 200 peer-reviewed journal and conference articles and has supervised 17 PhD students to completion to date. He is a Senior Member of IEEE (SMIEEE), a Member of the IEEE Power Engineering Society (PES) and a Member of the IEEE Industry Applications Society (IAS). He is an active member of the IEEE Power and Energy Society (PES), Power System Dynamic Performance (PSDP) committee task forces on microgrid stability analysis and microgrid dynamic modelling. Prof. Meegahapola also serves as an associate editor of the IEEE Transactions on Power Systems, IEEE Power Engineering Letters, IEEE Transactions on Industry Applications and IET Renewable Power Generation journals.

Prof. Jinhan MO

Professor
Shenzhen University

Biography

Dr. Jinhan Mo earned his Ph.D. in Heating, Ventilation and Air Conditioning from Tsinghua University and did Postdoctoral research in Inorganic Chemistry at Tsinghua University. He is now a distinguished Professor at the College of Civil and Transportation Engineering, Shenzhen University. He was a tenured associate professor in the Department of Building Science at Tsinghua University. His research interests include component transportation and separation at interfaces (including mass transfer of gaseous or solid-phase contaminants on indoor surfaces, advanced indoor air separation/purification technologies, air pollution sampling and analysis based on microfluidics and AIoT). He is also starting to study photovoltaic cells and building integrated photovoltaics (BIPV).

He has authored more than 100 journal papers, including Small, Applied Catalysis B: Environmental, Environ. Sci. & Technol., Chemical Engineering Journal, Building and Environment, Environmental Health Perspective, with more than 3900 citations (WoS), h-index of 46. Besides, he has authored 4 books and 4 book chapters, and more than 20 patents (16 authorized).

Dr. Jinhan MO is the recipient of some awards and honors, including the Yaglou Award (2016) from the International Society of Indoor Air Quality and Climate (ISIAQ) for being the most promising young (under age of 37) researcher in the field of indoor air science, National Science Fund for Distinguished Young Scholars (2023) and National Science Fund for Excellent Young Scholars (2017) of National Natural Science Foundation of China (NSFC), Second Prize of Beijing Natural Science Award (Ranking 1/6), First Prize of Beijing Science and Technology Award (Ranking 3/15), Prof. He Xinzhou Award for academic excellence from the Chinese Society for Environmental Sciences (2017).

He serves as the Subject Editor of Building Simulation; Engineering Associate Editor of National Science Open, Editorial Board Member of Energy and Built Environment, Journal of HV&AC (in Chinese), and Journal of Appliance Science & Technology (in Chinese). He is an academy fellow of the International Society of Indoor Air Quality and Climate (FISIAQ). He is the vice-secretary (2017-present) of the Indoor Environment and Health Branch of the Chinese Society for Environmental Science, and president (2017-2019) of the Youth Committee of Indoor Environment and Health Branch of the Chinese Society for Environmental Science.

Prof. Da YAN

Professor
Tsinghua University

Biography

Dr. Yan is a full professor from School of Architecture, Tsinghua University. He is the Editor-in-chief of Building Simulation and Section Editor of Energy and Buildings. He is also the Chair of China HVAC Society's Building Simulation Committee, Chair of IBPSA-China, IBPSA Fellow and Chair of ASHRAE TC 7.10 on Occupant Behaviour in Building. Professor Yan mainly focuses on the development of building performance simulation software DeST, modelling of occupant behaviour, and low-carbon and energy-efficiency related policy. He has published over 240 journal articles and more than 10 books, with an H-index of 57 (by google). During 2013 to 2018, he was the OA of IEA EBC Annex 66 with more than 100 participants from more than 20 countries, working on "Definition and simulation of occupant behaviour in buildings". He was the recipient of the Second Prize of National Science Progress Award of China.

Guest Biography

(by alphabetical order of surname)

Dr Howard CHEUNG

Technical Director
Building Energy Analytics Company Limited

Biography

Howard is a Technical Director at Building Energy Analytics Company Limited. He obtained his doctorate degree in Mechanical Engineering in the US in 2014. He has more than 10 years of research and project experience for smart & green buildings in the industry and the academia. He has written more than 40 relevant journal and conference publications and 2 patents. He has also performed energy and green building consultancy projects at multiple hotels, grade-A office buildings and other types of premises in Hong Kong. He is also supporting innovation of software platform for automatic energy auditing and company ESG reporting. He is also keen on contributing to the industry by hosting seminar sessions on data analytics in practice on PyData Hong Kong and has been corresponding members for multiple technical committees at ASHRAE.

Ir Gary CHIANG

Principal Manager
CLP Power Hong Kong Ltd.

Biography

Gary is Principle Manager at CLP Power Hong Kong Ltd who responsible for the new business development in sustainability and energy management. He has over 20 years' extensive for construction projects in both Hong Kong and South China, with solid experiences for strategy planning across consultant, contractor & power utility.

He is past chair of the Chartered Institution of Building Services Engineers (CIBSE, Hong Kong Region) and Energy Institute (EI, Hong Kong Branch). He is also the Registered Energy Assessors (REA) and Certified Carbon Auditor (CAP) .

Prof. Cheng FAN

Associate Professor
Shenzhen University

Biography

Dr. Fan is an Associate Professor in the College of Civil and Transportation Engineering in Shenzhen University, China. His research expertise falls into the multidisciplinary field of building energy management, building system optimization, fault diagnosis and advanced data analytics. He has published over 50 peer-reviewed journal papers with over 6,200 citations. At present, he serves as the subject editor of Building Simulation and executive associate editor of Clean Energy Science and Technology.

Prof. Zhimin DU

Associate Professor
Shanghai Jiao Tong University

Biography

Dr. Zhimin Du is an associate professor at School of Mechanical Engineering, Shanghai Jiao Tong University. His research focuses on AI of building energy systems. He and his team has developed efficient AI tools including optimal control, fault detection and diagnosis, predictive maintenance and intelligent O&M, which has been applied in the HVAC&R systems of commercial buildings, data centers and industrial scenarios. He has published more than 100 papers, which has the more than 2000 citations.

Prof. Wenjie GANG

Associate Professor
Huazhong University of Science and Technology

Biography

Wenjie Gang is the Associate professor of Building Environment and Energy Engineering in Huazhong University of Science and Technology. Her research interests include building energy efficiency, smart control in buildings, demand response, distributed energy systems, load forecast and disaggregation etc. Over 70 papers have been published in journals such as Applied Energy, Energy Conversion and Management, Energy and Buildings, etc. She also works as the PI for many projects from NSFC and industry.

Prof. Diance GAO

Professor
SUN YAT-SEN University

Biography

Diance Gao, professor of SUN YAT-SEN University of China, is extensively involved in the research and application on building energy and intelligent buildings in the subject areas including: building energy efficiency, optimal control and fault diagnosis of building systems, building energy management for smart grid. He Attained Scientific and Technological Progress Award of Guangdong Province.

Prof. Yang GENG

Assistant Researcher Fellow
Tsinghua University

Biography

Dr. Yang GENG is an Assistant Research Fellow at the School of Architecture, Tsinghua University. His research focuses on intelligent sensing and optimization control of built environment, as well as flexible energy use technologies for buildings in new power systems. He has led projects such as the National Natural Science Foundation of China for Young Scholars and sub-tasks of the "14th Five-Year Plan" National Key Research and Development Program. He has published over 40 papers in domestic and international journals, and has been cited more than 1200 times in total by Web of Science, with 3 papers selected as ESI Highly Cited Papers. He has obtained 5 authorized invention patents and participated in the compilation of 2 standards. He serves as the Board Member of Building Simulation Professional Committee and the Youth Editorial Board Member of Building Simulation and Architectural Intelligence. He has won the First Prize of Huaxia Construction Science and Technology, the First Prize of the China Real Estate Association Science and Technology Award, the First Prize of Beijing Science and Technology, the Outstanding Doctoral Dissertation Award of Tsinghua University, and the Outstanding Instructor Award of Tsinghua University's Carbon Neutrality Practice Project.

Prof. Maomao HU

Assistant Professor
National University of Singapore

Biography

Dr. Hu is an Assistant Professor in the Department of the Built Environment at the National University of Singapore (NUS) since January 2024, leading the Building Informatics and Operations Research (BIOR) Lab. Prior to joining NUS, Dr. Hu worked as a postdoctoral scholar in the Department of Energy Science & Engineering at Stanford University from 2022 to 2023 and in the Department of Engineering Science at the University of Oxford from 2020 to 2021. He received his PhD degree in Building Environment and Energy Engineering from The Hong Kong Polytechnic University in 2019.

His research focuses on developing sustainable and scalable technologies and computational tools to make today's building and urban energy systems low-carbon, energy-efficient, energy-flexible/grid-interactive, and climate-resilient using data analytics, machine learning, optimization, and advanced model-based controls across a wide range of scales. He has been actively contributing to international collaborations, including the ongoing IEA EBC Annex 81 (Data-Driven Smart Buildings) and Annex 82 (Energy Flexible Buildings Towards Resilient Low Carbon Energy Systems).

Prof. Gongsheng HUANG

Professor
City University of Hong Kong

Biography

Dr Huang, currently a professor in the Department of Architecture and Civil Engineering, City University of Hong Kong, a Member of ASHRAE, and PhD from University of Oxford, has been doing research in the areas of building energy efficiency, HVAC control and optimization, building performance simulation, thermal storage and radiant cooling. His research aims to promote building energy efficiency using advanced control and optimization techniques as well as new radiant cooling techniques. He has been rewarded more than 25 research projects from governments and industries and published over 200 academic papers.

Prof. Xiaolong JIN

Associate professor
Tianjin University

Biography

Xiaolong Jin is an associate professor with the Key Laboratory of Smart Grid of Ministry of Education, Department of Electrical Engineering, Tianjin University. His research interests include energy management of multi-energy buildings and their integrations with integrated energy systems, and the energy & flexibility markets solutions. From 2019 to 2022, he was a postdoc researcher with the Centre of Electric Power and Energy, Technical University of Denmark, Denmark. From 2017 to 2019, he was a joint Ph.D. student with the School of Engineering, Cardiff University, UK. He has published more than 60 papers with over 2000 citations, including 2 ESI top 1% highly cited papers, and led several projects such as the projects of National Natural Science Foundation of China. He is ranked as the World's Top 2% most-cited scientists 2023 and 2024 by Stanford University.

Prof. Xinqiao JIN

Professor
Shanghai Jiao Tong University

Biography

JIN Xinqiao, born on Oct.1965, graduated from Shanghai Jiao Tong University in 1987 and 1990 for his bachelor and master degrees, he got PhD from Shanghai Jiao Tong University in 2000 in the field of Refrigeration and Cryogenics Engineering, he was promoted as Associate Professor in 1999, and Professor in 2005.

Prof. Jin has published more than 200 journal papers; about 100 international journal papers. His major contributions are simulation of building and HVAC systems, optimal control of refrigeration and air conditioning systems, energy evaluation for operation and management of HVAC systems, operation and optimal control of VRF refrigeration system, and FDD of HVAC and control system. Currently He is member of Notional Standard Committee (refrigeration section), expert of National Science and Technology Award, consultant of government purchasing of Jiangsu Province.

He had got the Science and Technology Progress Award of Ministry Education (3rd Class) in 1999, Science and Technology Progress Award of Shanghai (3rd Class) in 2000, Science and Technology Progress Award of Shanghai (2nd Class) in 2004, Science and Technology Progress Award of Machinery Industry Federation (2nd Class) in 2023.

Prof. Youwei JIA

Associate Professor
Southern University of Science and Technology

Biography

Dr Youwei Jia is a tenured Associate Professor at Southern University of Science and Technology. He was listed among the Stanford University Top 2% Scientists Worldwide 2024. He has also been the recipient of several talent research programs in China, including the Youth Talent Support Program. the Guangdong Youth Innovation Talent Project, and the Shenzhen Overseas High-Level Talent Program. Dr. Jia's research focuses on the optimization and operation control of distributed energy systems. His expertise includes microgrid system and vehicle-to-grid (V2G) technology. He has led two General Projects funded by the National Natural Science Foundation of China and more than ten provincial research programs. In recent years, Dr. Jia has published over 130 papers in top-tier international journals and conferences, including more than 50 papers in JCR Q1 journals. Dr Jia is also the recipient of Innovation Award of City I&T Grand Challenge 2021 in Hong Kong.

Dr Jing KANG

Shenzhen Institute of Building Research Co., Ltd.

Biography

KANG Jing, PhD for Building Services Engineering, the Senior technical manager of Shenzhen Institute of Building Research Co., Ltd. Working in the DC building laboratory, he focuses on the research of engineering technologies for building energy saving and carbon emission reduction, main includes the PEDF engineering applications, the Virtual Power Plant for buildings and the flexibility control methods for building air conditioning systems. From 2019, He leads and joins three items of National Key Research and Development Projects and four items of International Research Founding projects. He also conducts engineering design and practices to accumulate application experiments. He joined the compose of Design standard for direct current power distribution of civil buildings, achieved five patents, a software copyright and published 16 research papers.

Ir Alex LAI

Acting Chief Engineer
Electrical and Mechanical Services Department, The Government of HKSAR

Biography

Alex LAI is a chartered engineer with more than 15 years of experience in information technology and electronic engineering. He is currently leading the Innovation Office of the Electrical and Mechanical Services Department of the Hong Kong Special Administrative Region Government and facilitating collaboration between government departments and public bodies with the I&T sector to encourage the application of innovative technology to improve services and support smart city development.

Prof. Chun Sing LAI

Senior Lecturer
Brunel University of London

Biography

Chun Sing Lai received the B.Eng. (First Class Hons.) in electronic and electrical engineering from Brunel University of London, UK, in 2013, and the D.Phil. degree in engineering science from the University of Oxford, UK, in 2019.

He is currently a Senior Lecturer with the Department of Electronic and Electrical Engineering and Course Director of MSc Electric Vehicle Systems at Brunel University London. His research interests are in power system optimization and electric vehicle systems. Dr. Lai was a Technical Program Co-Chair for 2022 IEEE International Smart Cities Conference. He is the Vice-Chair of the IEEE Smart Cities Publications Committee. He is an Associate Editor for IEEE Transactions on Systems, Man, and Cybernetics: Systems, IEEE Transactions on Consumer Electronics and IET Energy Conversion and Economics. He is the Working Group Chair for IEEE P2814 and P3166 Standards, an Associate Vice President, Systems Science and Engineering of the IEEE Systems, Man, and Cybernetics Society (IEEE/SMCS) and Co-Chair of the IEEE SMC Intelligent Power and Energy Systems Technical Committee. He is a recipient of the 2022 Meritorious Service Award from the IEEE SMC Society for "meritorious and significant service to IEEE SMC Society technical activities and standards development". He is an IEEE Senior Member, an IET Member, a Chartered Engineer, and a Fellow of the Higher Education Academy.

Prof. Li LAN

Professor
Shanghai Jiao Tong University

Biography

Li Lan is a professor on in Building Science at Department of Architecture, Shanghai Jiao Tong University. She performs multidisciplinary research mainly on the effects of built environment on human health, work performance and sleep quality, and elucidate the physiological and psychological mechanisms behind. She is an ISIAQ academy Fellow and awardee of the Ralph G. Nevins Physiology and Human Environment Award.

Prof. Gaoqi LIANG

Researcher
Harbin Institute of Technology, Shenzhen

Biography

Dr. Gaoqi Liang is a researcher at the School of Mechanical Engineering and Automation, Harbin Institute of Technology, Shenzhen. She is a recipient of the National-level Young Talent Project award and has been included in the "Top 2% of the World's Top Scientists" list by Stanford University in 2022, 2023, and 2024. Dr. Liang earned her Bachelor's degree from North China Electric Power University in 2012 and her Ph.D. from the University of Newcastle, Australia, in 2017. Her research expertise focuses on smart grid cybersecurity and the low-carbon transformation of new power systems. She has published over 40 academic papers, including 4 "ESI Highly Cited Papers." Her work has garnered more than 4,600 citations on Google Scholar.

Prof. Guanjing LIN

Associate Professor
Tsinghua Shenzhen International Graduate School

Biography

Guanjing Lin is an Associate Professor of the institute of Future Human Habitats at the Tsinghua Shenzhen International Graduate School, Tsinghua University. Her research focus on smart building energy management, fault detection and diagnostics, and optimal control. She has worked in Lawrence Berkeley National Laboratory, United States from 2013 to 2022, and was the recipient of the 2020 “U.S. Federal Laboratory Consortium Award for Excellence in Technology Transfer”.

Prof. Dunnan LIU

Professor
North China Electric Power University

Biography

Dunnan Liu, Professor, doctoral supervisor. He is currently the deputy director of the Energy Internet Research Center of North China Electric Power University, the secretary-general of the Energy Internet Special Committee of China Energy Research Society, and a delegate to the 10th National Congress of China Association for Science and Technology. From 1997 to 2008, he received his bachelor's, master's and Doctor's degrees from the Department of Electrical Engineering, Tsinghua University, and completed his postdoctoral research under Academician Lu Qiang. His research interests include power market, energy Internet and power dispatching. Responsible for 1 national social science major project, 1 national key research and development plan subproject; 2 National Natural Science Foundation of China ; 2 national demonstration projects; Published 4 monographs; 34 domestic and foreign invention patents authorized; 33 scientific research awards, including 7 provincial and ministerial awards; Won the 12th "Invention and Entrepreneurship Award · Personality Award"; In recent years, he has been engaged in the construction of time-segment medium and long-term trading and retail market, and has cooperated with 20 provincial power trading institutions in China to carry out relevant research.

Prof. Zhenjun MA

Professor and Deputy Director of Sustainable Buildings Research Centre
University of Wollongong

Biography

Dr Zhenjun Ma is a Professor and Deputy Director of Sustainable Buildings Research Centre at the University of Wollongong. He obtained his BEng and MSc degrees from Xian Jiaotong University and PhD degree from The Hong Kong Polytechnic University. His research is mainly focused on renewable heating and cooling, distributed energy generation, thermal energy storage, and demand flexibility and demand response of buildings. He is a recipient of several prestigious awards such as an Innovation Award (Energy Efficiency category) from the World Society of Sustainable Energy Technologies; an Excellence Award in HVAC&R (Heating, Ventilation, Air Conditioning and Refrigeration) Research from the Australian Institute of Refrigeration, Air Conditioning and Heating; and an Engineering Education Engagement Award from the Australasian Association for Engineering Education.

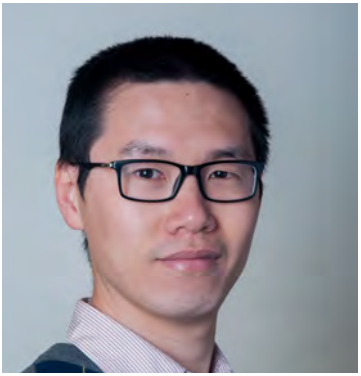
Prof. Ziye LING

Professor

South China University of Technology

Biography

Dr. Ziye LING is a professor at the School of Chemistry and Chemical Engineering, South China University of Technology (SCUT), where he also serves as the Deputy Director of the Department of Energy Chemical Engineering. He received his Ph.D. in Chemical Engineering from SCUT in 2016. His research interests include thermal storage materials and thermal simulations, battery thermal management and safety systems. Dr. Ling has published over 60 papers, and he has been recognized in 2024 on the Elsevier/Stanford University list of the World's Top 2% Most-Cited Scientists for career-long impact. Dr. Ling is actively involved in industry R&D, collaborating with leading companies such as Wärtsilä and Midea to advance innovations in energy solutions and thermal management technologies.



Prof. Zhaoxi LIU

Professor
South China University of Technology

Biography

Zhaoxi Liu (Senior Member, IEEE) received his bachelor and master degrees from Tsinghua University and his Ph.D. degree from Technical University of Denmark (DTU). He is currently a professor at the School of Electric Power Engineering, South China University of Technology. He has over ten years of experience in the academic research and industrial projects of power and energy engineering in China, Denmark and the United States. He has contributed to more than fifteen large-scale industrial power engineering projects. He has published more than 50 articles as the author or co-author in journals, as book chapters or in conference proceedings. His research interests include power system operation and control, power system security and risk management, and the integration of renewable energy sources and distributed energy resources in energy systems.

Mr Fuyu QIN

PhD student
Guangzhou University

Biography

Fuyu Qin, PhD student, School of Civil and Transportation Engineering, Guangzhou University. research interests: energy storage and energy conservation.

Dr Jianying QIN

Deputy Director of Technical Services and Sustainable Development, Swire Properties (China) Investment Company Limited

Biography

Dr. Jean Qin works with Swire Properties for technical services and sustainability as a Deputy Director stationed in Beijing, oversees the high efficiency design and operation of the company's Chinese Mainland portfolios.

With over 30 years of experience on the design and operation of sustainable and high efficiency buildings in both Chinese Mainland and Hong Kong, Dr Qin devoted to a series of building energy conservation projects with fruitful achievements including ASHRAE Technology Award. She published more than 20 technical papers to share the practical application experiences with the industry.

She also managed the research funds with universities for the company and is working on the integration of multiple-discipline efforts for building life-cycle sustainability. She is actively involved in the cutting-edge technologies application for building energy structure optimization and energy efficiency improvement.

Prof. Haoshan REN

Professor

South China University of Technology

Biography

Haoshan REN is a Professor at the South China University of Technology (SCUT) School of Architecture. Haoshan has been involved in research on a wide variety of topics in urban decarbonization, building solar energy potential characterization, building energy flexibility, and phase change thermal energy storage.

Haoshan holds a bachelor's degree in Energy Engineering and a PhD in Sustainable Building Technologies, respectively from Zhejiang University and the University of Wollongong in 2015 and 2020. He joined SCUT as a professor in 2024. In 2024, Haoshan was granted the Marie Skłodowska-Curie Actions fellowship hosted by the Norwegian University of Science and Technology.

Prof. Yongjun SUN

Associate Professor
City University of Hong Kong

Biography

Dr. Sun obtained his bachelor and master degrees in thermal energy and power from Xi'an Jiaotong University (XJTU) and in refrigeration and cryogenics from Hua Zhong University of Science and Technology (HUST) in 2003 and 2006 respectively, and he received his PhD degree in building services engineering from the Hong Kong Polytechnic University in 2010. Before he joined in City University of Hong Kong in 2014, he was a postdoctoral research fellow at the Department of Building Services Engineering, the Hong Kong Polytechnic University. Dr. Sun's current research focuses on urban decarbonization, built environment, renewable energy smart applications, immersion cooling technologies for data centers, and zero carbon buildings.

Mr. Edward TSUI

Managing Director
Intelligent Technologies

Biography

Edward is the founder and Managing Director of Intelligent Technologies Ltd, has over 25 years experience in HVAC engineering and system integration. Edward and his company have provided energy efficiency and IAQ solutions for facilities in Asia, including system analytics, Retro-commissioning, operation and maintenance. Edward is the pioneer of using the Big Data, IoT and M2M technologies to achieve smart buildings today.

Edward serves as the Society Vice President of ASHRAE. He was also the Chair of the Publication and Education Council of ASHRAE. He has served as Director and Regional Chair of ASHRAE Asia Pacific Region as well as chapter President of ASHRAE Hong Kong Chapter. He also served as voting members of ASHRAE Technical Committees TC7.5 – Smart Building Systems, TC9.9 – Mission Facilities, Data Centers, Tech Spaces & Electronic Equipment.

Edward research interests including city ventilation, smart buildings and smart cities. He has authored few publications at prestigious international conferences and journals, such as ASHRAE Conference and Transaction, Healthy Buildings Conference)

Prof. Huilong WANG

Assistant Professor
Shenzhen University

Biography

Dr. Wang is an Assistant Professor and Associate Research Fellow in Shenzhen University, China. He earned his Bachelor's degree from Tongji University in 2011 and his Ph.D. from the Hong Kong Polytechnic University in 2016. His research expertise falls into the multidisciplinary field of building energy management, energy -flexible buildings, optimal control of HVAC for demand response. He hosted six research projects funded by national, provincial, and municipal natural science foundations, with a total funding amount of 4.5 million RMB. He published over 20 papers in well-known journals. His achievements have been recognized with multiple awards, including the Second Prize of the Guangdong Science and Technology Award.

Prof. Minghao WANG

Assistant professor
University of Macau

Biography

Ming-Hao Wang (S'15-M'2018) received the B.Eng.(Hons.) degree in electrical and electronic en- gineering from the Huazhong University of Science and Technology, Wuhan, China, and the University of Birmingham, Birmingham, U.K. in 2012, and the M.Sc. and the Ph.D. degree, both in electrical and electronic engineering, from The University of Hong Kong, Hong Kong, in 2013 and 2017, respectively. Since 2018, he has been with the Department of Electrical Engineering, Hong Kong Polytechnic University, Hong Kong. Currently, he is an assistant professor in the State Key Laboratory of Internet of Things for Smart City and Department of Electrical and Computer Engineering, the University of Macau, Macau, SAR, China. His search interests include power systems and power electronics.

Prof. Tao XU

Professor
Guangzhou University

Biography

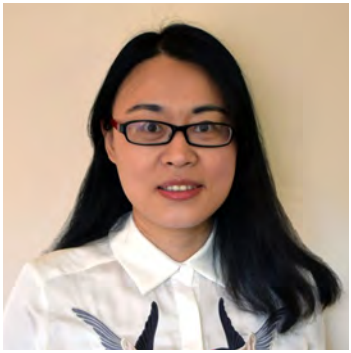
Tao Xu, Professor and Doctoral Supervisor of Guangzhou University, selected as one of the top 2% top scientists in the world in 2023, and an expert in energy-saving technology in Guangdong Province. He has long been engaged in the research and development of energy-saving technologies, solar energy utilisation, phase change thermal storage materials and other functional materials for buildings, industries and agricultural greenhouses. He has presided over more than 30 projects of the National Natural Science Foundation of China, key team projects of the Natural Science Foundation of Guangdong Province, and major applied science and technology special projects of Guangdong Province, won the Science and Technology Progress Award of Guangdong Province, and cooperated with many listed companies in the development and application of phase-change heat storage technology. He has published more than 50 papers in domestic and international academic journals and academic conferences, including more than 40 SCI retrievals, obtained more than 10 authorised invention patents, and published 3 textbooks.

Prof. Xinhua XU

Professor
Huazhong University of Science and Technology

Biography

Prof. Xinhua Xu is currently working as Professor at Huazhong University of Science and Technology, and Research Fellow at The Hong Kong Polytechnic University. He obtained his Ph.D. in Building Services Engineering from The Hong Kong Polytechnic University, Hong Kong, China in 2005. His area of research interest focuses on several issues, such as Utilization of Renewable Energy, Building Thermal and Moisture Transfer Process Analysis, Building Energy Efficiency Technology, Optimal and Intelligent Control of Air-Conditioning Systems and Building System, AI Applications in HVAC. Prof. Xinhua Xu received honours includes the research fund of program for New Century Excellent Talents in University, the research fund of Chu Tian Scholar Scheme of Hubei Province. He has been rewarded 3 NSF funds as PI, more than 80 funds from industrial fields. He has published four books and over 200 academic journal papers including about 100 SCI papers, 24 Chinese patents. He is the editorial board member of international journals “Discover Mechanical Engineering” and “Scientific Report”, “Buildings”, and serves as reviewer for other international journals such as Renewable Energy, Energy and Buildings, Building and Environment, Applied Energy, Energy, etc.



Prof. Rebecca YANG

Professor
RMIT University

Biography

Professor Rebecca Yang is a scholar of renewable energy, building and construction. She leads a Solar Energy Application Lab at RMIT University focusing on renewable energy transitions in buildings, industries, communities, and urban scales. She is a vice chair and board member of the Australian PV Institute, the chair of the Asia Pacific Solar Research Conference 2023, and the head of Australian Building Integrated PV Alliance. Rebecca is the Australian lead and expert in the International Energy Agency (IEA) collaborative programs in Building Integrated PV and Solar energy buildings. Nominated by Standards Australia, she is also an Australian National Mirror Committee member for International Electrotechnical Commission (IEC) TC 82 Solar photovoltaic energy systems, especially working on the international standard development in the ISO/IEC Joint Working Group 11 on Building Integrated PV.

Prof. Chong ZHANG

Professor
Huazhong University of Science and Technology

Biography

Dr. Zhang obtained his BEng, MSc degrees and PhD from Huazhong University of Science and Technology. He joined The Hong Kong Polytechnic University as a postdoctoral fellow in June 2020 and promoted to research fellow in April 2022. He joined School of Architecture and Urban Planning, Huazhong University of Science and Technology as an associate professor in February 2023. He published more than 30 peer-review journal papers. Dr. Zhang has been doing multidisciplinary research on low (net-zero) energy building, smart building, data-driven modelling, heat pump driven liquid desiccant dehumidification system, high-performance building envelopes, etc. He short-listed for the Hong Kong Scholar Program 2019, and received the Youth Outstanding Paper Awards of 21th National Academic Conference on Heating, Ventilation, Air-conditioning and Refrigeration 2018, Outstanding Paper Awards of National Academic Conference on Air-conditioning, 2017. Dr. Zhang's work has been funded by National Science Foundation of China (NSFC), China Postdoctoral Science Foundation, Hong Kong Scholar Program, etc.

Prof. Quan ZHANG

Professor
Hunan University

Biography

Dr. Zhang Quan is a professor at Hunan University, specializing in the innovation of new infrastructure technologies to enhance energy efficiency and overall performance. His research focuses particularly on the development of novel cooling systems and the exploration of their underlying principles and mechanisms. With extensive engineering experience and investigation, he has supervised approximately 20 Ph.D. candidates, guiding them towards obtaining their doctoral degrees. Dr. Zhang has also published over 150 peer-reviewed papers and secured more than 20 patents. The practical application of his research achievements has resulted in significant energy savings and cost reductions in various engineering projects. He has successfully completed around 40 research projects in collaboration with industries and government support. Dr. Zhang's contributions have been recognized with several prestigious awards at both the ministry and provincial levels.

Prof. Xuejun ZHANG

Professor
Zhejiang University

Biography

Dr. Professor Xuejun Zhang is Director of the Institute of Refrigeration and Cryogenics of Zhejiang University. He received the Ph.D. degree in 2003, from Shanghai Jiao Tong University. In 2004, he became an Assistant Professor at Zhejiang University; in 2006, Associate Professor; and in 2013, Full Professor.

His current research interests focus on energy recovery, utilization and control in HVAC systems, mainly including thermal-moisture decoupling theory, energy storage AC system, dehumidification AC system, air separation and purification technology, and cultural relic's environment control technology etc. In recent years, he has obtained over 40 authorized Chinese invention patents, and published over 50 SCI papers, in which one was cited by over 100 times in Scopus. In 2012, by the leading research achievement named "Research and application of the control technology of museum thermal-moisture environment", he won the second prize of the Zhejiang Province Science and Technology Award.

Prof. Jian ZHAO

Professor
Shanghai University of Electric Power

Biography

Professor Zhao Jian holds a Ph.D. in Electrical Engineering from the Hong Kong Polytechnic University. He previously served as a Research Associate at the Hong Kong Polytechnic University and a Visiting Scholar at the Argonne National Laboratory in the United States. In 2018, he joined Shanghai University of Electric Power as a Bright Scholar. In recent years, Professor Zhao has led numerous significant projects, including those funded by the National Natural Science Foundation of China, sub-projects of the National Key Research and Development Programme, the 'Morning Glory Programme' of the Shanghai Municipal Education Commission, the Excellent Youth Programme of the Shanghai Municipal Education Commission, and the 'Yangfan Programme' of the Shanghai Municipal Science and Technology Commission. These projects have collectively received funding exceeding 10 million RMB. He has published over 50 papers in SCI/EI journals, with more than 20 of these appearing in IEEE Trans. journals as the first or corresponding author. Additionally, he has filed 49 national invention patents, 24 of which have been authorized. Professor Zhao has won several prestigious awards, including the Third Prize of China Electric Power Science and Technology Award, the Second Prize of Science and Technology Award of China Association for the Promotion of Electric Power Development, and the Third Prize of the Award for Technological Innovation and Application of Artificial Intelligence Technology of the Chinese Society of Electrical Engineering. Currently, Professor Zhao serves as an assistant editorial board member of PCMPS, a journal listed in the CAS Zone 1, and as an editorial board member of the FER Special Issue of an SCI journal. He is also a member of the Youth Academic Committee of the Chinese EI journal 'Power System Protection and Control' and the Chinese core journal 'Zhejiang Electric Power'. Furthermore, he heads the Shanghai Youth Innovation Laboratory 'Innovation Laboratory of Novel Electric Power System' and the 'New Power System Innovation Laboratory'. Professor Zhao has reviewed articles for more than 10 top-tier and high-level domestic and international journals, including TPWRS and TII. He has been awarded the Best Conference Paper Award by the IEEE PES Society and has been recognized as the Best Reviewer for the CAS Zone 1 journal TSG. He has also supervised master's degree students, with many achieving notable success. Under his supervision, students have won the First Prize in the 18th Challenge Cup National Extracurricular Academic and Technological Works Competition for Undergraduates in China, the Special Prize in Shanghai, and the First Prize of the 21st Chen Jiageng Youth Invention Prize in Shanghai. Additionally, Professor Zhao has participated in the IEEE P3334 Standards Working Group, contributing to the formulation of two IEEE international standards and one group standard by the Chinese Society of Electrical Engineering.

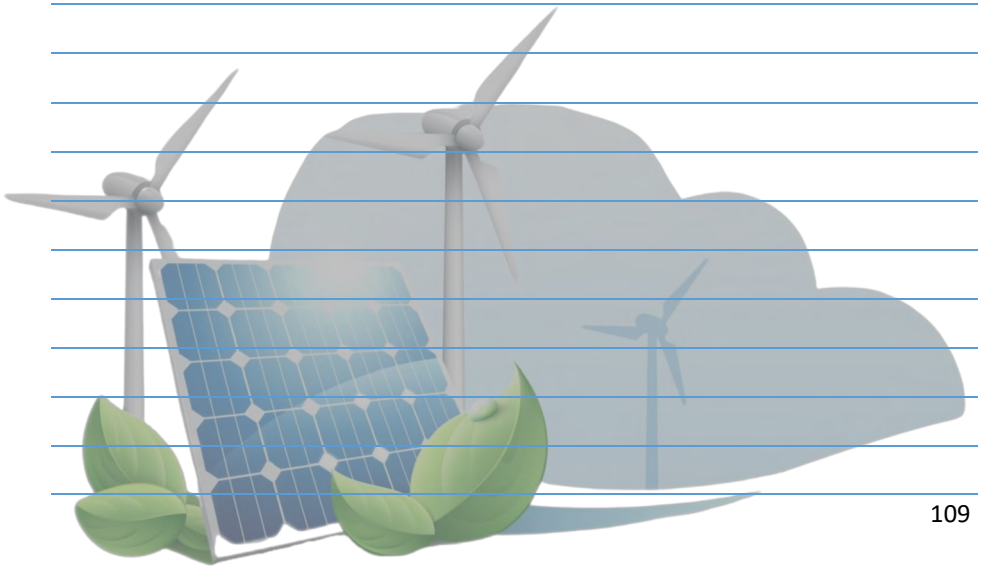
Prof. Chaoqun ZHUANG

Professor
Nanjing Tech University

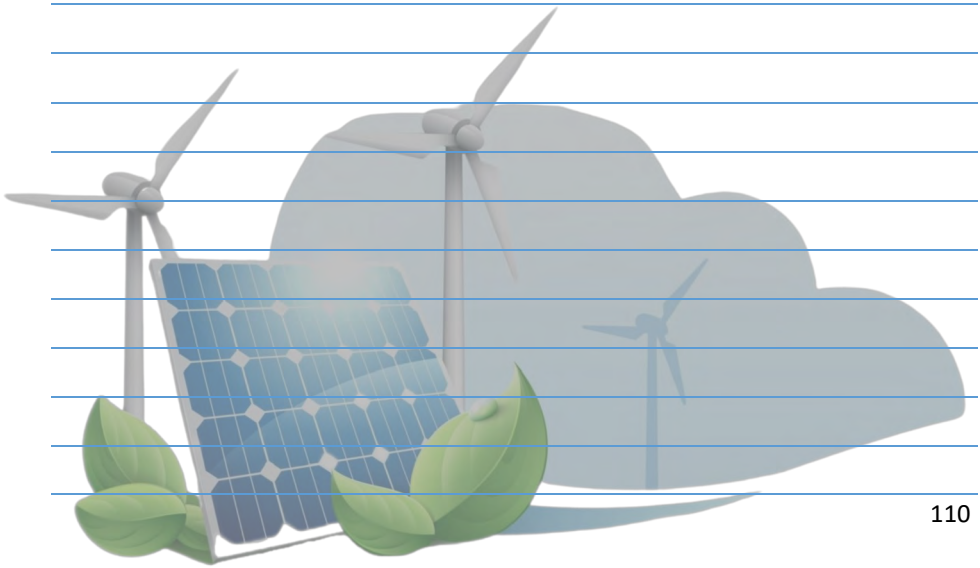
Biography

Chaoqun Zhuang is currently a professor at Nanjing Tech University and a visiting academic fellow at the University of Cambridge. His research focuses on data-driven modelling and control optimisation for building energy systems. After awarding his PhD from the Hong Kong Polytechnic University in 2020, he served as a postdoctoral researcher at the Alan Turing Institute and the University of Cambridge. He has headed several projects funded by the NSFC, Turing, C-DICE, and Cambridge University.

Notes



Notes



Notes