

CONFERENCE PROGRAM

PEEE 2022

2022 3rd International Conference on

POWER, ENERGY AND ELECTRICAL ENGINEERING



Barcelona Spain

November 18-20 2022



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TABLE OF CONTENTS

Conference Committees	2
Conference Instruction.....	3
Schedule at a Glance.....	4
Test Sessions on November 18th.....	5
Keynote & Invited Speakers.....	6
Technical Sessions on November 19th	
Session 1 - Solar Energy, Photovoltaic Grid Connection and Power Generation Prediction	10
Session 2 - Power System Analysis and State Evaluation	11
Technical Sessions on November 20th	
Session 3 - Grid Connected Inverter and Stability Control	12
Session 4 - Power System Protection and Control	13
Session 5 - High Voltage Apparatus and Power Cable	14
Session 6 - Industrial Energy System Management and Energy Consumption Prediction	15
Session 7 - Power Electronics Technology and Wireless Power Transmission	16
Session 8 - Motor Drive and Control	17
Session 9 - Fuel Cell Technology, Renewable Energy and Fuel Combustion	18
Session 10 - Building Energy Management, Energy-Saving Technology and Thermal Energy Engineering	19

CONFERENCE COMMITTEES

Conference Committee Chairs

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A. R. Al-Ali, American University of Sharjah, UAE

Program Committee Chairs

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Jesus Toribio, University of Salamanca, Spain
Dennis Lieu, University of California Berkeley, USA

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Ramesh Singh, University of Malaya, Malaysia
Wahri Sunanda, Universitas Bangka Belitung, Indonesia
Tsung-Mou Huang, Taiwan Power Co. , Taiwan

CONFERENCE INSTRUCTION

Time Zone

Barcelona Time (GMT/UTC+1)

You're suggested to set up the time on your computer in advance.

Platform

We will be using **Zoom** for all our live stream sessions. So, if you haven't installed it, please download a Zoom client from: <https://zoom.us/download>

The Zoom account is not mandatory to attend the conference. If you do not want to register the account, by entering meeting ID is also accessible to our conference.

Learn the Zoom skills at: <https://support.zoom.us/hc/en-us/articles/206618765-Zoom-Video-Tutorials>

Join the Test Session before the Formal Session

Date: November 18, 2022

Prior to the formal meeting, presenters shall join the test room to ensure everything is on the right track. Please check your test time on this program.

To effectively control the time and avoid some unexpected situations, we advise you record your presentation and send to organizer ahead of time.

Keynote Speaker: about 40 minutes for presentation and 5 minutes for Q&A;

Invited Speaker: about 30 minutes for presentation and 5 minutes for Q&A;

Author Presentation: about 13 minutes for presentation and 2 minutes for Q&A.

Equipment Needed

- A computer with internet connection and camera
- Headphones

Environment Needed

- Quiet Location
- Stable internet connection
- Proper lighting and background

Attention Please

The conference will be recorded. We will appreciate your proper behavior.

Presentation Recording and Broadcasting

The photograph(s) or video or audio recording(s) will be taken by conference organizer. It will be used in for conference program purpose. The photograph(s) or video or audio recording(s) will be destroyed after the conference, it cannot be distributed to or shared with anyone, it shall not be used for commercial nor illegal purpose. Each presentation will be recorded, if you don't want it, please inform our staff ahead of time.

Do not record other presenters' presentation nor distribute it to or share with anyone unless the presenter gives written consent of agree. Failure to do so will be considered a serious academic violation subject to disciplinary/ lawful action.

SCHEDULE AT A GLANCE

November 18, 2022 (Friday)		
8:00-12:00	Online Test	
November 19, 2022 (Saturday)		Zoom Meeting ID
Prof. A. R. Al-Ali, American University of Sharjah, UAE		822 1056 5287
9:30-9:35	Opening Remark by Prof. Om Malik, University of Calgary, Canada	
9:35-10:20	Keynote Speaker I Prof. Carlo Alberto Nucci, University of Bologna, Italy Topic: Climate Neutral and Smart Cities: the EU view	
10:20-10:35	Break and Group Photo	
10:35-11:20	Keynote Speaker II Prof. A. R. Al-Ali, American University of Sharjah, UAE Topic: Smart Grid Networks Reference Model within the Fog Computing Context	
11:20-13:00	Lunch Break	
Chairperson: Prof. A. R. Al-Ali, American University of Sharjah, UAE		822 1056 5287
13:00-13:45	Keynote Speaker III Prof. Hossam A. Gabbar, Ontario Tech University, Canada Topic: Transactive Mobility with Hybrid Charging Infrastructures	
13:45-14:20	Invited Speaker Dr. Hakim Nesreddine, Hydro-Quebec, Canada Topic: Integrated Energy Systems in Remote Areas	
14:20-14:35	Break	
14:35-16:20	Session 1 - Solar Energy, Photovoltaic Grid Connection and Power Generation Prediction	
14:35-16:20	Session 2 - Power System Protection and Control	898 5036 7605
November 20, 2022 (Sunday)		
8:30-10:15	Session 3 - Power System Analysis and State Evaluation	822 1056 5287
8:30-10:15	Session 4 - Grid Connected Inverter and Stability Control	898 5036 7605
10:30-12:15	Session 5 - High Voltage Apparatus and Power Cable	822 1056 5287
10:30-12:15	Session 6 - Industrial Energy System Management and Energy Consumption Prediction	898 5036 7605
12:15-13:00	Lunch Break	
13:00-14:45	Session 7 - Power Electronics Technology and Wireless Power Transmission	822 1056 5287
13:00-14:45	Session 8 - Motor Drive and Control	898 5036 7605
15:00-16:45	Session 9- Fuel Cell Technology, Renewable Energy and Fuel Combustion	822 1056 5287
15:00-16:45	Session 10 - Building Energy Management, Energy-Saving Technology and Thermal Energy Engineering	898 5036 7605

TEST SESSIONS ON NOVEMBER 18

Time	Room A Meeting ID: 822 1056 5287 https://us02web.zoom.us/j/82210565287	Room B Meeting ID: 898 5036 7605 https://us02web.zoom.us/j/89850367605
8:00-9:00	<p>Test Session 1 PEEE22-264, PEEE22-135, PEEE22-265, PEEE22-3110, PEEE22-3120, PEEE22-136, PEEE22-3111</p> <p>Test Session 3 PEEE22-243E, PEEE22-125, PEEE22-251, PEEE22-252, PEEE22-273, PEEE22-3114, PEEE22-124</p>	<p>Test Session 2 PEEE22-280, PEEE22-263E, PEEE22-267, PEEE22-291, PEEE22-3117, PEEE22-241, PEEE22-3122</p> <p>Test Session 4 PEEE22-110E, PEEE22-118, PEEE22-245, PEEE22-278, PEEE22-262, PEEE22-116, PEEE22-279</p>
9:15-10:45	<p>Test Session 5 PEEE22-115, PEEE22-249, PEEE22-114, PEEE22-266, PEEE22-105, PEEE22-260, PEEE22-3108</p> <p>Test Session 7 PEEE22-122, PEEE22-255, PEEE22-271, PEEE22-109E, PEEE22-111E, PEEE22-258, PEEE22-139E</p> <p>Test Session 9 PEEE22-3123, PEEE22-242, PEEE22-274, PEEE22-3107, PEEE22-286, PEEE22-242E, PEEE22-254E</p>	<p>Test Session 6 PEEE22-113, PEEE22-109, PEEE22-104, PEEE22-3124E, PEEE22-3101, PEEE22-3113, PEEE22-263</p> <p>Test Session 8 PEEE22-120, PEEE22-257, PEEE22-268, PEEE22-296, PEEE22-138, PEEE22-270, PEEE22-276</p> <p>Test Session 10 PEEE22-292, PEEE22-101, PEEE22-250, PEEE22-111, PEEE22-259, PEEE22-299, PEEE22-288</p>
11:00-12:00	Test Keynote & Invited Speakers	

KEYNOTE SPEAKER

November 19 | 9:35-10:20

Meeting ID: 822 1056 5287

<https://us02web.zoom.us/j/82210565287>

Prof. Carlo Alberto Nucci, IEEE Fellow

- University of Bologna, Italy

Bio: Carlo Alberto Nucci is a Full Professor of Electric power systems at the Department DEI – “Guglielmo Marconi”, University of Bologna. He is an IEEE and CIGRE Fellow. Prof. Nucci is Doctor Honoris Causa of the University Politehnica of Bucharest, a member of the Academy of Science of Bologna Institute and Advisory professor at Tsinghua University, Beijing. His research interests concern smart grids, energy communities, smart cities, power systems dynamics and electromagnetic transients, with particular reference to restoration after blackout and lightning impact on power systems. He has served as Editor-in-Chief of the Electric Power Systems Research journal (Elsevier) from 2010 to 2021. He has served as the President of the Italian Group of the University Professors of Electrical Power Systems (GUSEE) from 2012 to 2015. He is presently serving as the Italian Representative in the Horizon Europe Mission “Climate-Neutral and Smart cities”, serving as MUR reference for the MITE revision of the National Strategy for Sustainable Development, and as a member of the Technical Scientific Committee of the Regional Energy Plan of Emilia Romagna Region, Italy. He is also serving as chair of the International Conference on Lightning Protection, ICLP.

Climate Neutral and Smart Cities: the EU view

Abstract: The EU Mission on Climate Neutral and Smart City combines the achievement of climate neutrality with the implementation of the Smart City model. A city today cannot be 'only' smart, it also requires climate neutrality, i.e., the achievement of net zero greenhouse gas emissions. To achieve this double objective, Europe envisages the development of two main 'pillars': a Mission Platform and a Climate City Contract. The mission accomplishment is expected to be achieved by using the indications gathered through a bottom-up approach and a multi-level governance.

It is now generally accepted that the climate emergency must be addressed in cities: they cover about 3% of the planet's soil but produce over 70% of all global greenhouse gas emissions. Cities are not only growing rapidly – in Europe it is estimated that by 2050 almost 85% of Europeans will live in cities – but also the "laboratory" in which the decarbonisation strategies of energy, transport, buildings, and even industry and agriculture coexist and intersect, and where the density of infrastructures and their use is larger, there is also greater potential for intersectoral integration of complex infrastructures to achieve a more general smart grid paradigm. The progressive electrification of consumption in various sectors, favoured by the growing diffusion of generation powered by renewable sources, and the push towards the creation of energy communities envisaged by the RED II and IEM European directives, underline the growing importance that the electricity system will play in this context. The primary energy sources that are needed to produce electricity remain however an issue still which needs major and coordinated efforts to be solved, as the use of renewable sources is still very limited. The present picture will be summarised in this contribution from different perspectives: world, Europe in Italy. The final part of this contribution will be devoted to Energy Communities, formed by citizens' associations, commercial activities or companies for the production and sharing of electricity from renewable sources. They may bring a significant contribution for the accomplishment of the energy transition in several countries and represent the core of smart districts, capable of transforming themselves into so-called Positive Energy Districts.

KEYNOTE SPEAKER

November 19 | 10:35-11:20

Meeting ID: 822 1056 5287

<https://us02web.zoom.us/j/82210565287>

Prof. A. R. Al-Ali

- American University of Sharjah, UAE

Bio: A. R. Al-Ali (SM IEEE) received his Ph.D. in electrical engineering and a minor in computer science from Vanderbilt University, Nashville, TN, USA, Master degree from Polytechnic Institute of New York, USA, and B.Sc.EE from Aleppo University, Syria. Professor Al-Ali worked as an associate/assistant professor in KFUPM, Saudi Arabia (1991- 2000), and has been a Professor of Computer Science and Engineering at the American University of Sharjah (UAE) since 2000. His research and teaching interests include; embedded systems hardware and software architectures, smart homes automations, smart grid evolutions and development, smart factories and cities. Professor Al-Ali has many conference and journal publications including two USA and European Patents. He has also been invited to deliver keynote speeches on the recent evolution and development on the Internet of Things, Cyber-Physical Systems, smart grid & energy, and smart cities at several regional and international conferences.

Smart Grid Networks Reference Model within the Fog Computing Context

Abstract: Edge and cloud computing have been empowering the Smart grid and its domains from generation to distribution, including distributed renewable energy resources. Cloud computing platforms provide tremendous computing, platform, and software services that support big data analytics, visualization, and storage. As the internet of things became a de facto to connect the smart grid things starting from the last mile, distribution, and substations, decentralize and centralized generations, the cloud has some limitations such as latency, bandwidth, and context awareness. Nowadays, fog computing services are introduced to overcome some the cloud computing services. This talk proposes three tiers computing platforms conceptual that includes Edge, Fog and Cloud. A case study will highlight the application of such model in residential smart grid.

KEYNOTE SPEAKER

November 19 | 13:00-13:45

Meeting ID: 822 1056 5287

<https://us02web.zoom.us/j/82210565287>

Prof. Hossam A. Gabbar

- Director of Smart Energy Systems Lab, Ontario Tech University, Canada

Bio: Dr. Gabbar is a full Professor in the Faculty of Energy Systems and Nuclear Science, and cross appointed in the Faculty of Engineering and Applied Science, at Ontario Tech University (UOIT), where he has established the Energy Safety and Control Lab (ESCL), Smart Energy Systems Lab, and Advanced Plasma Engineering Lab. He is the recipient of the Senior Research Excellence Award for 2016, UOIT. He is recognized among the top 2% of worldwide scientists with high citation in the area of energy. He is leading national and international research in the areas of smart energy grids, energy safety and control systems, and waste to energy using advanced plasma technologies. Dr. Gabbar obtained his B.Sc. degree in 1988 with first class of honor from the Faculty of Engineering, Alexandria University (Egypt). In 2001, he obtained his Ph.D. degree from Okayama University (Japan). From 2001 till 2004, he joined Tokyo Institute of Technology (Japan), as a research associate. From 2004 till 2008, he joined Okayama University (Japan) as an Associate Professor, in the Division of Industrial Innovation Sciences. From 2007 till 2008, he was a Visiting Professor at the University of Toronto. He also worked as process control, safety, and automation specialist in energy and oil & gas industries. Dr. Gabbar has more than 230 publications, including patents, books / chapters, journal and conference papers.

Transactive Mobility with Hybrid Charging Infrastructures

Abstract: Mobility is supported by transportation infrastructures based on energy networks to meet mobility demands. Transportation electrification enables mobility with more penetration of electric vehicles (EVs) and hydrogen-based fuel cell vehicles (HVs), besides internal combustion vehicles. The charging infrastructures should support mobility based on hybrid transportation technologies. The complex and expensive transition to transportation electrification infrastructures can be alleviated by implementing transactive mobility, which will provide cost management of different layers within the mobility services infrastructures. This talk presents an integrated framework and advanced approaches for transactive mobility in view of hybrid charging infrastructures. The interface between transactive energy and charging infrastructures will be modeled and formulated by the transactive mobility model.

INVITED SPEAKER

November 19 | 13:45-14:20

Meeting ID: 822 1056 5287

<https://us02web.zoom.us/j/82210565287>

Dr. Hakim Nesreddine

- Hydro-Quebec, Canada

Bio: Hakim Nesreddine is currently an R&D project leader at Hydro-Quebec, a major Canadian electric utility. He is a holder of a BSc in climate control engineering and a PhD in mechanical engineering. He also earned a Master of Business administration (MBA) with a concentration in project management. Over the course of his career, he has acquired extensive experience in energy industry, both from a technical and business perspective. His expertise includes distributed power generation, waste heat recovery and energy conversion. During the last decade, Dr. Nesreddine led multidisciplinary teams dedicated to developing cutting-edge technologies and applications in partnership with leading companies. His current projects focus on integrating sustainable solutions and implementing advanced control logic for demand flexibility to decarbonize buildings and industrial processes. He has made numerous scientific and technical contributions, including peer-reviewed research papers, chapter books and patents.

During his career, he was appointed adjunct professor at the University of Sherbrooke where he has taught undergraduate courses in science/engineering and acted as an adviser to PhD candidates. He has given several plenary lectures at international conferences and has been a member of expert panels on green energy and energy efficiency. In addition, Dr. Nesreddine has served on the steering Committee of the Canada Green Building Council and has participated in numerous technical committees and working groups of the Canadian Standard Association (CSA).

Dr. Nesreddine is involved in international research collaborations with universities and public R&D laboratories to promote open innovation and professional/student exchanges. He is a member of the scientific and R&D committee of Institut Nordique du Québec and member of the advisory committee of NSERC Chair on energy efficiency in industry.

Integrated Energy Systems in Remote Areas

Abstract: Despite efforts made in recent years toward cleaner energy production, most of remote communities' and mining companies' rely heavily on diesel-fuelled generators for electricity generation. The volatility of diesel cost and likely to increase combined with high costs of fuel transportation and the willingness for greenhouse gas (GHG) reduction are providing opportunities to include or increase renewable power sources in the energy mix.

The speech will provide an overview of the global remote micro-grid market and forecasts. A strategic profiling of key players and a comprehensive analysis of their market position in terms of ranking and core competencies will be presented. An emphasis is put on the integration of high shares of renewable energy sources namely solar and wind and the different challenges due to their variable nature.

November 19, 2022
UTC/GMT+1

Session 1 - Solar Energy, Photovoltaic Grid Connection and Power Generation Prediction

Chairperson: To be added

Meeting ID: 822 1056 5287

<https://us02web.zoom.us/j/82210565287>

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

14:35-14:50	(PEEE22-264) Energy and Exergy Assessment for a University of Sharjah's PV grid-connected System based on Experimental for Harsh Terrestrial Conditions Tareq Salameh , Abdul Kadir Hamid, Mena Maurice Farag, Essam M.Abo-Zahhad University of Sharjah, United Arab Emirates
14:50-15:05	(PEEE22-135) Short-term Probabilistic Forecasting Models Using Beta Distributions for Photovoltaic Plants L. Alfredo Fernandez-Jimenez , Claudio Monteiro, Ignacio J. Ramirez-Rosado University of La Rioja, Spain
15:05-15:20	(PEEE22-265) Experimental and Numerical Simulation of 2.88 kW PV grid-Connected System under The Terrestrial Conditions of Sharjah City Tareq Salameh, Abdul Kadir Hamid , Mena Maurice Farag, Essam M.Abo-Zahhad University of Sharjah, United Arab Emirates
15:20-15:35	(PEEE22-3110) Multitasking Recurrent Neural Network for Photovoltaic Power Generation Prediction Hui Song , Nameer Al Khafaf, Ammar Kamoona, Samaneh Sadat Sajjad, Ali Moradi Amani, Mahdi Jalili, Xinghuo Yu, and Peter McTaggart RMIT University, Australia
15:35-15:50	(PEEE22-3120) Experimental Investigation of the Effect of Optical Filters on the Performance of the Solar Photovoltaic System Nouf Khalid Almarzooqi, Fahad Faraz Ahmad, Abdul Kadir Hamid, Chaouki Ghenai, Mena Maurice Farag, Tareq Salameh University of Sharjah, United Arab Emirates
15:50-16:05	(PEEE22-136) Short-Term Net Load Forecast in Distribution Networks with PV Penetration behind the Meter Alberto Falces , Candido Capellan-Villacian, Montserrat Mendoza-Villena, Pedro J. Zorzano-Santamaria, Pedro M. Lara-Santillan, Eduardo Garcia-Garrido, L. Alfredo Fernandez-Jimenez, Enrique Zorzano-Alba University of La Rioja, Spain
16:05-16:20	(PEEE22-3111) Oyster Mushroom Drying Efficiency Using a Solar Dryer Phatcharaporn Sukkanta , Kornkanok Eiamkij, Nachason Junset, Krittaphas Mongkoldhumrongkul King Mongkut's University of Technology North Bangkok, Thailand

Best Presentation Award & Session Group Photo

November 19, 2022
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Session 2 - Power System Protection and Control

Chairperson: To be added

Meeting ID: 898 5036 7605

<https://us02web.zoom.us/j/89850367605>

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

14:35-14:50	(PEEE22-280) Multi-architecture Power Distribution Strategy for Flexible DC Interconnection System Considering the Capacity Limitation Chuyang Wang, Qiuyue Zhang , Can Li Hohai University, China
14:50-15:05	(PEEE22-263E) An Integrated Control Method of Multi-source Islanded Microgrids Gong Wang, Guichao Duan , Jie Duan, Shengxian Cao, Yuanhua Song, Jiajin Kang Northeast Electric Power University, China
15:05-15:20	(PEEE22-267) Backup Protection Method Based on Multi-interval Information in Low Voltage Distribution Network of High Proportion of Renewable Energy System Ping Xiong, Fan Xiao, Dan Liu, Kan Cao, Xiangyu Han , Minghao Wen Huazhong University of Science and Technology, China
15:20-15:35	(PEEE22-291) Unbalance Compensated Distance Relay for Active Distribution Networks S. Velasco-Gómez, S. Pérez-Londoño , J. Mora-Floréz Universidad Tecnológica de Pereira, Colombia
15:35-15:50	(PEEE22-3117) Improvement of Overcurrent Protection for Control Rod Drive Mechanism Power System Lingjin Zhu , Xianggen Yin, Liming Tan, Yikai Wang, Tiejun Ma, Yang Deng, Zhen Li, Qinghui Lu Huazhong University of Science and Technology, China
15:50-16:05	(PEEE22-241) Coordinated Control and Application of Multi-Terminal DC Distribution System Wei Deng, Wei Pei, Yuting Teng , Qi Wu, Yin Yi, Xinji Cao Chinese Academy of Sciences, China
16:05-16:20	(PEEE22-3122) Research on Parallel Operation of Active Intervention Type Arc Extinguishing Device and Arc Suppression Coil Wei Shi , Chao Gu, Jie Li, Jingwen Sun, Pipei Zhang, Peng Wang State Grid Shandong Electric Power Research Institute, China
Best Presentation Award & Session Group Photo	

November 20, 2022
UTC/GMT+1

Session 3 - Power System Analysis and State Evaluation

Chairperson: To be added

Meeting ID: 822 1056 5287

<https://us02web.zoom.us/j/82210565287>

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8:30-8:45	(PEEE22-243E) Two-Dimensional Convolution-Based Power System Reliability Assessment Lewei Zhu, Kewen Long , Ziheng Dong, Kai Hou Tianjin University of Technology, China
8:45-9:00	(PEEE22-125) Equivalent Model for Interconnected Power Systems Based on Sensitivity Consistency of Tie-Line Power Jingwei Zhang , Shuyong Li, Wei Dai, Haiqing Cai, Yuanhong Lu, Dongdong Zhang, Xinzhang Wu Guangxi University, China
9:00-9:15	(PEEE22-251) Reliability Evaluation of High Permeability Renewable Energy Distribution Network Considering Energy Storage Charge and Discharge Strategy Jiemin Zhang, Jia Liu , Long Chen, Libo Zhang, Pingliang Zeng, Yalou Li Hangzhou Dianzi University, China
9:15-9:30	(PEEE22-252) Risk Assessment Method of Loop Closing Operation in Low-Voltage Distribution Network based on Fuzzy Comprehensive Evaluation Junlin Li, Shixuan Lina, Jingqi Li , Yuanrong Luo, Chengxiong Mao, Huasheng Li, Dan Wang, Weiliang Peng, Zhitao Guan Huazhong University of Science and Technology, China
9:30-9:45	(PEEE22-273) Application of Recurrent Graph Convolutional Networks to the Neural State Estimation Problem Alexander Berezin , Stephan Balduin, Thomas Oberließen, Eric Veith, Sebastian Peter and Sebastian Lehnhoff Zhejiang Institute of Communications Co., Ltd., China
9:45-10:00	(PEEE22-3114) Identification of Low Voltage Distribution Transformer-Customer Connectivity Based on Unsupervised Learning Nameer Al Khafaf , Hui Song, Brendan McGrath and Mahdi Jaliliu RMIT University, Australia
10:00-10:15	(PEEE22-124) Planning of Fast Charging Stations with Consideration of EV User, Distribution Network and Station Operation Madathodika Asna , Hussain Shareef, Achikkulath Prasanthi United Arab Emirates University, UAE

Best Presentation Award & Session Group Photo

November 20, 2022
UTC/GMT+1

Session 4 - Grid Connected Inverter and Stability Control

Chairperson: To be added

Meeting ID: 898 5036 7605

<https://us02web.zoom.us/j/89850367605>

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

8:30-8:45	(PEEE22-110E) A Control Parameters Self-Adjusting Method for photovoltaic inverter considering the variation of inductance Jiang Liu , Xiangdong Sun, Biying Ren, Weizhang Song Xi'an University of Technology, China
8:45-9:00	(PEEE22-118) Sequence-Admittance-Based Stability Analysis for Multiple Parallel Converters Chongxi Jiang, Yanxue Yu , Pengfei Hu, Yuchao Shi, Jing Wu, Guofeng Xu Zhejiang University, China
9:00-9:15	(PEEE22-245) An Improved Seven-Phase SVPWM Modulation Strategy Based on Virtual Voltage Vectors BAOLIN Jia , WEI Xie Shanghai Maritime University, China
9:15-9:30	(PEEE22-278) Verification of Power Hardware-in-the-Loop Environment for Testing Grid-Forming Inverter Hiroshi Kikusato , Dai Orihara, Jun Hashimoto, Takahiro Takamatsu, Takashi Oozeki, Takahiro Matsuura, Satoshi Miyazaki, Hiromu Hamada, Teru Miyazaki National Institute of Advanced Industrial Science and Technology, Japan
9:30-9:45	(PEEE22-262) Semi-explicit Multilinear Modelling of a PQ Open-Loop Controlled PV Inverter in A β -Frame Christoph Kaufmann , Georg Pangalos, Gerwald Lichtenberg, Oriol Gomis-Bellmunt Fraunhofer Institute for Wind Energy Systems IWES, Germany
9:45-10:00	(PEEE22-116) An Aggregated Dynamic Model of Photovoltaic Units for Large Voltage Disturbances Shanhua Hu , Yalou Li, Xing Zhang, Pengfei Tian China Electric Power Research Institute, China
10:00-10:15	(PEEE22-279) Hardware-in-the-loop Testing of a Battery Energy Storage Controller for Harbour Area Smart Grid: A Case Study for Vaasa Harbour Grid Jagdesch Kumar , Mike Mekkanen, Mazaher Karimi, Kimmo Kauhaniemi University of Vaasa, Finland

Best Presentation Award & Session Group Photo

November 20, 2022
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Session 5 - High Voltage Apparatus and Power Cable

Chairperson: To be added

Meeting ID: 822 1056 5287

<https://us02web.zoom.us/j/82210565287>

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10:30-10:45	(PEEE22-115) ANFIS Based Sound Vibration Combined Fault Diagnosis of High Voltage Circuit Breaker Zehua Chen, Kuan Zhang , Liyuan Yang, Yongchun Liang Hebei University of Science and Technology, China
10:45-11:00	(PEEE22-249) Research on Insulation State Evaluation and Detection Technology for 40.5kv Switchgear Wall Bushing Bo Niu , Weifeng Liu, Xutao Wu, Xiuguang Li, Yunlong Ma, Hong Wu Power Research Institute of State Grid Ningxia Power Co., China
11:00-11:15	(PEEE22-114) A Double-break Current Injection Vacuum DCCB: Principle and Analysis Siqi Liu , Pengfei Hu, Naixuan Zhu, Daozhuo Jiang, Yixuan Fang Zhejiang University, China
11:15-11:30	(PEEE22-266) Effect of Energizing Voltage Frequency on Partial Discharge Characteristics of Defects in Power Cable Joints Li Wang , Lei Jin, Hongjie Li Xi'an Jiaotong University, China
11:30-11:45	(PEEE22-105) A Fast Switching Strategy for DVR based on Current Control Algorithm Zhenyu Li , Xiao Guo, Ziming Wang, Ranchen Yang, Guozhu Chen Zhejiang University, China
11:45-12:00	(PEEE22-260) High Impedance Grounding Fault Location Method for Power Cables Based on Reflection Coefficient Spectrum Shurong Li , Borui Gu, Xiaoguang Zhu, Han Li, Junbo Deng, Guanjun Zhang Xi'an Jiaotong University, China
12:00-12:15	(PEEE22-3108) Data-Driven Model Predictive Control of Community Battery for Voltage Regulation in Power Grids subject to EV Charging Ali Moradi Amani , Samaneh Sadat Sajjadi, W Arachchige Somaweera, Mahdi Jalili, Xinghuo Yu RMIT University, Australia

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Session 6 - Industrial Energy System Management and Energy Consumption Prediction

Chairperson: To be added

Meeting ID: 898 5036 7605

<https://us02web.zoom.us/j/89850367605>

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

10:30-10:45	(PEEE22-113) Energy Flexible Heat Pumps in Industrial Energy Systems: A Review Bijan Seyed Sadjjadi , Jan-Niklas Gerdes, Alexander Sauer University of Stuttgart, Germany
10:45-11:00	(PEEE22-109) Short Term Load Forecasting Based On ARIMA and ANN Approaches Chafak Tarmanini , Nur Sarma, Cenk Gezegin, Okan Ozgonenel Ondokuz Mayıs University, Türkiye
11:00-11:15	(PEEE22-104) Analysis and Prediction of Industrial Energy Consumption Behavior Based on Big Data and Artificial Intelligence Qiong Wu , Hongbo Ren, Shanshan Shi, Chen Fang, Sha Wan, Qifen Li Shanghai University of Electric Power, China
11:15-11:30	(PEEE22-3124E) Evaluation of Technical and Economic Potential of Waste Heat Distribution Networks in Industrial Sites Jan-Niklas Gerdes , Michael Munder, Alexander Sauer University of Stuttgart, Germany
11:30-11:45	(PEEE22-3101) An IoT Deep Learning-Based Home Appliances Management and Classification System Zahra Solatidehkordi, Jayroop Ramesh, A. R. Al-Ali, Ahmed Osman, Mostafa Shaaban American University Sharjah, United Arab Emirates
11:45-12:00	(PEEE22-3113) Bidding Strategy for Virtual Power Plants With the Day-ahead and Balancing Markets Using Distributionally Robust Optimization Approach Chunning Song, Xiping Jing Guangxi University, China
12:00-12:15	(PEEE22-263) Economic Operation Strategy of Integrated Hydrogen Energy System Considering the Uncertainty of PV Power Output Zhenjun Lu, Qing Zhu , Weiguo Zhang, Huijie Lin RMIT University, Australia

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Session 7 - Power Electronics Technology and Wireless Power Transmission

Chairperson: To be added

Meeting ID: 822 1056 5287

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13:00-13:15	(PEEE22-122) Design of a Delay Dependent Wide Area Damping Controller Using Cyber-Physical Power System Architecture Zhenglong Sun , Jingbo Zhao, Hao Long Northeast Electric Power University, China
13:15-13:30	(PEEE22-255) Research on Bi-Directional Four-Port Converter of Solar Electric Vehicle Yongchun Liang, Shuo Lin Hebei University of Science and Technology, China
13:30-13:45	(PEEE22-271) Harvesting Energy of Flow-Induced Vibrations Using Cylindrical Piezoelectric Transducers Shehab Salem , Karel Fraňa Technical University of Liberec, Czech Republic
13:45-14:00	(PEEE22-109E) Resonant Wireless Charging Scheme Xing GUO , Yongsheng QI, Liqiang LIU, Shunyu JIA, Lijun MI Inner Mongolia Key Laboratory of Electrical and Mechanical Control, China
14:00-14:15	(PEEE22-111E) Analysis of Four-Coil Magnetic Resonance Coupling Wireless Power Transfer System based on LCC-SSS Compensation Network Zechi Chen , Xiangdong Sun, Biying Ren, Zhixuan Wang, Jiang Liu Xi'an University of Technology, China
14:15-14:30	(PEEE22-258) Optimal Design of FBG Flexible Sensor for High-Precision Monitoring of Three-Dimensional Deformation of Power Transmission Line Tower Foundation Changbin Tian , Xin Ma, Xiangxue Ma, Bo Peng Shandong Jianzhu University, China
14:30-14:45	(PEEE22-139E) A Compensation Pixel Circuit with High Bits Using PWM Method for AMOLED Hongyuan Xu, Bin Liu , Feng Zheng, Juncheng Xiao, Shengdong Zhang, Lei Lu Peking University Shenzhen Graduate School, China

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Session 8 - Motor Drive and Control

Chairperson: To be added

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13:00-13:15	(PEEE22-120) Fuzzy-based Coordinated Control and Parameter Correction Strategy for Speed Controller of PMSG Wind Turbine in Frequency Response Bo Peng , Xin Ma, Xiangxue Ma, Changbin Tian Shandong Jianzhu University, China
13:15-13:30	(PEEE22-257) Three phase PMSM Vector Control using Decoupled Flux and Speed Controller Haneen Ghanayem , Mohammad Alathamneh, R.M.Nelms Auburn University, USA
13:30-13:45	(PEEE22-268) The Influence of Dynamic Loads on the Vibration Level of Rotating Units of Traction Drives Genadijs Kobenkins , Marks Marinbahs, Anatolijs Bizans, Nikita Rilevs, Olegs Sliskis Riga Technical University, Latvia
13:45-14:00	(PEEE22-296) An Asymmetric-Square-Wave Voltage Injection Method for Online Inductance Identification of PMSM Under Sensorless Control Yang Ge , Weizhang Song Xi'an University of Technology, China
14:00-14:15	(PEEE22-138) Battery Charging Control Method of Integrated Starter and Generator (ISG) for Hybrid Brake Jung-Hyo Lee , Hyun-Sik Kang Kunsan National University, South Korea
14:15-14:30	(PEEE22-270) Construction of PHEV Driving Support System Using GIS for Optimal Operation Shuntaro Nakayama , Shinpei Oie, Atsushi Shiota, Yasunori Mitani, Masayuki Watanabe Kyushu institute of technology, Japan
14:30-14:45	(PEEE22-276) Data-Driven Topology Detector for Self-Healing Strategies in Active Distribution Networks J. Marin-Quintero, C. Orozco-Henao , J. Mora-Florez Universidad del Norte, Colombia
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Session 9 - Fuel Cell Technology, Renewable Energy and Fuel Combustion

Chairperson: To be added

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15:00-15:15	(PEEE22-3123) Day-ahead Energy Management for Hybrid Electric Vessel with Different PEM Fuel Cell Modular Configurations Peilin Xie , Hossein Asgharian, Juan C. Vasquez, Josep Guerrero, Samuel Simon Araya, Vincenzo Liso Aalborg University, Denmark
15:15-15:30	(PEEE22-242) Development of Low-Cost Block-Shape Anodes for Practical Soil Microbial Fuel Cells Soichiro Hirose , Dang Trang Nguyen, Kozo Taguchi Ritsumeikan University, Japan
15:30-15:45	(PEEE22-274) Heat Energy Accumulation Construction for Bioethanol Burner Jiří Ryšavý , Jiří Horák, Kamil Krpec, František Hopan, Lenka Kuboňová, Oleksandr Molchanov VSB – Technical University of Ostrava, Czech republic
15:45-16:00	(PEEE22-3107) The Performance and Emission of a Generator-Diesel Engine Fueled with Palm Oil Methyl Ester Combined with Carbureting Biobutanol Ekkachai Sutherasak , Worachest Pirompugd, Sathaporn Chuepeng Burapha University, Thailand
16:00-16:15	(PEEE22-286) Use of Loofah Electrodes Coated with Rice Husk Smoked Charcoal and Japanese Ink in a Microbial Fuel Cell for Muddy Water Treatment Soichiro Hirose, Kentaro Inukai, Dang Trang Nguyen, Kozo Taguchi Ritsumeikan University, Japan
16:15-16:30	(PEEE22-242E) Modeling, Polynomial Regression, and Artificial Bee Colony Optimization of SI Engine Performance Improvement Powered by Acetone Gasoline Fuel Blends Hussein Alahmer , Ali Alahmer, Razan Alkhazaleh, Malik I. Al-Amayreh Al-Balqa Applied University, Jordan
16:30-16:45	(PEEE22-254E) Effect of Blade Tips Ice on Vibration Performance of Wind Turbines Yuanjun Dai, Fengze Xie , Baohua Li, Cong Wang, Kunju Shi Shanghai Dianji University, China
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Session 10 - Building Energy Management, Energy-Saving Technology and Thermal Energy Engineering

Chairperson: To be added

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| 15:00-15:15 | (PEEE22-292) Demand Response with Active Phase Change Material based Thermal Energy Storage in Buildings
Aneesh Chandra Nunna , Yi Zong, Laurent Georges, Shi You
Technical University of Denmark, Denmark |
| 15:15-15:30 | (PEEE22-101) Integration of CCHP Microgrids in NZEB with Critical Loads under high PQR Requirements, a Position Paper
Rafael Savariego, Antonio Moreno-Munoz , M ^a Isabel Abascal-Castaneda, M ^a Isabel González-Cuenca, Carlos Santos Silva, Javier Tobajas-Blanco, Fco. Javier López-Alcolea, Emilio J. Molina-Martínez, Romain Mannini, Stéphane Grieu, Ana Estanqueiro and David Loureiro
Universidad de Cordoba, Spain |
| 15:30-15:45 | (PEEE22-250) A Facile Energy-Efficient Approach to Prepare Super Oil-Sorbent Thin Films with Sponge-Like Porous Structure
Junaid Saleem, Moghal Zubair Khalid Baig , Adriaan S. Luyt, Rana Abdul Shakoor, Ahsan Hafeez, Insharah Ahsan, Snigdhendubala Prahdan, Said Mansour, Gordon McKay
Qatar University, Qatar |
| 15:45-16:00 | (PEEE22-111) Thermal Evaluation of Flow Channels with Perforated-Baffles
Smith Eiamsa-ard , Arnut Phila, Khwanchit Wongcharee, Monsak Pimsarn, Naoki Maruyama and Masafumi Hirota
King Mongkut's Institute of Technology Ladkrabang, Thailand |
| 16:00-16:15 | (PEEE22-259) Performance Analysis of Thermoelectric Power-Generation System with Natural Convection Cooling
Viorel Ionescu
Ovidius University of Constanta, Romania |
| 16:15-16:30 | (PEEE22-299) Free-standing Polypropylene Porous Thin Films Using Energy Efficient Coating Technique
Junaid Saleem, Moghal Zubair Khalid Baig , Adriaan S. Luyt, Rana Abdul Shakoor, Alireza Bazargan, Gordon McKay
Qatar University, Qatar |
| 16:30-16:45 | (PEEE22-288) Enhancement of Photocatalytic Activity by Z-Scheme Heterojunction of Catio ₃ Nanocuboids and P25
Genki Saijo , Dang Trang Nguyen, Kozo Taguchi
Ritsumeikan University, Japan |

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Thank You

