

11th IEEE Innovation Smart Grid Technologies - Asia (IEEE ISGT-Asia 2022)

November 2 - 5
Singapore



“Energy Resilience & Sustainability for Smart Nations”

Call for Papers

The 11th International Conference on Innovative Smart Grid Technologies (**IEEE ISGT-Asia 2022**), sponsored by the IEEE Power & Energy Society (PES), will be held from 2nd-5th November 2022 in Marina Bay Sands, Singapore, the world’s gateway to Southeast Asia. The IEEE PES ISGT-Asia 2022 conference will be a melting pot with participants from academia, industry, R&D, electric power utilities, energy service providers, and the government to discuss, share and exchange ideas related to state-of-the-art innovations in smart grid technologies for the future grid. The theme of this year’s conference is **“Energy Resilience & Sustainability for Smart Nations”** and the event includes industrial panel sessions, keynote speeches, tutorials, papers and poster presentations.

With 6 technical streams spread over 3 days, there will be plenty of opportunities for everyone to showcase and share their work with professionals in the smart grid sector in this widely popular conference. The conference proceedings will be published in IEEE Xplore and indexed in Ei Compendex database.

Conference Topics:

The conference organizing committee invites contributions in all areas related to smart grid technologies, including (but not limited to) the following:

TRK1. System Planning and Operation with High-Level Renewable Energy Resources

Smart grid system planning, operation, reliability, T&D interface issues and solutions, system modeling, real-time simulation, co-simulation techniques, preventive maintenance, active distribution network, innovative state estimation tools, frequency response, ancillary services, and large-scale operation with distributed generation.

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TRK2. Information and Communication Technologies (ICT) and Cyber-Physical Security

Role of ICT in smart grids, smart metering, data acquisition and monitoring, sensor networks, information and communication protocols and standards, 5G techniques and applications to smart grid, big data analytics, cloud computing, data management, substation automation, and cyber-physical security.

TRK3. Renewable Generation Integration and Low-Inertia Grid

Power electronic circuit topologies and control strategies, integration of inverter-based resources (IBRs), grid-forming and grid-following controls, stability and power quality issues, grid-connected energy storage systems and their control, electric vehicle charging technologies and its impact in grid operation, overlay grids, electric drives, electric vehicle technologies, solid-state transformers.

TRK4. Artificial Intelligence (AI) for Grid Resilience Enhancement

Models and tools to simulate and quantify climate change impacts on grid reliability and resiliency, resiliency metrics and hardening techniques, use of renewable energy for grid resilience, proactive control, fast restoration, AI/machine learning for grid resilience, machine learning for transient stability analysis, smart grid protection solutions.

TRK5. Grid-Edge Systems and Technologies

Microgrid, Islanding, energy & demand-side management system, and consumer behavior, grid-interactive efficient buildings, energy efficiency, grid-edge intelligence, district heating and cooling, smart cities solutions, restoration and mitigation of extreme events.

TRK6. Electricity Market, Innovative Business Mechanism, Policy/Regulatory Aspects

Regulatory aspects, policies, standards, electricity market mechanics, design and business models, economic impacts on energy market price, and smart grid awareness.

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Keynote Speakers:



Saifur Rahman

Life Fellow of IEEE
IEEE President-Elec 2022
Joseph Loring Professor, Virginia
Tech, USA



Jessica Bian

IEEE Power & Energy Society
(PES) President
Vice-President, Grid-X Partners,
USA



Shay Bahramirad

IEEE Power & Energy Society
(PES) President-Elect 2022
Senior Vice President, LUMA
Energy, USA



Claudio Cañizares

Fellow of IEEE, Royal Society of
Canada, Canada Academy of
Engineering, Professor,
UWaterloo, Canada,
and Hydro One Endowed Chair



Shu Yuen (Ron) Hui

Fellow of the IEEE, Royal
Academy of Engineering., ATSE,
US National Academy of
Inventors MediaTek Endowed
Professor, NTU



Amit K. Gupta

Fellow of IEEE, IET, and IES,
Head of Rolls-Royce Electrical
at Rolls-Royce Singapore Pte
Ltd. Director of the Electrical
Programme at Rolls-
Royce@NTU Corporate lab



Nando Ochoa

Professor of Smart Grids and
Power System, University of
Melbourne, Australia



Thomas Reindl

Deputy CEO of the Solar
Energy Research Institute of
Singapore and Principal
Research Fellow, NUS

For more detailed information visit [Keynote Speakers' Biography and Synopsis](#)

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Special Sessions:

- SS1. Artificial Intelligence enabled smart control for advanced energy management systems in Modern Microgrid.**
Dr. Pengfeng Lin, Assist. Prof. Jianfang Xiao, and Mr. Romain Migné
- SS2. Cloud-Based Control of Distributed Energy Resources in Energy Internet.**
Dr. Yu Wang, Assist. Prof. Mazher Syed, Assoc. Prof. Yan Xu, and Prof. Graeme Burt.
- SS3. Advances in Virtual Power Plant: Modelling, Optimization, and Implementation.**
Dr. Cuo Zhang, Prof. Zhao Yang Dong, and Assoc. Prof. Junjie Hu:
- SS4. Coordinated Operation of Active Distribution Networks.**
Assist. Prof. Bing Yan and Dr. Wei Lin
- SS5. Toward Digitalized Microgrids with Blockchain, Data Driven Techniques, and Cyber-Resilience Enhancement Methods.**
Mr. Jiahong Dai, Dr. Pengfeng Lin, Dr. Chao Ren, Mr. Jiawei Yang, and Dr. Pengfei Tu
- SS6. Topical Developments of Power Electronics Converter with their Futuristic Control Approach in System Resilience Enhancement.**
Assist. Prof. Nitin Gupta, Assist. Prof. Dhivya Sampath K., Dr. Nirav Patel, Assist. Prof. Ajay Kumar, and Assist. Prof. Manoj Kumawat
- SS7. Internet of Energy Innovations with Blockchain Enabled Decentralized Infrastructure.**
Assist. Prof. Jun Zhao, Dr. S. M. Suhail Hussain, Dr. Mansoor Ali, and Dr. Muhammad Musthafa Roomi
- SS8. Energy Transition Strategies, and Environment and Climatic Benefits of Pushing Forward NetZero Target.**
Dr. Xuran Ivan Li, Prof. Hai Guo, and Assist. Prof. Youwei Jia

To find out more detailed technical outlines and topic of interests for respective sessions [click here](#).

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Tutorial Sessions:

TS1. Machine Learning and Optimization for Smart Grid.

Professor Zhang Yan and Dr. Yushua Li,
Department of Informatics, Digital Infrastructure and Security,
University of Oslo, Norway.

Learning Outcomes: Introduce the new features, requirements and challenges of the future generation smart grid, using multiple state-of-the-art machine learning methods to address challenges in load scheduling, load monitoring and frequency control, present energy P2P trading and sharing based on distributed optimization and game theory, and explore the problem of placement and routing optimization for wind farm by using UAV.

TS2. How to Develop Cloud Computing Frameworks for using Real-Time Data Streams in Large-Scaled Distribution System Simulations.

Dr. Sayonsom Chanda,
Senior Simulations Engineer @ National Renewable Energy Laboratory, Denver, Colorado, USA,
Tech Lead @ Plexflo, Boulder, Colorado, USA.

Learning Outcomes: Become familiar with cloud architecture/frameworks and open-source libraries that can be used to bring together machine learning and electric power grid simulations into cloud platforms, exercise intelligence extraction from real-time AMI datastreams, and learn from three case studies of cloud-based power grid simulations – for scenarios like DER hosting capacity and EV infrastructure planning.

For more detailed information visit, [Tutorial Speakers' Biography and Synopsis](#).

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Organizing Committee:

Advisory Chair	Professor Dipti Srinivasan <i>National University of Singapore</i>
General Co-Chairs	Assoc. Prof. Yan Xu <i>Nanyang Technological University Singapore</i> Assoc. Prof. Naayagi Ramasamy <i>Newcastle University in Singapore</i>
Program Co-Chairs	Assist. Prof. Jimmy C. H. Peng <i>National University of Singapore</i> Assist. Prof. Junbo Zhao <i>University of Connecticut, USA</i>
Tutorial/Special Sessions/Keynotes Chair	Professor Balarko Chaudhuri <i>Imperial College London, UK</i>
Financial Chair	Assist. Prof. Anurag Sharma <i>Newcastle University in Singapore</i>
Publication Chair	Dr. Daisuke Mashima <i>Advanced Digital Sciences Center (Illinois Singapore Pte. Ltd)</i>
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Registration Chair	Dr. Anupam Trivedi <i>National University of Singapore</i>
Registration Co-Chair/ Web Chair	Dr. Muhammad Ramadan Saifuddin <i>Singapore University of Technology and Design</i>

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Important Dates:

Proposal Tutorial/Special Session submission deadline: 31 March 2022 [**CLOSED**]

Proposal Tutorial/Special Session decision notification: 30 April 2022 [**AUTHORS NOTIFIED**]

Regular Paper submission deadline: ~~30 April 2022~~ **Extended 31 May 2022**

Special Session Paper submission deadline: 15 June 2022

Regular & Special Paper decision notification: 15 July 2022

Camera-Ready submission deadline: 5 September 2022

Early Bird registration: 5 September 2022

Conferences Collaboration:

The organizers of the **IEEE SmartGridComm** (25-28 Oct 2022) and **IEEE ISGT-Asia** (2-5 Nov 2022) are glad to share that the two conferences will be held back-to-back in Singapore. The organizations would like to encourage participants to consider planning their stay in Singapore for both weeks and attend both conferences. This will serve as a great opportunity for fostering collaboration among the members of IEEE ComSoc, IEEE PES, and other sister societies. More information visit [IEEE SmartGridComm 2022](https://www.ieee.org/conferences-events/smart-grid-comm-2022).



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