



# IEEE INTERNATIONAL CONFERENCE ON ENERGY TECHNOLOGIES FOR FUTURE GRIDS (ETFG 2023)

3-6 December 2023, Wollongong, Australia

[attend.ieee.org/etfg-2023](http://attend.ieee.org/etfg-2023)

The IEEE International conference on Energy Technologies for Future Grids (IEEE ETFG 2023) is the first biennial conference organized by the Australian Research Council (ARC) Industrial Transformation Training Centre in Energy Technologies for Future Grids in Collaboration with Universities and Industries in Australia. The conference is 100% sponsored by IEEE Industry Applications Society (IAS). The theme of the conference is "Challenges, Solutions, and Opportunities for Industrial Transformation". The Conference will take place at Wollongong, New South Wales, Australia on 3-6 December 2023.

Wollongong is a coastal city in Australia, south of Sydney along the Grand Pacific Drive with rich history and beautiful natural attractions. It has beautiful beaches with a dramatic backdrop of green and sandstone of the Illawarra Escarpment.

## CONFERENCE TRACKS

### Future Grid Energy Technologies

- Renewable energy (solar, wind, biomass, wave, fuel-cells)
- Distributed generation
- Energy storage systems (batteries, pump hydro, superconducting, flywheels, hydrogen)
- Virtual power plants and grid integration of small-scale and large-scale renewable resources
- Hydrogen storage to support power grids
- Renewable energy to power electrolyzers
- Black Start Capability of Renewable Power Plants

### Power and Energy Enabling Technologies

- Power electronics and grid-forming Inverters
- Medium voltage multi-level converters
- Smart solid-state transformers (Magnetic link and bus)
- Smart-grids and micro-grids and Smart meters
- Inductive and conductive power charging
- Power converters for electrolyzers and fuel-cells
- Data driven control for smart inverters
- Hybrid inverters and their controls for grid integration
- Component level diagnostic of reliability improvement

### Future Grids with Electric Vehicles

- Plug-in Electric vehicles (bicycle, car, bus, train)
- Electric vehicle charging stations
- Impact of electric vehicles to power grids
- Grid infrastructure for hosting electric vehicle fleets
- Hybrid electric vehicles
- Vehicle to grid and vehicle to home
- Hydrogen-powered vehicles
- Utilisation of hydrogen in transportation
- Electric motors for light and heavy electric vehicles
- Electric buses, electric trains, electric aircrafts, and electric ships

### Power and Energy Transformation and Utilisation

- Smart Grids and micro-grids
- Wide area interconnected clean energy highway
- Power grid infrastructure planning
- Supply and demand management and Industrial drives
- Load modelling
- Energy savings and energy efficiency
- Building energy management system
- Distributed control in power systems
- Volt/VAr optimisation, control and coordination

### Power Grid Planning and Operation

- Distribution system operation and control
- Application of AI to power systems
- Advanced optimization techniques, and energy policies
- Complex, resilient and intelligent systems
- Electricity markets and regulatory issues
- Power system reliability and flexibility
- Planning for future power systems
- Advanced protection systems
- Climate change adaptability in energy infrastructure

### IoT and Communication for Energy Technologies

- Smart sensing for power technologies
- Internet of Things (IoT) for energy technologies
- Wireless power transfer and Smart grid communications
- IoT for critical energy infrastructure
- IoT for renewable energy and energy storage
- Data communications for virtual power plants
- Wireless communication for electric vehicles
- Application of networks, sensor devices and data technologies
- Optical fibre sensors for power applications

### Honorary Chairs

Wei-Jen Lee, President, IEEE IAS  
Andy Knight, Vice President IAS

### General Chair

Sr. Prof. Kashem Muttaqi, UOW, AU

### Technical Chair

Prof. Danny Sutanto, UOW, AU

### Local Organizing Chair

Ms. Marjo Niemela, UOW, AU

### Publication Chair

Dr Rabiul Islam, UOW, AU

### Program Chair

Prof. Sukumar Kamalasan, UNC, US

### Finance Chair

Dr Sasha Nikolic, UOW, AU

### Hospitality Chair

A/Prof. Ashish Agalgaonkar, UOW, AU

### Public Relation Chair

A/Prof. Raad Raad, UOW, AU

### Publicity Chairs

Prof. Fei Gao, UTBM, FR  
Dr Biju K, CEM, IND

### Industry Chairs

Dr Nishad Mendis, Bureau Veritas, AU  
Dr Hadi Lomei, Essential Energy, AU

### Paper Review Chairs

Prof. Saleh Saleh, UNB, CA  
Prof. Suryanarayana Doolla, IIT, IN

### Tutorial Chair

Prof. Gerard Ledwich, QUT, AU

### Special Sessions Chairs

Prof. Kazuhiro Nogita, UQ, AU  
Prof. Anurag Srivastava, WVU, US

### Sponsorship Chairs

Prof. Danny Sutanto, UOW, AU  
Prof. Arindam Ghosh, CU, AU

### Women in Engineering Chair

A/Prof Rukmi Dutta, UNSW, AU

### Awards Chair

Prof. Akshay Rathore, SIT, SG

### Exhibition Chair

Prof. Michael Negnevitsky, UTAS, AU

### Student Activity Chair

Dr. Samson Yu, Deakin University, AU

## ABOUT US



The conference is financially sponsored by IEEE Industry Applications society (IAS), USA and will be held on 3-6 December 2023 at Wollongong, Australia. NSW Joint Chapter IAS/IES/PELS, and IEEE IAS and PES Student Chapters at Wollongong, Australia are supporting the event. The Australian Research Council (ARC) Industrial Transformation Training Centre on Energy Technologies for Future Grids (ARC Future Grids ITTC) will manage and run the Conference.



## AUTHOR INFORMATION

Prospective authors are invited to initially submit their full manuscript (6 pages max) according to guidelines available on the conference website. The presented papers will be published on the IEEE Xplore subject to the IEEE standards and quality check, and will be eligible for further review for publication in IEEE Transactions on Industry Applications and IAS Magazine. For further information, visit [attend.ieee.org/etfg-2023](http://attend.ieee.org/etfg-2023)

## IMPORTANT DATES

Paper Submission Opening  
1st October 2022

Paper Submission Closing  
1st April 2023

Notification of Acceptance  
1st July 2023

Early Bird Registration  
1st October 2023

## CONTACT US

### Senior Prof. Kashem Muttaqi

Chair of IEEE IAS IACC  
Deputy EIC of IEEE TIA  
Director of ARC Future Grids  
Training Centre  
University of Wollongong, Australia  
E-mail: [kashem@uow.edu.au](mailto:kashem@uow.edu.au)



AUSTRALIAN POWER  
and ENERGY  
RESEARCH INSTITUTE

