Special Section on:

Applications of Artificial Intelligence Techniques in Microgrid

Supported by: IEEE IES Technical Committee (TC) on Smart Grids

Microgrid concept is proposed as an advanced approach for integrating of multiple distributed energy resources (DERs) into power distribution systems. A key feature of a microgrid is its ability, during a utility grid disturbance, to realize seamless transitions between the grid-connected mode and the autonomous mode with little or no disruption to the facilities within the microgrid. Microgrids have been developed and deployed extensively in the past decade due to their beneficial supplement to the main grid. However, researchers and developers are still mounting a great effort to improve microgrid performance to better the requirement of the modern power grids. Recently, artificial intelligence (AI) techniques have received wide attention in smart grid and microgrid studies. This special issue is proposed to promote the applications of AI techniques in microgrid. The aim of the special issue is to provide a timely opportunity for researchers, practicing engineers, and other stakeholders to share their latest discoveries in the areas of microgrid control, protection, energy management, communication, cyber-security, energy trading, etc. in the context of AI solutions. Submissions need to demonstrate strong original contributions to these areas.

We encourage all researchers working in this area to submit papers to this Special Section. Topics of interest include, but are not limited to:

- ✓ Neural network and reinforcement learning-based microgrid energy management algorithms
- ✓ Real-time implementation of machine learning-based converter control in microgrid
- ✓ Deep learning-based forecasting for integration of electric vehicles into microgrid
- ✓ Microgrid reconfiguration and topology identification
- ✓ Virtual inertia control in microgrid
- ✓ Neural network and machine learning-based cyber-attack detection in microgrid

- ✓ Neural network-based microgrid protection methods
- ✓ Machine learning for microgrid reliability assessment
- ✓ Reinforcement learning approach for low-latency communications microgrid
- ✓ Data-driven approach for microgrid load and generation forecasting
- ✓ Data-driven approach for microgrid state estimation
- ✓ Microgrid transactive energy
- ✓ Deep learning-based microgrid edge computing.

Manuscript Preparation and Submission

Check carefully the style of the journal described in the guidelines "Information for Authors" in the IEEE- IES website: http://www.ieee-ies.org/pubs/jestie. Please submit your manuscript in electronic form through: https://mc.manuscriptcentral.com/jestie-ieee/.

On the submitting page, in pop-up menu of manuscript type, select: "**SS on Applications of Artificial Intelligence Techniques in Microgrid**", then upload all your manuscript files following the instructions.

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Timetable		
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