Advances in Fuzzy Systems

Special Issue on
Intelligent Fuzzy Systems in Integration of Energy Technologies and Micro-Grids for Energy Management in Buildings

CALL FOR PAPERS

Buildings consume a large portion of the world's energy and they are a source of greenhouse gas emissions. The nature of buildings is changing from static and passive structures to dynamic and active environments to work and live in. The concept of sustainable and smart buildings is emerging as an important area for the smart microgrid initiative. In addition, effective energy management is becoming more feasible using the innovative smart microgrid technologies and smart energy systems. This special issue is focused on energy management in a smart microgrid and building environment.

The integration of new smart energy systems in a microgrid has changed the landscape of energy systems as whole. These changes have resulted in an environment of high complexity, uncertainty, and imprecision. In this way, the intelligent fuzzy logic systems (IFLS) as a synergy between fuzzy or neurofuzzy systems and optimization techniques can lead on smart energy management systems for real-time applications. The IFLS can play a remarkable and vital role in handling a significant part of this high uncertainty and nonlinearity by providing new smart solutions for a more efficient and reliable operation of energy management systems.

Potential topics include but are not limited to the following:

- The smart technologies to implement effective energy management in buildings
- Comfort management in buildings
- Fuzzy hybrid models in energy systems
- The research trends concerning the operation of buildings in a smart microgrids' framework
- The energy conservation and smart energy systems combination to reduce the energy consumption of buildings
- Efficient and smart techniques to predict the energy consumption of buildings and electricity load forecasting
- Modeling uncertainty and imprecision of electric microgrid, faults, error metering, and electric consumers' behavior

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