

# Multi-agent solutions for mordent smart grid systems

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## Abstract:

Nowadays, the electricity industry worldwide is facing serious problems because of the increasing demand from urbanization, scarcity of natural resources and global warming arising from electricity production. The potential solutions to these problems are to use distributed energy generation near the point of consumption by maximizing the use of cleaner renewable sources such as solar, wind, tidal and geothermal energy. The development of new infrastructures for the intelligent modeling and management of modern distributed power grid systems with the renewable energy components have become a challenging issue in both research and applications in smart grid systems.

This talk will introduce multi-agent solutions in smart grid research from several projects, including mechanisms and strategies of power restoration, distribution management, and the network modeling through approaches of agent team formation, reinforcement learning, and agent self-organization and adaptation. This seminar will also briefly introduce a new research project, “Multi-Agent Solutions for the Development of Self-organized and Self-Adapted Distributed Energy Generation Systems”, supported by an ARC Discovery Grant, 2014-2016.

## Brief CV of Dr Minjie Zhang

Dr Minjie Zhang received her Bachelor of Computer Science degree from Fudan University, China in 1982 and her Ph.D. degree from the University of New England, Australia in 1996. From 1995, she had been employed as an associate lecturer in the University of New England; a lecturer in Edith Cowan University; a lecturer in Newcastle University; and a senior lecturer in the University of Wollongong. Currently, Dr Minjie Zhang is an associate professor and the Director of Intelligent Systems Research Centre at the University of Wollongong, Australia. She is a senior member of the IEEE and IEEE Computer Society. Dr Zhang has edited 9 scholarly books with Springer and 5 special issues with reputable journals. She is the author, or co-author, of over 200 research papers. Dr Zhang is the chief investigator of two Australia Research Council (ARC) Discovery Grants, one ARC Linkage Grant and 1 ARC International Linkage Award. She has been the chair/co-chair of over 20 International conferences/workshops. Her research interests include multi-agent systems and their applications in complex domains, distributed artificial intelligence, smart modeling and simulation in complex systems, data mining and knowledge discovery, service-oriented systems, agent-based grid/cloud computing, and smart grid systems.

