

Armin Ghasem Azar



Biography: Armin Ghasem Azar received his bachelor's degree (2011) in computer science from University of Tabriz in Iran, based on a research on security issues in the ad-hoc networks. Then, he obtained his master's degree (2014) in computer science from the Institute for Advanced Studies in Basic Sciences (IASBS) in Iran focusing on intelligent systems. He conducted a research on "Resource Allocation Problem in the Market-based Smart Power Grids". Meanwhile, he obtained a dedicated professional industry expertise as a systems/network technician across various ICT projects working as a part-time "technical manager" and "network operation manager" in various multi-culture companies and organizations. Currently, he is pursuing his PhD studies in the Department of Engineering at Aarhus University in Denmark. He is a member of an EU FP7 research project named SEMIAH. His main responsibility is developing a robust and scalable load scheduling framework, where the automated demand response system can manage and schedule a large number of load schedulable appliances in real-time. His research areas of interest include smart power grids, demand response optimization, multiagent systems, multi-objective optimization, and evolutionary computation. You can follow his publications in:

<https://www.linkedin.com/in/arminghasemazar>

<https://scholar.google.dk/citations?user=tvGtOHsAAAAJ&hl=en&oi=ao>

https://www.researchgate.net/profile/Armin_Ghasem_Azar

<http://pure.au.dk/portal/en/aga@eng.au.dk>

Session Title: Agent-based Charging Scheduling of Electric Vehicles

Abstract: The electric vehicle technology intends to mitigate negative impacts of the energy challenge on the current transportation infrastructure. However, integrating a large number of such vehicles imposes a significant additional load to the grid and may overload it. This paper proposes a hierarchical eventdriven

multi-agent system framework for coordinated charging scheduling of electric vehicles. Household agents negotiate temporal travel patterns with substation agents to decide when electric vehicles should charge their batteries. A scalable load scheduling algorithm is proposed to schedule charging process of electric vehicles in real-time regardless of using any forecasting method. It aims to permit as many electric vehicles as possible to operate while keeping their aggregated charging energy consumption below continuous electricity-price-dependent thresholds over time. Simulations confirm that the framework benefits from charging flexibilities, reduces the charging cost, and shaves the grid's peak.