Hamidreza Sadeghian

sadeghianh@vcu.edu || 804-655-7530

EDUCATION

Virginia Commonwealth University, Richmond, VA, May 2021

Ph.D. Candidate in Electrical Engineering

Research area: Renewable Distributed Generation, Demand Side Management, Smart Grid

Advisor: Dr. Zhifang Wang

GPA: 4/4

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran, Oct. 2014

M.Sc. in Electrical Engineering, Power (Energy management)

Thesis: Profit Based Unit Commitment of Combined Heat and Power Systems

Advisor: Dr. Morteza M. Ardehali

Co-Advisor: Dr. S. Hossein Hosseinian

GPA: 3.91/4

University of Tabriz, Tabriz, Iran Sep 2008 - Sep 2012

B.Sc. in Electrical Engineering

Thesis: Modeling and Simulation of Bi-directional Convertor for Hybrid Electric Vehicles

Advisor: Dr. Ebrahim Babaei

GPA: 3.24/4

RESEARCH INTERESTS

Distributed Renewable Energy Generation
Demand side management
Energy management and control of micro-grids and smart grids
Integration of renewable energy resources to the grids
Application of intelligent methods in power systems

SELECTED GRADUATE COURSES

Power System Operation and Control
Energy Planning
Economy and Energy Management
Power System Analysis
Micro-grids and Smart grids
Renewable Energy Resources
Sustainable & Efficient Power System
Energy Storage

PUBLICATIONS

- **H.R. Sadeghian**, M.M. Ardehali "A Novel Approach for Optimal Economic Dispatch Scheduling of Integrated Combined Heat and Power Systems for Maximum Economic Profit and Minimum Environmental Emissions Based on Benders Decomposition" Elsevier. *Energy 2016 May 1;102:10-23.*
- **H. Sadeghian,** Z. Wang "Combined Heat and Power Unit Commitment with Smart Parking Lots of Plug-in Electric Vehicles" , 2017 North American Power Symposium (NAPS), Sep 17-19, 2017. (Submitted).
- S. H. Elyas, **H. Sadeghian,** H. Alwan, Z. Wang "Optimized Household Demand Management with Local Distributed Solar Generation" , 2017 North American Power Symposium (NAPS), Sep 17-19, 2017. (Submitted).
- **H. Sadeghian,** M.H. Athari, and Z. Wang, "Optimized Solar Photovoltaic Generation in a Real Local Distribution Network," *IEEE Innovative Smart Grid Technologies, ISGT2017*, Apr. 2017 Arlington, VA, (Accepted, to appear)
- **H.R. Sadeghian**, M.M. Ardehali, M.E Nazari "Combined heat and Power Profit Based Unit Commitment Considering Reserve Market Using Imperialistic Competitive Algorithm" accepted in ICEE, Mar 2014
- **H.R. Sadeghian**, M.M. Ardehali, M.E Nazari "Combined heat and Power Profit Based Unit Commitment Considering Reserve Market Using Imperialistic Competitive Algorithm" accepted in ICEE, Mar 2014.
- **H.R. Sadeghian,** G.B. Gharehpetian, and H. Athari "Improved Multi-agent System for Intelligent Energy Management of Micro-grids in Presence of PHEVs," accepted ICEE2015, Feb 2015.
- H. Athari, G.B. Gharehpetian, and **H.R. Sadeghian**, "Optimized Fuzzy Controller for Charging Algorithms of Plug-in Hybrid Electric Vehicles" accepted in ICEE2015, Feb 2015.

HONORS & AWARDS

- **Ranked 4th** among all Power Engineering students, Amirkabir University of Technology **Fall 2014**
- **Ranked 01^{t-h}** among all Power Engineering students, University of Tabriz. **Spring 2012**
- **Ranked 125th** among more than 230,000 participants in Nationwide University Entrance Exam (MSc). **Fall 2012**
- **Ranked top 0.3%** of Nationwide University Entrance Exam (BSc) (nearly 500,000 participants). **Fall 2008**

SELECTED ACADEMIC PROJECTS

- Renewable energy distributed generation impacts on distribution network, fall 2016
- Demand side management with considering renewable energies, spring 2017
- Analysis of power system operation and control methods in a case study network from "Power System Analyses and Design" by Glover et al. using PASHA software, fall 2013
- Short term and long-term energy consumption forecasting for different sections in Iran using Artificial Neural Networks, as final project for Energy Planning, fall 2012

- Design and optimal sizing of on-grid CPVT system using ICA algorithm by developing a MATLAB Graphical User Interface (GUI), spring 2012
- Energy auditing and performance evaluation of a pump factory as the senior project for Process and Evaluation of Energy Consumption, fall 2012
- Design of a 230/132 kV switchyard as the senior project for Switchyard course, summer 2012

WORK EXPERIENCES

- Operating engineer at Shahid Zerafati's 10 MW power plant, Oct. 2015 – May 2016
- Design and implementation of a CPVT system for East Azerbaijan Electric Power Distribution Company, Iran, Jun. 2015 – Sept. 2015
- Consulting engineer at East Azerbaijan Electric Power Distribution Company, Iran, Jun 2015 – Sept. 2015
- Lecturer at Islamic Azad University (IAU) - Bonab Branch, Jan 2015 – Aug. 2015
- Academic projects consultant for university , Apr. 2013 – May 2016
- Internship at East Azerbaijan Electric Power Distribution Company, Iran, Responsible for designing of distribution networks for rural areas, Jul. 2012 – Sep. 2012

SKILLS

Computer

Programming Languages: MATLAB, Python, C++, Visual Basic

Engineering Software: DIgSILENT, PSS/E, PsCAd, GAMS, MATLAB Simulink, MATLAB Control and Optimization Toolboxes, PASHA

Other: Expert in Windows and MS Office, familiar with MacOSx and Linux