

Reza Arababadi, PhD

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EDUCATION

- **PhD:** Energy Management, Arizona State University, Tempe, AZ 2016

Dissertation Title: Operational peak load shifting strategies for residential buildings

My doctoral research leverages simulation and experimental work to assess the impacts of various precooling strategies on the peak load demand of residential buildings. In addition, my PhD research uses simulation modeling to examine the effects of various energy efficiency measures (EEMs) on the performance of precooling in residential buildings. Lastly, my doctoral research studies the possibility of using inverse modeling to develop residential precooling strategies.

- **M.Sc.:** Energy and Environmental Engineering, Linköping University, Linköping, Sweden 2012

Thesis Title: Energy Use in the EU building stock, Case study: UK

My MSc thesis leveraged building stock modeling to simulate residential and commercial building stock in the United Kingdom. The model was validated and used to assess the impact of various energy efficiency measures on net energy consumption in the UK.

- **B. Sc.:** Electrical Power Engineering, Shahid Bahonar University of Kerman, Iran 2010

Thesis Title: Automation of Power Distribution System

The thesis documents the impacts of installing automatic power switchgears in an electrical distribution system, based on Matlab Simulink simulations.

RESEARCH INTERESTS

- Building Energy Efficiency
- Building Energy Modeling
- Peak Load Shifting in Buildings
- Building Operation Costs
- Energy Policy
- Renewable Energies
- Data Analysis

RESEARCH EXPERIENCE

- **Assistant Professor** Since September 2018
Institute of Energy, Graduate University of Advanced technology, Kerman, Iran

- **Visiting Scholar** September 2017-September 2018
Faculty of Engineering Engineering , Yazd University, Yazd, Iran
- **Postdoctoral Scholar** June 2016 –February 2017
School of Sustainable Engineering And The Built Environment, Arizona State University
- **Graduate Research Associate** August 2013 – May 2016
School of Sustainable Engineering And The Built Environment, Arizona State University
- **Graduate Student Project Assistant** February 2012 – December 2012
Division of Energy Technology Chalmers University Of Technology, Sweden

INDUSTRIAL EXPERIENCE

- **Energy Consultant** June 2016 – February 2017
New Sun Energies, Phoenix, AZ
- **Student Intern** May 2014 – August 2014
Pierce Energy Planning, Scottsdale, Arizona
- **R&D Engineer** February 2013 – July 2013
Lavan Industrial Group, Kerman, Iran

PUBLICATIONS

- Zeraatpisheh, M., **Arababadi, R.**, & Saffari Pour, M. (2018). Economic Analysis for Residential Solar PV Systems Based on Different Demand Charge Tariffs. **Energies**, 11(12), 3271.
- **Arababadi, R.**, Moslehi, S., El Asmar, M., Haavaldsen, T., & Parrish, K. (2017). Energy policy assessment at strategic, tactical, and operational levels: Case studies of EU 20-20-20 and U.S. Executive Order 13514. **Energy Policy**, 109. <https://doi.org/10.1016/j.enpol.2017.07.042>
- **Arababadi, R.**, Elzomor, M., & Parrish, K. (2017). Selection of energy efficiency measures to enhance the effectiveness of pre-cooling in residential buildings in hot arid climate. **Science and Technology for the Built Environment**, 23(5). <https://doi.org/10.1080/23744731.2016.1262660>
- **Arababadi, R.**, & Parrish, K. (2017). Reducing the need for electrical storage by coupling solar PVs and precooling in three residential building types in the phoenix climate. In **ASHRAE Transactions** (Vol. 123).
- **Arababadi, R.**, & Parrish, K. (2016). Modeling and testing multiple precooling strategies in three residential building types in the Phoenix climate. In **ASHRAE Transactions** (Vol. 122).

- **Arababadi, R.** (2015). Developing and modeling potential precooling strategies for residential buildings in the Phoenix climate. **ASHRAE Transactions**, 121, 1CC.
- **Arababadi, R.**, Parrish, K., & Asmar, M. E. (2016). Waging War on Climate Change: Mapping Energy Policies to Their Strategic, Tactical, and Operational Levels. In **Procedia Engineering** (Vol. 145). <https://doi.org/10.1016/j.proeng.2016.04.002>
- Moslehi, S., & **Arababadi, R.** (2016). Sustainability Assessment of Complex Energy Systems Using Life Cycle Approach-Case Study: Arizona State University Tempe Campus. In **Procedia Engineering** (Vol. 145). <https://doi.org/10.1016/j.proeng.2016.04.142>
- Moslehi, S., Maerefat, M., & **Arababadi, R.** (2016). Applicability of Radiant Heating-Cooling Ceiling Panels in Residential Buildings in Different Climates of Iran. In **Procedia Engineering** (Vol. 145). <https://doi.org/10.1016/j.proeng.2016.04.003>
- **Arababadi, R.**, Naganathan, H., Parrish, K., & Chong, W. K. (2015). Determining the Feasibility of Statistical Techniques to Identify the Most Important Input Parameters of Building Energy Models. In **Procedia Engineering** (Vol. 118). <https://doi.org/10.1016/j.proeng.2015.08.478>

GRADUATE STUDENT ADVISING

- MSc - Hadis Rezaei –Kerman Graduate University of Advanced Technology - storage system to reduce energy consumption of heating/cooling systems in a residential building in the city of shiraz – Expected fall 2019
- MSc - Fakhrolsadat Tofreh – Kerman Graduate University of Advanced Technology - Performance and energy management in a hybrid system of PV panels, thermoelectric generators and PCM materials – Expected fall 2019
- MSc - Mehran Safarnia –Kerman Graduate University of Advanced Technology - Energy simulation and determination of Energy label for Graduate University of Advanced Technology's new building – Expected fall 2019
- MSc - Saeed Nakhostin –Kerman Graduate University of Advanced Technology - Pre-cooling of a building in hot and humid climates using phase change materials – Expected fall 2019

SPONSORED RESEARCH AWARDS

Sponsor	Title
Salt River Project, Arizona, USA	FY 16 SRP/ASU Cooperative Agreement (Project Title: Eliminating the Need for Residential Electric Storage by Coupling Precooling and Solar PVs)
Salt River Project, Arizona, USA	FY 15 SRP/ASU Cooperative Agreement (Project Title: Assessing the Effects of Various Precooling Strategies)
Yazd Electrical Distribution Company, Yazd, Iran	Peak load shifting in various building types in Yazd climate
Yazd Electrical Company, Yazd, Iran	Life Cycle Assessment for Solar PVs

PROFESSIONAL SERVICES

- Review for Journal of Energy Policy.
- Review for Journal of ASHRAE Trans.
- Review for Journal of Building Engineering
- Reviewer for International Conference on Sustainable Design, Engineering and Construction - ICSDEC 2015 - May 2015, Chicago, IL
- Reviewer for International Conference on Sustainable Design, Engineering and Construction - ICSDEC 2016 - May 2016, Tempe, AZ

CONFERENCE PRESENTATIONS

- **Arababadi, R.**, Heras, E. M. L., Kalagasidis, A. S., & Johnsson, F., 2015. *An analysis of energy saving potentials in the UK building stock*. 18th Annual EUEC 2015 - USA's Largest Energy, Utility & Environment Conference, San Diego, CA, Febuary 16 - 18, 2015
- **Arababadi, R.**, & Parrish, K., 2015. *Developing and Modeling Potential Precooling Strategies for Residential Buildings in the Phoenix Climate*. Paper to be presented at the 2015 ASHRAE Annual Conference, Atlanta, USA.
- **Arababadi, R.**, Parrish, K. & El Asmar, M. 2016. Waging War on Climate Change: Mapping Energy Policies to Their Strategic, Tactical, and Operational Levels. *Procedia Engineering*, 145, 11-17.

- **Arababadi, R. & Parrish, K.** 2016. Modeling And Testing Multiple Precooling Strategies In Three Residential Building Types In The Phoenix Climate. 2016 ASHRAE Annual Conference, St Louis, USA.

HONORS AND AWARDS

- Presidential Award, Iran national Elites Foundation, 2017
- Arizona State University Graduate College travel grant for ASHRAE annual conference at Atlanta, GA starting June 27, 2015.
- Arizona State University Graduate College travel grant for ASHRAE winter conference at Orlando, FL starting January 23, 2016.

PROFESSIONAL MEMBERSHIPS

- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- American Society of Civil Engineers (ASCE)
- American Society of Mechanical Engineers (ASME)
- Institute of Electrical and Electronics Engineers (IEEE)

LANGUAGES

- Farsi - native language
- English – Fluent
- Swedish- speak, read, and write with basic competence

COMPUTER SKILLS

- EnergyPlus
- eQuest
- Open Studio
- SketchUp
- Matlab
- Mini tab
- Office
- Aurora Solar