

Mohammad Heidarinejad, Ph.D.

EDUCATION

- Ph.D. Mechanical Engineering, The Pennsylvania State University, 2014
- M.Sc Architectural Engineering, The Pennsylvania State University, 2011
- B.Sc Mechanical Engineering, Sharif University of Technology, 2006

EXPERTISE

Building science, multi-scale modeling of the built environment, building energy and environmental measurements, energy efficient buildings, building energy simulations, computational fluid dynamics, building control, and sustainable and smart cities.

RESEARCH

Dr. Mohammad Heidarinejad's research interests center around the following topics:

- Multi-scale modeling of building energy systems in the built environment to understand relative significance of the heat transfer processes
- Energy use patterns classification of the building energy systems to design energy efficient buildings and develop opportunities to retrofit existing buildings
- Application of high performance computing for modeling building energy systems in the built environment to design sustainable and smart cities
- Numerical and experimental modeling of the transport processes in and around buildings located in the built environment
- Monitoring environmental conditions and airflow patterns to quantify impacts of building control on occupants' thermal comfort and health outcomes
- Design and deployment of portable inexpensive mentoring sensors to monitor environmental conditions in buildings and measure energy consumption of buildings
- Performance assessment of different heating, ventilation, and air-conditioning systems using numerical modeling and experimental facility

SELECTED RECENT PUBLICATIONS

- Heidarinejad, M., Dalgo, D., Mattise, N., Srebric, J., "Personalized Cooling as an Energy Efficiency Technology for City Footprint Reduction", *Journal of Cleaner Production* 171 (2018) 491-505.
- Heidarinejad, M., Dahlhausen, M., Mattise, N., Sharma, K., Benne, K., Mcamber, D., Brackney, L., and Srebric, J., *Demonstration of Reduced-Order Urban Scale Building Energy Models*, *Energy and Buildings* 156 (2017) 17-28.
- Heidarinejad, M., Cedeño-Laurent, J.G., Wentz, J.R., Rekstad, N.M., Spengler, J.D., and Srebric, J. *A Framework to Classify Campus Buildings Based on Their Energy Patterns in Support of On-Site Data Collection and Building Energy Simulation Modeling*, *Energy Conversion and Management* 144 (2017), 164-180.
- Delgoshaei, P., Heidarinejad, M., Xu, K., Wentz, J.R. and Srebric, J., "Impacts of Building Operational Schedules and Occupants on the Lighting Energy Consumption Patterns of an Office Space", *Building Simulation* 10 (2017), 447-458.
- Khoshdel Nikkho, S., Heidarinejad, M., Liu, J., and Srebric, J. *Quantifying the impact of urban wind sheltering on the building energy consumption*, *Applied Thermal Engineering* 116 (2017) 850-865.

- Kim, Y.S., Heidarinejad, M., Dahlhausen, M., Srebric, J. Building Energy Model Calibration with Occupancy and Plug-Load Schedules Derived from Electricity Use Data, Applied Energy 190 (2017) 997-1007.

PROFESSIONAL SOCIETY MEMBERSHIPS

- Member, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- Member, American Society of Mechanical Engineers (ASME)

PROFESSIONAL CERTIFICATIONS

- Engineer-in-Training (EIT)
- LEED Green Associate