HYEUNGUK AHN

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EDUCATION

Lawrence Berkeley National Laboratory	Postdoctoral Fellow, 2021
Pennsylvania State University	Architectural Engineering, Ph.D., 2019
Seoul National University, Seoul, Republic of Korea	Architectural engineering, B.S., 2015

APPOINTMENTS

2022–Present Assistant Professor
Department of Architecture-Architectural Engineering, Ajou University

2021–2022 Research Scientist
Division of Technical Supervision, Green Technology Center Korea

2019–2021 Rosenfeld Postdoctoral Fellow
Building Technology and Urban Systems Division, Lawrence Berkeley National Lab

2015–2019 Research Assistant
Architectural Engineering, Pennsylvania State University

HONORS AND AWARDS

- Rosenfeld Postdoctoral Fellowship, U.S. Department of Energy — Sep 2019–Sep 2021
- Marlene and Joseph Borda Fellowship, Penn State University — Jul 2019
- Best Graduate Student Paper, ASHRAE 2019 Winter Conference — Jan 2019
- ASHRAE Grant-in-aid Fellowship, ASHRAE — Aug 2018
- Graduate Research Assistantship, Penn State University — Jun 2016–Dec 2018
- Graduate Scholarship Excellence in Engineering, Penn State University — Jan 2018
- Harry G. Miller Fellowship, Penn State University — Aug 2017
- National Science and Engineering Undergraduate Scholarship, Seoul National University — 2013–2014
- Superior Academic Performance Scholarship, Seoul National University — 2010
- Certificate of Achievement, United States Army — 2013

PEER-REVIEWED JOURNAL ARTICLES (*denotes corresponding author)

1. **Ahn, H.***, Miller, W., Sheaffer, P., Tutterow, V. and Rapp, V., 2021. Opportunities for installed combined heat and power (CHP) to increase grid flexibility in the US. **Energy Policy**, 157, p.112485.
2. **Ahn, H.***, Liu, J., Kim, D., Yin, R., Hong, T., & Piette, MA. (2021). How can floor covering influence buildings' demand flexibility?. **Energies**, 14(12), 1-17.
3. **Ahn, H.**, Rim, D., Pavlak, G. S., & Freihaut, J. D.* (2019). Uncertainty analysis of energy and economic performances of hybrid solar photovoltaic and combined cooling, heating, and power (CCHP+ PV) systems using a Monte-Carlo method. **Applied Energy**, 255, 113753.
4. **Ahn, H.** *, Freihaut, J. D., & Rim, D. (2019). Economic feasibility of combined cooling, heating, and power (CCHP) systems considering electricity standby tariffs. **Energy**. 169, 420-432.
5. **Ahn, H.**, Rim, D.*, & Freihaut, J. D. (2018). Performance assessment of hybrid chiller systems for combined cooling, heating and power production. **Applied Energy**, 225, 501-512.
6. **Ahn, H.**, Rim, D. *, & Lo, L. J. (2018). Ventilation and energy performance of partitioned indoor spaces under mixing and displacement ventilation. **Building Simulation**, 11 (3), 561-574.

PEER-REVIEWED CONFERENCE PAPERS & PRESENTATIONS

1. **Ahn, H.**, Miller, W., Sheaffer, P., & Rapp, V. (2020). Can Combined Heat and Power (CHP) be a Friend to Renewable Energy? 2020 AIChE Annual Meeting, Virtual, Nov 16–20, 2020.
2. **Ahn, H.**, Freihaut, J. D., & Rim, D. (2019). Economic feasibility of combined cooling, heating, and power systems, 2019 ASHRAE winter conference, Atlanta, GA, Jan 12–16, 2019. (recognized as **the best graduate paper**)
3. **Ahn, H.**, Rim, D., & Freihaut, J. D. (2018). Economic Feasibility of Hybrid Solar-Combined Cooling, Heating and Power (CCHP) Systems for a Large Office in California, 2018 ASHRAE winter conference, Chicago, IL, Jan 20–24, 2018.
4. **Ahn, H.**, Rim, D. (2017). Effects of Diffuser Arrangements for Mixing and Displacement Ventilations on Indoor Environmental Qualities in Two Adjacent Spaces, 2017 ASHRAE annual conference, Long Beach, CA, Jun 24–28, 2017.

SERVICE ACTIVITIES

- **Scientific Technical Committee (TC)**
  - American Society of Heating, Refrigerating, and Air-conditioning Engineers
    Corresponding member - TC 1.10 (Cogeneration systems)
    Provisional corresponding member - TC 6.2 (District Energy)
  - Journal reviewer
    Building Simulation
- **Leadership Roles**
  - Ph.D. graduate governor - Penn State ASHRAE Student Branch
  - Social chair - Penn State AE Graduate Student Association
  - Mechanical option Liaison - Penn State AE Graduate Student Association
  - President - Seoul National University AE Student Council

TEACHING EXPERIENCES

- **Building Mechanical and Electrical Systems (undergraduate course)**
- **Advanced Smart Building M&E System (graduate course)**
- **Guest Lecturer for Graduate Courses in Architectural Engineering**
  - Buildings & Combined Heat and Power (CHP) Systems (AE 551) - Penn State University
  - CFD in Building Design (AE 559) - Penn State University
- **Building Energy Simulation Tool Educator**
  - OpenStudio workshop (sponsored by Korea Conformity Laboratories and Institute for Passive Zero energy Building at SNU)

OTHER WORK EXPERIENCES

Mar–Jul 2015	Software Program Educator NRZst, Seoul National University, Republic of Korea
Jul–Aug 2013	Construction Management Internship Samsung Construction and Trading, Republic of Korea

TECHNICAL SKILLS

- **Building Energy/Computational Fluid Dynamics Simulation**
  - EnergyPlus
  - OpenStudio
  - Star CCM+
- **Building Data Analysis**
  - Python, R