

Employment

Associate senior lecturer

Division of Building Physics
Lund University
Lund, Sweden
2018 Feb 6 → present

Associate senior lecturer

Urban Systems and Dynamics (USD)
Lund University
Sweden
2025 Jan 22 → present

Profile area member

LTH Profile Area: Circular Building Sector
Lund University
Sweden
2024 Jan 10 → present

Profile area member

LTH Profile Area: The Energy Transition
Lund University
Sweden
2024 Mar 14 → present

Postdoc

Swiss Federal Institute of Technology
Lausanne, Switzerland
2020 Sept 1 → 2022 Nov 30

Postdoc

Chalmers University of Technology
Gothenburg, Sweden
2019 Sept 1 → 2020 Aug 31

Research Associate

Lund University
Lund, Sweden
2018 Nov 1 → 2019 Aug 31

Research outputs

Real-world deployment of model-free reinforcement learning for energy control in district heating systems: Enhancing flexibility across neighboring buildings

Moshari, A., Javanroodi, K. & Nik, V. M., 2026 Jan 1, In: Applied Energy. 402, 126997.

Experimental insights on CIRLEM: Enhancing energy efficiency and flexibility in buildings

Hosseini, M., Papadopoulos, P., Shahid, M. S., Javanroodi, K., Erba, S., Grover-silva, E., Riederer, P., Moazami, A., Wurtz, F., Delinchant, B., Carlucci, S., Aghaei, M. & Nik, V., 2026 Jan, In: Energy and Buildings. 351, 116655.

Solar chimney combined with active cooling systems for enhanced indoor comfort and energy efficiency under extreme climates: A data-driven optimization approach

Karimi, A., Norouzi, M. & Javanroodi, K., 2025 Nov, In: Solar Energy. 300, 113809.

Adaptive reinforcement learning for energy management: A progressive approach to boost climate resilience and energy flexibility

Nik, V. M. & Javanroodi, K., 2025 Mar, In: *Advances in Applied Energy*. 17, 100213.

Toward Improved Urban Building Energy Modeling Using a Place-Based Approach

Mutani, G., Vocale, P. & Javanroodi, K., 2023 May, In: *Energies*. 16, 9, 3944.

Challenges resulting from urban density and climate change for the EU energy transition

Perera, A. T. D., Javanroodi, K., Mauree, D., Nik, V. M., Florio, P., Hong, T. & Chen, D., 2023 Apr, In: *Nature Energy*. 8, 4, p. 397-412 16 p.

Using urban building energy modeling to quantify the energy performance of residential buildings under climate change

Deng, Z., Javanroodi, K., Nik, V. M. & Chen, Y., 2023, In: *Building Simulation*. 16, 9, p. 1629-1643 15 p.

Combining computational fluid dynamics and neural networks to characterize microclimate extremes: Learning the complex interactions between meso-climate and urban morphology

Javanroodi, K., Nik, V. M., Giometto, M. G. & Scartezzini, J. L., 2022 Jul 10, In: *Science of the Total Environment*. 829, 154223.

Impact of the COVID-19 pandemic on the energy performance of residential neighborhoods and their occupancy behavior

Todeschi, V., Javanroodi, K., Castello, R., Mohajeri, N., Mutani, G. & Scartezzini, J.-L., 2022 Jul, In: *Sustainable Cities and Society*. 82, 19 p., 103896.

Climate change and energy performance of European residential building stocks: A comprehensive impact assessment using climate big data from the coordinated regional climate downscaling experiment

Yang, Y., Javanroodi, K. & Nik, V., 2021 Sept 15, In: *Applied Energy*. 298, 23 p., 117246.

Urban cells: Extending the energy hub concept to facilitate sector and spatial coupling

Perera, A. T. D., Javanroodi, K., Wang, Y. & Hong, T., 2021 Aug 25, In: *Advances in Applied Energy*. 3, 19 p., 100046.

Climate resilient interconnected infrastructure: Co-optimization of energy systems and urban morphology

Perera, A. T. D., Javanroodi, K. & Nik, V. M., 2021, In: *Applied Energy*. 285, 116430.

A new generation of thermal energy benchmarks for university buildings

Vaisi, S., Mohammadi, S., Nastasi, B. & Javanroodi, K., 2020 Dec, In: *Energies*. 13, 24, 18 p., 6606.

Interactions between extreme climate and urban morphology: Investigating the evolution of extreme wind speeds from mesoscale to microscale

Javanroodi, K. & Nik, V. M., 2020, In: *Urban Climate*. 31, 100544.

Impacts of Microclimate Conditions on the Energy Performance of Buildings in Urban Areas

Javanroodi, K. & Nik, V., 2019 Aug 16, In: *Buildings*. 9, 8, 19 p., 189.

A novel design-based optimization framework for enhancing the energy efficiency of high-rise office buildings in urban areas

Javanroodi, K., Nik, V. & Mahdavinejad, M., 2019 Aug, In: *Sustainable Cities and Society*. 49, 21 p., 101597.

Impacts of urban morphology on reducing cooling load and increasing ventilation potential in hot-arid climate

Javanroodi, K., Mahdavinejad, M. & Nik, V., 2018, In: *Applied Energy*. 231, p. 714-746 33 p.

Impact of roof shape on air pressure, wind flow and indoor temperature of residential buildings

Mahdavinejad, M. & Javanroodi, K., 2016, In: *Journal of Sustainable Building Technology & Urban Development*. 7, 2, p. 87-103

Investigating Condensation Role in Defects and Moisture Problems in Historic Buildings, Case study: Varamin Friday mosque in Iran
Mahdavinejad, M., Javanroodi, K. & Hashemi Rafsanjani, L., 2014, In: World Journal of Science, Technology and Sustainable Development. 10, 4, p. 308-325

Natural ventilation performance of ancient wind catchers, an experimental and analytical study - case studies: one-sided, two-sided and four-sided wind catchers
Mahdavinejad, M. & Javanroodi, K., 2014, In: International Journal of Energy Technology and Policy. 10, 1, p. 36-60

Projects

CiNERGY: Citizen-led sustainable transition to empower Nordic Energy communities (CiNERGY): Sociotechnical Innovations for Enhanced Policy Instruments, Resilience, and Circularity

Javanroodi, K. (Researcher)
2025/01/01 → 2029/12/31

Citizen-led sustainable transition to empower Nordic Energy communities (CiNERGY): Sociotechnical Innovations for Enhanced Policy Instruments, Resilience, and Circularity

Javanroodi, K. (PI)
FORMAS, The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning
2025/01/01 → 2029/12/31

COLLECTiEF: Collective Intelligence for Energy Flexibility

Nik, V. (Project coordinator) & Javanroodi, K. (Researcher)
2021/06/01 → 2025/05/31

DigiCiti: DIGiTal energy solutions promoting social innovation, Circular economy, climate change mITigation and urban resilience

Nik, V. (Project coordinator) & Javanroodi, K. (Researcher)
2022/12/01 → 2025/11/30

CARUACI: enhancing Climate change Adaptation and Resilience in Urban areas through combining Artificial and Collective Intelligence

Nik, V. (Project coordinator) & Javanroodi, K. (Researcher)
2022/06/01 → 2023/05/31

FlexiSync: Flexible energy system integration using concept development, demonstration and replication

Nik, V. (Project coordinator) & Javanroodi, K. (Researcher)
2019/01/01 → 2022/12/31

How prepared are Swedish detached houses to adapt to Climate Change?

Nik, V. (Project coordinator) & Javanroodi, K. (Researcher)
2022/09/01 → 2025/08/31

nZEBRA: Intensive blended course in Climate Neutral Buildings to address nZeb regulation and complex behaviour of buildings

Javanroodi, K. (PI) & Nik, V. (CoPI)
2023/09/01 → 2026/08/31

MICROCOM: MICROCOM: Mitigating Indoor Comfort and Health Risks in extreme Microclimate conditions through AI-powered building management systems

Javanroodi, K. (Project coordinator) & Nik, V. (Researcher)
Crafoord Foundation
2023/05/29 → ...

Moving from meso-climate to micro-climate

Javanroodi, K. (PI) & Nik, V. (PI)

2018/09/01 → 2019/09/30

Wind-Phil Architecture, Optimization of High-rise Building Form for Efficient Summer Cooling in Tehran

Javanroodi, K. (PI) & Nik, V. (PI)

2018/10/01 → 2019/12/31