

HAMED JAFARGHOLI

Energy Systems Engineer — Heat Pumps, Refrigeration & Industrial Thermal Systems

Milan and Palermo, open to relocation | hamed.jafargholi@gmail.com | [linkedin.com/in/hamed-jafargholi-50454184](https://www.linkedin.com/in/hamed-jafargholi-50454184) | [Google Scholar profile](#)

Work authorization: holder of an Italian study/research residence permit



PROFESSIONAL SUMMARY

Energy engineer completing a PhD in vapor-compression refrigeration, heat pump systems, and industrial thermal processes. Experienced in experimental rig design, numerical modeling, and performance analysis of these systems. Motivated, eager to keep learning, and experienced working in international settings (Italy, Spain, Slovenia). Looking to apply hands-on R&D and modeling expertise to industrial energy-efficiency and decarbonization projects.

CORE COMPETENCIES

Technical: vapor-injection refrigeration systems · heat pump design & testing · CO₂ and natural-refrigerant cycles · food product freezing systems · industrial process heat · energy flexibility & demand-side analysis · experimental rig design · thermodynamic modeling

Software: MATLAB / Simulink / Simscape (Advanced) · Engineering Equation Solver — EES (Advanced) · Python (Intermediate) · Ansys (Intermediate) · PVsyst (Basic) · eQUEST (Basic) · Microsoft Office Suite

Languages: English (B2 — independent user) · Italian (A2 — actively improving) · Persian (native)

PROFESSIONAL EXPERIENCE

Researcher — University of Ljubljana, Faculty of Mechanical Engineering, Slovenia

July 2026 – October 2026

- Research on vapor-compression refrigeration systems, building on experimental and modeling work carried out during doctoral studies.

PhD Researcher — Energy Engineering — University of Palermo, Italy

December 2021 – February 2026

- Conducted integrated experimental and numerical analysis of system performance and product freezing in a vapor-injection seafood freezing system.
- Designed and ran experimental test campaigns on a modulating vapor-injection scroll compressor system for fish product freezing; findings presented at the XVIII International Conference on Fluid Mechanics, Heat Transfer and Thermodynamics (Buenos Aires, 2024).
- Developed and validated numerical models to map heat pump performance, contributing to a published study on reversible air-to-water heat pumps for energy-flexibility applications.

Guest Researcher — Applied Thermal Engineering (CREVER Research Group) — Universitat Rovira i Virgili, Tarragona, Spain

November 2023 – April 2024

- Completed a six-month international research placement studying thermal systems based on CO₂ and natural refrigerants.
- Investigated the efficiency and sustainability of low-GWP refrigerant technologies for advanced energy applications.

Quality Control Expert — Imen Sahand Arya Co. (SISICO), Tehran, Iran

2017 – 2018

- Performed quality oversight and product inspection across active projects, ensuring compliance with project-specific quality standards.
- Produced technical documentation and inspection reports, coordinating with cross-functional teams to resolve non-conformities and drive process improvement.

EDUCATION

PhD in Energy Engineering

University of Palermo, Italy | Dec 2021 – Feb 2026 (expected)

Thesis: Integrated Experimental and Numerical Analysis of System Performance and Product Freezing in a Vapor Injection Seafood Freezing System

MSc in Energy Systems Engineering — Energy Technology

Science and Research Branch, Azad University (SRBIAU), Tehran, Iran | 2014 – 2017

Final grade: 18.57/20 (ranked 3rd) | Thesis: Experimental Investigation and Measurement of Water Extraction from Hybrid Refrigeration–HDH Systems

BSc in Nuclear Engineering

Science and Research Branch, Azad University (SRBIAU), Tehran, Iran | 2008 – 2014

SELECTED PUBLICATIONS

- Jafargholi, H., Catrini, P., Munith Kumar, D., La Villetta, M., Panno, D. (2024). Mapping the performance of a reversible air-to-water heat pump for improving energy savings estimation in energy flexibility scenarios.
- Shafii, M.B., Jafargholi, H., Faegh, M. (2018). Experimental investigation of heat recovery in a humidification-dehumidification desalination system via a heat pump. (full list on Google Scholar)

PROFESSIONAL DEVELOPMENT & CONFERENCES

- Industrial High-Temperature Heat Pumps for Decarbonization of Industrial Process Heating — Technical University of Denmark (DTU), Copenhagen (Jun 2025)
- XVIII International Conference on Fluid Mechanics, Heat Transfer and Thermodynamics — Buenos Aires (Nov 2024)
- Heat Pump Forum, REPowerEU — Brussels (Sep 2022)
- Member, Iranian Energy Association — IEA (2016 – 2025)

INTERESTS

Cycling, hiking, photography, reading science and business books, travel and culinary exploration.