

MOHAMMAD AMIN JALILVAND

Ph.D. Mechanical Engineering | University of Genoa, Italy

November 2025 - Now

Supervisor: [Dr. Alberto Traverso](#)

M.Sc. Mechanical Engineering | K. N. Toosi University of Technology, Iran

Sep 2022- August 2025

GPA: 18.12/20 (3.77/4)

Thesis title: Comprehensive Analysis of the Conversion and Storage of Renewable Energy into Hydrogen Chemical Carrier

Supervisor: [Dr. Madjid Soltani](#)

Advisor: [Dr. Morteza Hosseinpour](#)

B.Sc. Mechanical Engineering | University of Guilan, Iran

Sep 2018 - Aug 2022

GPA: 15.93/20 (3.23/4)

Thesis title: Investigating the effect of changing the mole fraction of input hydrogen on the performance of a solid oxide fuel cell

Supervisor: [Dr. Javad Mahmoudimehr](#)

EXPERIENCES

Research Assistant | University of Genoa

- Thermochemical Power Group
 - Nov/2025 - Now

Research Assistant | K.N. Toosi University of Technology

- Bio and Energy Lab
 - Sep/2022 - Aug/2025

Research Assistant | K.N. Toosi University of Technology

- Bio and Energy Lab
 - Sep/2022 - Aug/2025

Teaching Assistant | K.N. Toosi University of Technology

- Master's course: Advanced Thermodynamic, Instructor: Dr. Ziabasharhagh
 - Sep/2024 - Jan/2025
- Master's course: Advanced Power Plant Design, Instructor: Dr. Ziabasharhagh
 - Mar/2024 - July/2024
- Bachelor's course: Gas Dynamics, Instructor: Dr. Ziabasharhagh
 - Mar/2024 - July/2024
- Master's course: Advanced Thermodynamic, Instructor: Dr. Ziabasharhagh
 - Oct/2023 - Feb/2024

PUBLICATION

1. "Energy and Exergy Assessment of Anaerobic Digestion for Ammonia Synthesis: Toward a Sustainable Water-Energy-Food Nexus" **Mohammadamin Jalilvand**; M.Soltani; M.Hosseinpour; Jatin Nathwani; Ann Fitz-Gerald (Published - [Biomass and Bioenergy Energy](#))

2. "Integration of Emerging Technology in Next-Generation Electric Vehicles: Evolution, Advancements, and Regulatory Prospects" E.Yamini; M.Zarnoush; **Mohammadamin Jalilvand**; S. M. Zolfaghari; F.Esmaeilion; M.Soltani; A.Taklifi; Davide Astiaso Garcia (Published - [Journal of Results in Engineering](#)).

3. Book Chapter: "Technical, Economic, and Social Impact of Energy Communities" (Published - Elsevier).
 4. 'Performance-driven optimization of a hybrid cryogenic-adsorption energy storage system with CCHP and desalination', Farbod Esmailion, M. Soltani, Mahsa Dehghan Manshadi, **Mohammadamin Jalilvand**, Azahara Luna-Triguero, Davide Astiaso Garcia (Submitted to the Journal of Sustainable Energy Technologies and Assessments)
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PATENT

1. PorousMagnetic Ball for Ploughing and Injecting Mineral Substances in Vertical Farming (**published in the Iranian National Patent Office**)
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PROJECTS

Carrier heat pump and compressor modeling – Thermochemical Power Group, University of Genoa

- Nov 2025 – Now
- Modeling and validation of heat pump cycles and compressor behavior for high-temperature and industrial energy applications

SCOPTES – sCO₂ Operating Pumped Thermal Energy Storage (European Commission project) – Thermochemical Power Group, University of Genoa

- Nov 2025 – Now
 - Development and analysis of dynamic supercritical CO₂-based pumped thermal energy storage systems for grid stability and industrial energy integration
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LANGUAGES

English:

IELTS (Academic): 7.5 (Overall Score), Listening: 8.5, Reading: 8.5, Speaking: 7.0, Writing: 6.0

Persian: Native

Italian: A1 Level
