

Resume

Hadi Farzan

PERSONAL AND CONTACT INFORMATION



Birthday: September 22, 1987

Sex: Male

E-mail: hadi.farzan@gmail.com, hadi.farzan@bam.ac.ir

Google Scholar: [Google Scholar Link of Hadi Farzan](#)

EDUCATIONAL BACKGROUND

Sep. 2012-Aug. 2016 Ph.D. in Mechanical Engineering

Bahonar University of Kerman, Kerman, Iran
Thesis: Inverse Design Metallurgical Smelting Furnace to Achieve the Desired Melting Rate and Increase Thermal Efficiency
GPA: 17.75/20

Sep. 2009-Aug. 2012 M.Sc. in Mechanical Engineering

Shiraz University, Shiraz, Iran
Thesis: Numerical Simulation of Natural Gas Driers by Using Supersonic Gas Separator
GPA: 17.54/20

Sep. 2005-Aug. 2009. B.Sc. in Mechanical Engineering

Bahonar University of Kerman, Kerman, Iran
GPA: 16.20/20

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HONORS AND AWARD

Distinguished Researcher in Engineering Faculty of Higher Education Complex of Bam in **2018**

Distinguished Researcher of Higher Education Complex of Bam in **2019**

Distinguished Researcher of Higher Education Complex of Bam in **2020**

Distinguished Researcher of Higher Education Complex of Bam in **2021**

Distinguished Researcher of Higher Education Complex of Bam in **2022**

INDUSTRY EXPERIENCE

➤ **Design & Inspection Engineer**

Construction Engineering Organization, Part-time
Sep 2012 – Present
Kerman, Iran

➤ **Visiting Scholar**

Sarcheshmeh Copper Complex, Full-time
Jun 2021 - Oct 2021
Sarcheshmeh County, Kerman, Iran

- **Project Title: Use of TRNSYS to simulate a renewable HVAC system (including the estimation of thermal and electrical loads) for a net-zero-energy office building: A case study in Sarcheshmeh**

➤ **Research Fellowship**

National Iranian Gas Company, Part-time
Nov 2010 - Jul 2012
Shiraz County, Fars, Iran

- **Project Title: Numerical Simulation of Natural Gas Driers by Using Supersonic Gas Separator**
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ACADEMIC EXPERIENCE

- **Lecturer**
Higher Education Complex of Bam, Part-time
Sep 2012 – Sep 2016
Bam County, Kerman, Iran
- **Visiting Researcher**
Southern Brittany University (Université Bretagne-Sud), Full-time
Oct 2014 - Jun 2015
Brittany, France
 - **Project Title: Optimize the design of a reverberatory furnace used extensively in copper industries and simulate its transient dynamics**
- **Assistant Professor**
Higher Education Complex of Bam, Full-time
Sep 2016 – Nov 2021
Bam County, Kerman, Iran
- **Head of Energy Research Group**
Higher Education Complex of Bam, Part-time
Jun 2017 – Jun 2019
Bam County, Kerman, Iran
 - **Project Title: Design and Construct an Experimental Setup and Conducting Several Research Studies Focusing on Asphalt Solar Collectors (ASCs)**
 - **Project Title: Design and Construct an Experimental Setup Focusing on Forced Convection Solar Air Heaters**
 - **Project Title: Design and Construct an Experimental Setup and Conducting Several Research Studies Focusing on Solar Air Heaters Using Latent Heat Storage Systems**
 - **Project Title: Design and Construct an Experimental Setup and Conducting Several Research Studies Focusing on Solar Air Heaters Using Sensible Heat Storage Systems**
 - **Project Title: Design and Construct an Experimental Setup Focusing on Integral Collector Storage (ICS)**
 - **Project Title: Design and Construct an Experimental Setup Focusing on Thermal Diode Integral Collector Storage (Thermal Diode ICS)**

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- **Project Title: Design and Construct an Experimental Setup Focusing on Square Cross-Flow Solar Air Heater**
 - **Project Title: Design and Construct an Experimental Setup Focusing on Novel Photovoltaic Thermal (PV/T) Solar Water Heater**
 - **Project Title: Design and Construct an Experimental Setup Focusing on New Baffled Photovoltaic Thermal (PV/T) Solar Air Heater Integrated with Encapsulated Phase Change Materials**
- **Associate Professor**
Higher Education Complex of Bam, Full-time
Nov 2021 – Present
Bam County, Kerman, Iran
- **Conference Scientific Secretary**
5th National Conference on New Technologies in Electrical, Computer and Mechanical Engineering of Iran, Sep 11, 2022, Bam, Iran
- **Conference Scientific Secretary**
6th National Conference on New Technologies in Electrical, Computer and Mechanical Engineering of Iran, July 11, 2023, Bam, Iran
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TEACHING EXPERIENCE

- **B.Sc. (Mechanical B.Sc. Students)**
Heat Transfer
Fluid Mechanics
Engineering Mathematics
Refrigeration and Design of Refrigeration Systems and Cold Storage
Solar Energy Engineering
HVAC System Design
HVAC Control Systems
Computational Fluid Dynamics
- **M.Sc. (Mechatronic M.Sc. Students)**
Advanced Engineering Mathematics
Selected Topics in Mechanical Engineering
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PUBLICATION AND ACADEMIC RESEARCH

Journal Paper:

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- **H. Farzan**, S.H. Sarvari, S. Mansouri, Inverse boundary design of a radiative smelting furnace with ablative phase change phenomena, **Applied Thermal Engineering**, 98 (2016) 1140-1149.
 - **H. Farzan**, T. Loulou, S.H. Sarvari, Estimation of applied heat flux at the surface of ablating materials by using sequential function specification method, **Journal of Mechanical Science and Technology**, 31 (2017) 3969-3979.
 - **H. Farzan**, T. Loulou, S.H. Sarvari, Boundary condition estimation of ablating material using modified sequential function specification method, **Journal of Thermophysics and Heat Transfer**, 32 (2018) 514-524.
 - **H. Farzan**, The study of thermostat impact on energy consumption in a residential building by using TRNSYS, **Journal of Renewable Energy and Environment**, 6 (2019) 15-20.
 - **H. Farzan**, T. Loulou, S.M. Hosseini Sarvari, A new approach to speed up the conjugate gradient method by applying the complex variable differentiation method, **Inverse Problems in Science and Engineering**, 27 (2019) 1703-1717.
 - **H. Farzan**, S.M.H. Sarvari, T. Loulou, Application of Noise Reduction Technique in the Inverse Analysis Using Kalman Filter, **Heat Transfer Engineering**, 41 (2019) 1174-1188.
 - **H. Farzan**, Comparative performance assessment of flat plate and evacuated tube collectors for domestic water heating systems in Kerman, Iran, **Energy Equipment and Systems**, 8 (2020) 143-152.
 - **H. Farzan**, M. Ameri, S. Jaafarian, Effectiveness of continuous and discontinuous-flow strategies in heat dynamics and performance of asphalt solar collector: An experimental study, **Iranian (Iranica) Journal of Energy & Environment**, 11 (2020) 137-145.
 - **H. Farzan**, S. Jaafarian, M. Ameri, Experimental and Theoretical Investigation of Flow Rate Effect on Dynamic and Efficiency of Asphalt Solar Collector in Real Operating Condition, **Modares Mechanical Engineering**, 20 (2020) 1271-1282.
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- **H. Farzan**, E.H. Zaim, M. Ameri, Study on effect of glazing on performance and heat dynamics of asphalt solar collectors: An experimental study, **Solar Energy**, 202 (2020) 429-437.
 - E.H. Zaim, **H. Farzan**, M. Ameri, Assessment of pipe configurations on heat dynamics and performance of pavement solar collectors: An experimental and numerical study, **Sustainable Energy Technologies and Assessments**, 37 (2020) 100635.
 - M. Ameri, **H. Farzan**, M. Nobari, Evaluation of different glazing materials, strategies, and configurations in flat plate collectors using glass and acrylic covers: An experimental assessment, **Iranian (Iranica) Journal of Energy & Environment**, 12 (2021) 297-306.
 - M. Ameri, R. Sardari, **H. Farzan**, Thermal performance of a V-Corrugated serpentine solar air heater with integrated PCM: A comparative experimental study, **Renewable Energy**, 171 (2021) 391-400.
 - **H. Farzan**, E.H. Zaim, Feasibility study on using asphalt pavements as heat absorbers and sensible heat storage materials in solar air heaters: An experimental study, **Journal of Energy Storage**, 44 (2021) 103383.
 - **H. Farzan**, E.H. Zaim, M. Ameri, T. Amiri, Study on effects of wind velocity on thermal efficiency and heat dynamics of pavement solar collectors: An experimental and numerical study, **Renewable Energy**, 163 (2021) 1718-1728.
 - E. Hasan Zaim, **H. Farzan**, Effects of PCM Mass on Heat Dynamics and Thermal Performance of Solar Air Heaters: A Numerical and Analytical Study, **Journal of Renewable Energy and Environment**, 8 (2021) 45-53.
 - **H. Farzan**, Dynamic Simulation of Solar-Powered Heating and Cooling System for an Office Building Using TRNSYS: A Case Study in Kerman, **Journal of Renewable Energy and Environment**, 9 (2022) 27-36.
 - **H. Farzan**, E.H. Zaim, T. Amiri, Performance investigation on a new solar air heater using phase change material/expanded metal mesh composite as heat storage unit: An experimental study, **Journal of Energy Storage**, 47 (2022) 103602.
 - M. Mahmoudi, **H. Farzan**, E. Hasan Zaim, Performance of New Absorber Coating Strategy in Solar Air Heaters: An Experimental Case Study, **Iranian (Iranica) Journal of Energy & Environment**, 13 (2022) 124-133.
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- N. Tavazo, M. Nikpour, M. Ghasemi, **H. Farzan**, Evaluation of the effect of natural ventilation on the thermal comfort of worshipers in mosques in hot and dry regions of Iran, **Geography (Regional Planning)**, 12 (2022) 922-939.
 - **H. Farzan**, M. Ameri, M. Mahmoudi, Thermal assessment of a new planar thermal diode integrated collector storage solar water heater in different partial vacuums: An experimental study, **Renewable Energy**, 208 (2023) 119-129.
 - **H. Farzan**, M. Mahmoudi, E. Hasan Zaim, Thermal Analysis of New Solar Air Heater with Inclined Perforated Absorber Plates: Experimental Study, **Iranian (Iranica) Journal of Energy & Environment**, 14 (2023) 189-196.
 - **H. Farzan**, E.H. Zaim, Thermal analysis of a new double-pass solar air heater using perforated absorber and porous materials: An experimental study, **Thermal Science and Engineering Progress**, 38 (2023) 101680.
 - **H. Farzan**, E.H. Zaim, Study on thermal performance of a new combined perforated Metallic/Asphalt solar air heater for heating Applications: An experimental study, **Solar Energy**, 249 (2023) 485-494.
 - **H. Farzan**, E.H. Zaim, T. Amiri, Performance Study on a New Solar Air Heater with Integrated Phase Change Materials and External Recycle: A Numerical and Experimental Study, **Applied Thermal Engineering**, 223 (2023) 120000.
 - **H. Farzan**, M.J. Yousefelahi, Study on Collection and Retention Efficiencies of a New Integrated Collector Storage Solar Water Heating System Using a Planar Thermal Diode: An Experimental Study, **Environmental Science and Pollution Research**, 30 (2023) 75141–75155
 - **H. Farzan**, A. A. Abouee-Mehrizi, M Khazali, Performance Analysis of a Novel Cross-flow Solar Air Heater with Square Perforated Absorber Plate: An Experimental Study, **Journal of Renewable Energy and Environment**, 14 (2023) 385-392
 - N. Tavazo, M. NikPour, M. Ghasemi, **H. Farzan**, The Effect of Canopy Protrusion Amount on Energy Consumption and Thermal Comfort in the Dome Structure (Case Study: Sheikh Lotfollah Mosque), **Creative City Design**, 6 (2023) 16-36
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- **H. Farzan**, M. Mohammadi, Study on Thermal Performance and Dynamics of a New Photovoltaic/Thermal Integrated Collector Storage Solar Water Heating System: An Experimental Study, **Solar Energy** (Accepted)
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Conference Paper:

- **H. Farzan**, E. Goshtasbi, H. Emdad, “Numerical simulation of natural gas flow in the supersonic gas separator”, **20th Annual International Iranian Mechanical Engineering Conference**, May 2013, Tehran, Iran.
 - **H. Farzan**, E. Goshtasbi, H. Emdad, “Numerical investigation of droplet growth in the supersonic gas separator”, **21th Annual International Iranian Mechanical Engineering Conference**, May 2013, Tehran, Iran.
 - **H. Farzan**, M. Ameri, “Design and Simulation of a Hybrid PV/Fuel Cell Power Generation for Stand-Alone”, **3rd Annual Clean Energy Conference**, July 2013, Kerman, Iran.
 - **H. Farzan**, “The Study of Thermostat Impact on Energy Consumption in a Residential Building by Using TRNSYS”, **6th Annual Clean Energy**, February 2019, Shiraz, Iran.
 - **H. Farzan**, “The Study of Performance Comparison of Flat Plate and Evacuated Tube Collectors for Domestic Hot Water Heating Systems in Kerman”, **6th Annual Clean Energy**, February 2019, Shiraz, Iran.
 - **H. Farzan**, M. Jaafarian, M. Ameri, Experimental Study on Thermal Performance and Dynamics of Asphalt Solar Collector in Real Operating Conditions in Bam, **6th Annual Clean Energy**, February 2019, Shiraz, Iran.
 - **H. Farzan**, “Performance Improvement of Solar Air Heater by Using a Temperature-Based Switching Control Method: An Experimental Study”, **7th International Conference on Energy Technology and Management**, August 2021, Ardebil, Iran.
 - **H. Farzan**, “Use of TRNSYS for Modeling and Simulation of an Office Building Utilizing Solar Heating System: A Case Study in Kerman”, **7th International Conference on Energy Technology and Management**, August 2021, Ardebil, Iran.
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- **H. Farzan**, “Dynamic Simulation of Solar-Powered Cooling System A Case Study on an Office Building in Kerman”, **7th International Conference on Energy Technology and Management**, August 2021, Ardebil, Iran.

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- **H. Farzan**, “Study on Rock Bed Thermal Storage System for Space Heating Applications Using TRNSYS”, **6th National Conference on Mechanical and Aerospace Engineering**, September 2021, Tehran, Iran.
 - **H. Farzan**, “Solution of One-Dimensional Inverse Heat Conduction Problem Using Extended Kalman Filter Approach”, **6th National Conference on Mechanical and Aerospace Engineering**, September 2021, Tehran, Iran.
 - **H. Farzan**, “Techno-Enviro Assessment of Iran for Use of Home-Scale Solar Water Heaters”, **6th National Conference on Mechanical and Aerospace Engineering**, September 2021, Tehran, Iran.
 - **H. Farzan**, “Assessing Temperature Distribution and Flow Dynamics inside Asphalt Solar Collector to Evaluate Energy Saving Capability: An Experimental and Numerical Study”, **19th Fluid Dynamics Conference**, November 2021, Tehran, Iran.
 - **H. Farzan**, “Simultaneous Inverse Identification of Time-Varying Strength of Two Heat Sources by Using Sequential Function Specification Method Inverse Problems in Aerospace Engineering”, **19th Fluid Dynamics Conference**, November 2021, Tehran, Iran.
 - **H. Farzan**, E. Hasan Zaim, “Study on Water Flow Dynamics Inside Asphalt Solar Collector to Optimize Pipe Burial Depth: An Experimental and Numerical Study”, **1st National Conference on Energy Analysis, Exergy and Exergeo-Economics of Energy Systems**, November 2021, Gorgan, Iran.
 - **H. Farzan**, “Investigating the thermal Insulation Effects on Energy Consumption of a Zero Energy Office Building: A Case Study in Kerman”, **7th Annual Clean Energy**, Nov 2021, Kerman, Iran.
 - **H. Farzan**, “Simulation Study on the Thermal Performance of a Photovoltaic/Thermal-Direct-Expansion Solar Assisted Heat Pump for Heating Applications in Kerman Climate Conditions”, **7th Annual Clean Energy**, Nov 2021, Kerman, Iran.
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- **H. Farzan**, “Comparing and Assessing the Optimal Tilt Angle of Evacuated Tube and Flat Plate Solar Collectors in Kerman”, **7th Annual Clean Energy**, Nov 2021, Kerman, Iran.
 - **H. Farzan**, “Study on Heat Dynamics of Solar Air Heaters Using Quartzite Rocks as Sensible Heat Storage Unit: A Numerical Study”, **11th National Conference on**
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Environment, Energy and Sustainable Natural Resources, January 2022, Tehran, Iran.

LANGUAGE PROFICIENCY

➤ TOEFL IBT (86)

Reading	20
Listening	23
Speaking	22
Writing	21

COMPUTER SKILLS

Programming Language: FORTRAN, Python (amateur programmer in Python)

Mechanical Software: TRNSYS, T*SOL, PV*SOL, HOMER, DesignBuilder, FLUENT, AutoCAD, EnergyPlus

Computer Application: Microsoft Office, Tecplot

RESEARCH INTEREST

Heat Transfer
Energy Systems
Energy Systems Modeling
Zero-Energy Buildings
Renewable Energy
Experimental Methods
Computational Fluid Dynamics
