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Research Interests

- Thermal Energy Storage
- Solar Desalination
- Solar Collectors
- PV/T Systems
- Exergy Analysis
- Solar Dryers

Education

- Agricultural Mechanization Engineering, Renewable Energy in Agriculture, University of Tabriz, Tabriz, Iran — 2008-2013
- Master of Science, Mechanics of Agricultural Machinery Engineering, University of Tehran, Tehran, Iran — 2006-2008
- Bachelor of Science, Agricultural Machinery, Shahid Bahonar University of Kerman, Iran — 2002-2006

Work Experience

Associate Professor, Faculty of agriculture, University of Birjand, Birjand, Iran — 2017-to date

- Desalination through use of solar energy
  - Built solar stills and exploring ways of enhancing the productivity
  - Created TRNSYS models
- Solar dryers
  - Fabricated cabinet-type solar dryer
  - Developed thermal modeling
- CPC Solar concentrator
  - Manufactured Compound Parabolic Concentrator
  - Developed thermal model of PVT/CPC integration

Skills

- **Language**: English (Advanced); German (Elementary); Farsi (Native)
- **Software skills**: MS office; MATLAB; Python; Solidworks; TRNSYS

Teaching Experience

- "Renewable energies" for bachelor students majoring in management of desert regions
- "Heat transfer" for bachelor students majoring in Agricultural Biosystems Engineering
- "Advanced heat transfer" for MSc students majoring in Agricultural Biosystems Engineering
- "Thermodynamics" for bachelor students majoring in Agricultural Biosystems Engineering
- "Statics" for bachelor students majoring in Range Management
- "Mechanics of materials" for bachelor students majoring in Range Management

Awards and Achievement

- Visiting researcher, University of Politecnico Di Milano, Building and Environment Sciences and Technology (BEST) 2012
- Accepted applicant, International training workshop on solar energy applications in Gansu Natural Energy Research Institute (ISEC-GNERI-China) 2011
- 1st ranked student, Shahid Bahonar University of Kerman 2006

Research Supervision Experience

- BSc thesis = 10
- MSc thesis = 12
- PhD thesis = 3

Selected Master/PhD theses under my Supervision

- Energy/exergy based-evaluation of heating/cooling potential of PV/T and earth-air heat exchanger integration into a solar greenhouse.
- Investigating the effective parameters on solar still productivity.
- Energy and exergy analysis of a solar greenhouse dryer equipped with PVs.
- Investigating the performance of a solar greenhouse dryer equipped with PVs and PCM.
- Performance improvement of a PV/T solar dryer with PCM.
- Biodiesel production from bitter almond oil (BAO) in the presence of biocompatible heterogeneous catalyst synthesized from camel bone.

Selected Journal Publications

- **Hedayatizadeh, M.**, Ajabshirchi, Y., Sarhaddi, F., Farahat, S., Safavinejad, A. and Chaji, H., 2012. Analysis of exergy and parametric study of a v-corrugated solar air heater. *Heat and Mass Transfer*, 48(7), pp.1089-1101.
- **Hedayatizadeh, M.**, Ajabshirchi, Y., Sarhaddi, F., Safavinejad, A., Farahat, S. and Chaji, H., 2013. Thermal and electrical assessment of an integrated solar photovoltaic thermal (PV/T) water collector equipped with a compound parabolic concentrator (CPC). *International Journal of Green Energy*, 10(5), pp.494-522.
- Chaji, H., Ajabshirchi, Y., Esmaeilzadeh, E., Heris, S.Z., **Hedayatizadeh, M.** and Kahani, M., 2013. Experimental Study on Thermal Efficiency of Flat Plate Solar Collector Using TiO2/Water Nanofluid. *Modern Applied Science*,7(10), p.p60.
- **Hedayatizadeh, M.** and Chaji, H., 2016. A review on plum drying. *Renewable and Sustainable Energy Reviews*, 56, pp.362-367.
- **Hedayatizadeh, M.**, Sarhaddi, F., Safavinejad, Ranjbar, F. and Chaji, H., 2016. Exergy loss-based efficiency optimization of a double-pass/glazed v-corrugated plate solar air heater. *Energy*, 56, pp.362-367.
- Chaji, H. and **Hedayatizadeh, M.**, 2017. Quality assessment and kinetics of dehydrated watermelon seeds: Part 1. *Engineering in Agriculture, Environment and Food*, 10(3), pp.178-185.
- Pakdel, M.A., **Hedayatizadeh, M.**, Tabatabaei, S.M. and Niknia, N., 2017. An experimental study of a single-slope solar still with innovative side-troughs under natural circulation mode. *Desalination*, 422, pp.174-181.
- Sharayei, P., **Hedayatizadeh, M.**, Chaji, H. and Einafshar, S., 2018. Studying the thin-layer drying kinetics and qualitative characteristics of dehydrated saffron petals. *Journal of Food Processing and Preservation*, 42(9), p.e13677.
- Mahdavi, S., Sarhaddi, F. and **Hedayatizadeh, M.**, 2019. Energy/exergy based-evaluation of heating/cooling potential of PV/T and earth-air heat exchanger integration into a solar greenhouse. *Applied Thermal Engineering*, 149, pp.996-1007.
- **Hedayatizadeh, M.**, Sarhaddi, F., & Pugsley, A. (2020). A detailed thermal modeling of a passive single-slope solar still with improved accuracy. Ground*water for Sustainable Development*, 100384.
- **Hedayatizadeh, M.** and Sarhaddi, F., 2021. Thermal simulation of a modified solar desalination system with four transparent apertures with the aim of productivity augmentation. *Computers & Chemical Engineering*, p.107314.
- Nakhaei, M., Behdani, M. A., Asgharipour, M. R., & **Hedayatizadeh, M**. (2022). Monitoring and accounting the sustainability of tomato greenhouse production systems of Mirjaveh district, Iran based on emergetic indicators. Current Research in Environmental Sustainability, 4, 100149.
- Rahimi, A., Aghkhani, M. H., **Hedayatizadeh, M.**, & Fayyazi, E. (2023). Application of ultrasound technology in the intensification of biodiesel production from bitter almond oil (BAO) in the presence of biocompatible heterogeneous catalyst synthesized from camel bone. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 45(2), 4064-4086.

- Rouzegar, M. R., Abbaspour-Fard, M. H., & **Hedayatizadeh, M.** (2023). Design, thermal simulation and experimental study of a hybrid solar dryer with heat storage capability. Solar Energy, 258, 232-243.

Service Activities

• Peer Review of International/Domestic Journals	2010-to date
• Membership at Iranian Solar Energy Scientific Society	2012-to date

Research Funding and Grants

Title of the project	Company	Contract price	
• Feasibility study of brackish water resources and selection of the optimum method for desalination (case study: Khusf)	Joint project with Regional Water Company of South Khorasan	$24000	2021-to date

Patents

Title of the patent	
• Design and Development of a New Multipurpose Machine for Pistachio Process	2008
• A constructed prototype for simulation of the hydraulic regenerative brake systems	2009