

## MAHDI HEDAYATIZADEH, PhD

Assistant Professor in Renewable Energy in Agriculture

Faculty of Agriculture, University of Birjand

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### RESEARCH INTERESTS

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Solar Desalination; Solar Collectors; PV/T Systems; Exergy Analysis; Solar Dryers

### EDUCATION

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Doctor of Philosophy, Agricultural Mechanization Engineering, Renewable Energy in Agriculture **2012**

University of Tabriz, Tabriz, Iran

- Dissertation: Exergetic optimization of a concentrating photovoltaic-thermal (PV/T) solar collector
- Advisor: Dr. Yahya Ajabshirchi

Master of Science, Mechanics of Agricultural Machinery Engineering **2008**

University of Tehran, Tehran, Iran

- Thesis: A prototype for simulation of the hydraulic regenerative brake system used in agricultural vehicles
- Advisor: Dr. Ali Jafari

Bachelor of Science, Agricultural Machinery **2006**

Shahid Bahonar University of Kerman, Iran

- Thesis: Design and Development of a New Multipurpose Machine for Pistachio Process
- Advisor: Dr. Mohsen Shamsi

### RESEARCH EXPERIENCE

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Assistant Professor **2012-Present**

Faculty of agriculture, University of Birjand, Birjand, Iran

- 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

1. **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.
2. 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.
3. Chaji, H., Ajabshirchi, Y., Esmailzadeh, E., Heris, S.Z., Hedayatizadeh, M. and Kahani, M., 2013. Experimental Study on Thermal Efficiency of Flat Plate Solar Collector Using TiO<sub>2</sub>/Water Nanofluid. *Modern Applied Science*, 7(10), p.p60.
4. Hedayatizadeh, M. and Chaji, H., 2016. A review on plum drying. *Renewable and Sustainable Energy Reviews*, 56, pp.362-367.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. Hedayatizadeh, M., Sarhaddi, F., & Pugsley, A. (2020). A detailed thermal modeling of a passive single-slope solar still with improved accuracy. *Groundwater for Sustainable Development*, 100384.
11. 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.
12. 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.

## Awards and achievement

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Visiting researcher	University of Politecnico Di Milano, Building and Environment Sciences and Technology (BEST)
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**2012**

Accepted applicant	International training workshop on solar energy applications in Gansu Natural Energy Research Institute (ISEC-GNERI-China)	<b>2011</b>
1 <sup>st</sup> ranked student	Shahid Bahonar University of Kerman	<b>2006</b>

### Service activities

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|---|---------------------|
| • Peer Review of International/Domestic Journals        | <b>2010-Present</b> |
| • Membership at Iranian Solar Energy Scientific Society | <b>2012-Present</b> |

### Grants

Title of the project	Company	Contract price	<b>2021-present</b>
• 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	