Assoc. Prof. Shiva Gorjian

EMPLOYMENT

2023-2025

Experienced Researcher (Alexander von Humboldt Fellow)

- Fraunhofer Institute for Solar Energy Systems ISE

Freiburg, Germany

2016-2023

Associate Professor

- Mechanics of Biosystems Engineering Department
- Renewable Energy Department

Tarbiat Modares University (TMU)
Tehran, Iran

CONTACT INFORMATION

Email

- Primary: shiva.gorjian@ise-extern.fraunhofer.de
- Institutional: gorjian@modares.ac.ir
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- Germany: +49 1521 2525 906
- Iran: +98 918 817 1769

Online profiles

- LinkedIn
- Google Scholar

EDUCATION

PhD, in Mechanics of Biosystems Engineering (*Renewable Energies***)**
Tarbiat Modares University (TMU), Tehran, Iran | 2009–2014

MSc, in Mechanics of Biosystems Engineering (*Energy and Postharvest***)**
Tarbiat Modares University (TMU), Tehran, Iran | 2007–2009

BSc, in Agricultural Machinery (*now Biosystems Engineering***)**
Bu-Ali-Sina University, Hamedan, Iran | 2002–2006

ACADEMIC AND RESEARCH POSITIONS

2023-2025

Experienced Researcher (Alexander von Humboldt Fellow)

- Fraunhofer Institute for Solar Energy Systems ISE, Freiburg, Germany

2016-2023

Associate Professor

- Department of Mechanics of Biosystems Engineering

- Department of Renewable Energy, 2018–2023
  Tarbiat Modares University (TMU), Tehran

2022-2023
Visiting Scholar
- Ministry of Industry, Mine, and Trade, Office of Agricultural and Mining Machinery, Iran

2019-2020
Visiting Scholar
- Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany

2014-2016
Sessional Lecturer
- Department of Mechanics of Biosystems Engineering, TMU, Tehran, Iran

Postdoctoral Research Fellow
- Renewable Energy Research Institute (RERI), TMU, Tehran, Iran

FIELDS OF EXPERTISE AND INTEREST

Fields of Expertise
- Energy transition and renewable energy integration
- Solar energy in agriculture and food production systems
- Agrivoltaic technology; sustainable agri-food systems
- Solar thermal energy and thermal energy storage
- Solar photovoltaics; hybrid photovoltaic-thermal
- Solar-powered desalination and distillation technologies
- Modeling and simulation of energy systems
- Energy and exergy analysis

Research Interests
- Net-zero energy buildings (NZEB)
- Distributed energy resources (DER)
- Internet of Things (IoT) for energy management
- Modern agricultural machinery and farm robots

SOFTWARE SKILLS

Engineering and Simulation
- TRNSYS, POLYSUN
- TracePro, SolTrace
- PVsyst, PVCase, PVSOL
- SOLIDWORKS, AutoCAD
- ANSYS Fluent, ANSYS CFX

General and Analytical Software
- Microsoft Office Suite, Google Workspace
- SIGMAPLOT, SPSS
- Adobe Photoshop

- Mendeley

LANGUAGES

- **Persian/Farsi:** Native
- **English:** Advanced (C1 - CEFR)
- **German:** Intermediate (B1 - CEFR)

EXECUTIVE ACTIVITIES AND MEMBERSHIPS

Conference and Session Leadership

- **Co-Organizer**, "Advances in Solar Photovoltaics: Design, Reliability, Integration, Applications, and Sustainability" – IEEE SeFet 2025, MNIT Jaipur, India (*July 2025*)
- **Executive Committee Member**, International Conference on Clean Energy Technologies and Assessment (CETA2022), Katowice, Poland (2022)
- **Executive Committee Member**, International Conference on Recent Progress in Material Science and Mechanical Engineering (ICRPMSME), Gandhinagar, India (2021)
- **Executive Committee Member**, 13th Iranian National Congress on Biosystems Engineering and Mechanization, TMU, Tehran (2021)
- **Scientific Committee Member**, 13th Iranian National Congress on Biosystems Engineering and Mechanization, TMU, Tehran (2021)
- **Member**, Iran Chamber of Commerce, Industries, Mines, and Agriculture (ICCIMA), 2021–2022
- **Executive Manager and Editorial Board Member**, Student Journal *Meckabio*, Tarbiat Modares University (2016–2018)
- **Referee Committee Member**, *4th International Conference on Environmental Planning and Management*, University of Tehran, Iran – *May 2017*
- **Member**, Scientific-Student Association of Biosystems Mechanical Engineering, Tarbiat Modares University, Tehran, Iran (*2016–2017*)
- **Editorial Board Member and Executive Director**, *Student Journal "Meckabio"*, Biosystems Mechanical Engineering Association, Tarbiat Modares University, Iran — *2016–2017*

Professional Societies and Advisory Roles

- **Scientific Member**, International Solar Energy Society (ISES) (since 2024)
- **Member**, International Solar Energy Society (ISES) (since 2023)
- **Main Authorship Member**, IEA Task 13 Report – Subtask 2.2: Agrivoltaics (2024)
- **Expert Member**, Green Advisory Service for Sustainable Investment Support (since 2022)
- **Research Collaborator**, Renewable Energy Technologies Development Headquarters, Vice-Presidency for Science and Technology, Iran — Contributed to national projects on solar energy (2014–2017)

Institutional and Editorial Responsibilities

- **Deputy Director**, Renewable Energy Research Institute (RERI), TMU (2018–2023)
- **Research Council Member**, Faculty of Agriculture, TMU (2017–2021)
- **Management Committee Member**, Renewable Energy Engineering, Faculty of Interdisciplinary Science & Technology, TMU (2018–present)
- **Expert Reviewer**, Elsevier Energy Book Series (since 2021)

Student and Academic Advisory Roles

- **Advisor**, Student Scientific Association of Biosystems Mechanics, Tarbiat Modares University (2018–2021)

EDITORIAL ACTIVITIES

- **Managing Guest Editor**, *Feasibility, Efficiency, and Sustainability of Renewable Energy Applications in Agriculture*, *Sustainable Energy Technologies and Assessments* (Elsevier), 2021
- **Guest Editor**, *Sustainable Environmental Transition through Solar Thermal and Bioenergy (SET-STBE)*, *Environmental Science and Pollution Research* (Springer), 2021
- **Guest Editor**, *Advanced Applications of Solar Energy in Agricultural Greenhouses*, *Frontiers in Energy Research* (Frontiers), 2021
- **Guest Editor**, *Adoption of Renewable Energy Technologies (RETs) to Achieve Sustainability*, *Sustainability* (MDPI), 2021
- **Guest Editor**, *Emerging Renewable and Sustainable Energy Technologies*, *Sustainability* (MDPI), 2020

TEACHING EXPERIENCE

Tarbiat Modares University (TMU), Tehran, Iran
Lecturer and Associate Professor, 2014–2023 and 2025

PhD Courses

- Exergy
- Pinch Technology
- Special Topics in Renewable Energy

MSc Courses

- Potentiometric and Efficiency of Renewable Energies
- Advanced Measurement Systems Laboratory
- Advanced Thermodynamics
- Photovoltaics in Agriculture
- Environmental Impacts of Renewable Energies
- Design of Energy Systems
- Basics of Renewable Energies

Azad University of Roudehen, Tehran, Iran
Lecturer, 2009–2010

BSc Courses

- Physics and Mechanics of Agricultural Soils
- Basics of Mechanics of Agricultural Machinery

HONORS AND AWARDS

- **Alexander von Humboldt Fellowship Award**, Germany (2023–2025)
- **Highly Ranked Scholar (Top 0.05%, Energy Technology)** – ScholarGPS (2024)
- **World Ranking – Top 1% Scientists**, according to Scopus database (2025)
- **World Ranking – Top 2% Scientists**, according to Scopus database (2022–2024)

- **Research Excellence Recognition**, Tarbiat Modares University, Tehran, Iran — *December 2023 (Awarded for outstanding national and international contributions in research, technology, and scientific advancement.)*
- **Recognition as a Highly Cited Researcher (***Highly Cited Papers Award***)**, Tarbiat Modares University, Tehran, Iran — *December 2022 (Awarded at the university's Research and Technology Festival as one of the top 5% of researchers, determined by citation metrics.)*
- **Top 5% Researcher Recognition (***based on citation impact***)**, Tarbiat Modares University, Tehran, Iran — *December 2023 (Awarded at the university's Research and Technology Festival as one of the top 5% of researchers, determined by citation metrics.)*
- **Outstanding Researcher in Q1 ISI Publications**, Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran — *December 2022 (Awarded for producing the highest number of high-quality papers published in Q1-ranked ISI journals within the faculty.)*
- **Recognition as Distinguished Researcher** – Highest Research Score (Top 20%) for Promotion to Associate Professor, Tarbiat Modares University (2022)
- **Outstanding Researcher Award** – Recognized among the Top 5% for the Number of ISI Publications at Tarbiat Modares University, Faculty of Agriculture (2022; certificate issued December 2023).
- **Award-Winning Book**, recognized by Vice Chancellor for Research and Technology, Tarbiat Modares University (2021)
- **Award-Winning Book**, 3rd Festival of National Book of Agriculture and Natural Resources (2021)
- **Best Researcher Award**, Faculty of Agriculture, Tarbiat Modares University — Recognized for achieving the highest number of ISI-indexed publications (2021)
- **First Place**, *Novel Ideas in Evaporative Exploration in Brine Environments*, Geology and Mineral Exploration Organization of Iran (2017)
- **Postdoctoral Fellowship**, Tarbiat Modares University (2014)
- **Second Place**, *First Energy Ideas Award Festival*, Semnan University (2011)
- **Top-Ranked PhD Graduate**, Tarbiat Modares University (2014)
- **Top-Ranked MSc Graduate**, Tarbiat Modares University (2009)
- **Top-Ranked BSc Graduate**, Bu-Ali Sina University (2006)

WORKSHOPS AND PRESENTATIONS

Keynote & Plenary Talks

- **Keynote Speaker**, *International Conference on Energy, Environment, and Health Engineering (EEH2020)*, United Kingdom (2020)
- **Plenary Speaker**, *Innovative Applied Energy (IAPE 2019)*, Oxford, United Kingdom – "Point-focus Concentrating Solar Power Generation: Challenges and Prospects"
- **Plenary Speaker**, *Renewable and Sustainable Energy Conference*, Paris, France – "Solar Thermal Desalination Systems: Challenges and Prospects" (2018)

Invited Talks

- **Invited Speaker**, *Worldwide Energy Network – Distinguished Lecture Program of SERC 2022*, Solar Energy Research Center (FONDAP SERC Chile 15110019)
- **Invited Speaker**, *13th International Conference on Applied Energy*, organized by Elsevier (Nov 29 – Dec 2, 2021)

- **Invited Speaker**, *International Conference on Smart Advanced Material Science & Engineering Applications*, K L University, Guntur, India (2020)
- **Invited Speaker**, *GUJCOST-DST Webinar on Solar Energy Application in the Present Era*, Government Engineering College Patan, India (2020)
- **Invited Speaker**, *International Seminar on Photovoltaic Thermal Hybrid Solar Collectors: Principles and Techniques*, Guntur, India (2020)
- **Invited Speaker**, *Professional Seminar on Unconventional Water Resources*, Iran's Organization of Country's Water Resources Management – "Solar Thermal Desalination Systems" (2018)
- **Invited Speaker**, *Seminar on Food, Water, and Energy Nexus*, organized by SERA (NGO), Rasht, Iran (2018)
- **Invited Speaker**, *Presented research contribution on "Solar Desalination for Arid Regions",* Organized by Research Conference of Hamedan Regional Water Company, Iran (2019)
- **Invited Speaker**, National Workshop on *Utilizing Seas and Oceans for Water Supply in Iran*, organized by the National Water Adaptation Taskforce, Ministry of Energy and Ministry of Science, Tehran, Iran (March 2019).
- **Invited Speaker***, Solar Thermal Powered Desalination Technologies: Challenges and Prospects*, oral presentation at the *Annual Summit on Renewable & Sustainable Energy*, EuroSciCon, Paris, France, August 13–14, 2018.

Workshops & Training

- **Workshop Presenter**, *Applications of Photovoltaic Solar Energy Technology in the Agricultural Sector*, SATBA, Ministry of Energy, Tehran, Iran (2020)
- **Participant**, Workshop on *Introduction to Alexander von Humboldt Fellowship*, Tarbiat Modares University, Tehran, Iran (January 2019)
- **Photovoltaic Business Development Specialist** (*Blended Training on PV Business Models and Business Plans*), RENAC Renewables Academy, Berlin, Germany — *October 2018 – January 2019*
- **Trainer**, *Renewable Energy, Energy Efficiency, and PV Business Development Programs*, Renewables Academy AG (RENAC), Berlin, Germany (2018)
- **Trainer**, *Introduction to Power Systems (Online Program)*, RENAC, Berlin, Germany (2018)
- **Workshop Instructor**, *Mendeley Reference Manager Software*, Tarbiat Modares University, Tehran, Iran (2017 and 2018)
- **Instructor**, 3rd National "Harf-e-Hesab" Festival, Tarbiat Modares University, Tehran, Iran, Taught English to participating students (2018)
- **Instructor**, Training Course on *Renewable Energies*, Iranian Telecommunication Company (Hamadan Branch) in collaboration with Tarbiat Modares University (May 2017)
- **Workshop on Student Engagement and Cultural–Social Management**, Tarbiat Modares University, 2017 (Certificate of Participation/Recognition).
- **Polysun Designer Training Course**, Vela Solaris S.A., Tehran, Iran – *July 2017* (Certificate of completion for professional training on Polysun Simulation Software for solar energy systems)
- **Workshop on Internal Evaluation of Academic Departments**, organized by the Office of Supervision, Evaluation and Performance Optimization, Tarbiat Modares University, in collaboration with the National Organization for Educational Testing, Tehran, Iran — *February 2017.*
- **Seminar on Design and Construction of Utility-Scale Solar Power Plants**, Niroopars Company, Tehran, Iran — *November 2016*

PUBLICATIONS (JOURNAL PAPERS)

1) Keshavarzi, M., Najafi, Gh., Salahshoor, Khoshtaghaza, M. H., **Gorjian, Sh**., and Ghomi, H. A novel hybrid arc discharge–thermal method for sustainable brine treatment and resource recovery," *Results in Engineering*, vol. 27, art. 106521, 2025 (IF: 7.9).
2) Saadi, S., **Gorjian, Sh**., Ghobadian, B., Minaei, S. Synergistic water production by a combined atmospheric water generator and distillation powered by solar energy: a numerical analysis for Iran. *Results in Engineering*. 2025. 27; 106192 (IF: 7.9).
3) Ghorashi Oskouie, A., Dehghani Soufi, M., Khashehchi, M., **Gorjian, Sh**, Kermani, A. M. Numerical modeling of the greenhouse effluent desalination process using solar energy by a multi-effect method with HYSYS software. *Results in Engineering*. 2025. 27; 105892 (IF: 7.9).
4) Bahrami, H. R., **Gorjian, Sh**., Mokhtarzadeh, H., Ghobadian, B., Kuriqi, A., Gheisari, J. Performance evaluation of a solar-powered membrane capacitive deionization system considering energy recovery. *Results in Engineering*. 2025. 26; 105552 (IF: 7.9).
5) Adavi, M., **Gorjian**, **Sh**., Mokhtarzadeh, H., Ghobadian, B. Development and Performance Evaluation of an Indirect Fresnel Lens Solar Cooker with Thermal Oil Storage Tank. *Results in Engineering*. 2025. 26; 105535 (IF: 7.9).
6) Özdemir, Ö. E., Bretzel, T., Gfüllner, L., **Gorjian, Sh**., Katircioglu, Y., Dur, B., Trommsdorff, M. Design, Simulation, and Experimental Evaluation of an Agrivoltaic Greenhouse in Turkey. *Results in Engineering*. 2025. 26; 105278 (IF: 7.9).
7) Ashrafi, J., Mokhtarzadeh, H., **Gorjian, Sh**., Ghobadian, B. Experimental performance evaluation of a parabolic solar herbal extraction system: A comparative study with traditional methods. *Results in Engineering*. 2025. 26; 104809 (IF: 7.9).
8) Mokhtarzadeh, H., **Gorjian, Sh**., Minaei, S. Design, Development, and Evaluation of a low-cost Smart Solar-powered Weather Station for Use in Agricultural Environments. *Results in Engineering*. 2025. 26; 104848 (IF: 7.9).
9) Zainali, S., Ma Lu, S., Fernández-Solas, Á., Cruz-Escabias, A., F Fernández, E., Khalil Zidane, T. E., Honningdalsnes, E. H., Moe Nygård, M., Leloux, J., Berwind, M., Trommsdorff, M., Amaducci, S., **Gorjian, Sh**., Campana, P. E. Modelling, simulation, and optimization of agrivoltaic systems: a comprehensive review. *Journal of Applied Energy*. 2025. 386, 125558 (IF: 10.1).
10) Keshavarzi, M., Salahshoor, M., Najafi, G.H., Khoshtaghaza, M. H., **Gorjian, Sh**., Ghomi, H., Seyfi, P. Spatial Distributions of Chemical Species in a Pin-to-plate Dry Air Corona Discharge. *Plasma Chemistry and Plasma Processing*. 2025. 45, 873–918 (IF:2.6)
11) Shrestha, S., Shiva Parajuli, S., **Gorjian, Sh**., Rodriguez-Couto, S., J. Angove, M., Mainali, B., Raj Paudel, S. Scenario based techno-economic study of surplus hydropower-based urea production from cement plant flue-gas captured using piperazine-absorption. *Journal of Energy*. 2025. 315, 134463 (IF: 9).
12) Behruzian, M., Najafi, GH., Heugebaert, T., Rashidi, A., **Gorjian, Sh**., Banakar, A. High-performance shape-stabilized phase change material modified by bio-based nano porous graphene for electro-to-thermal and solar-to-thermal conversion and storage. *Journal of Energy Storage*. 2025. 107, 114946 (IF:9.4).
13) Fakhraei, O., **Gorjian, Sh**., Ghobadian, B., Najafi, G. H. Experimental Performance Evaluation of a Dual-purpose Photovoltaic-thermal System with Phase Change Material for Passive Heating and Cooling. *Journal of Building Engineering*. 2024. 98: 111494 (IF: 6. 7).
14) Aziznezhad, AH., **Gorjian, Sh**., Mokhtarzadeh, H. Design, development, and experimental evaluation of a concentrator agrivoltaic system with integrated spectrally splitting Fresnel lens. *Results in Engineering*. 2024. 24; 103119 (IF: 7.9).

15) Pirtaj Hamedani, H., **Gorjian, Sh**., Ghobadian, B., Mokhtarzadeh, H. Development and experimental performance evaluation of a small-scale aquavoltaic system for microalgae production. *Results in Engineering*. 2024. 24; 102919 (IF: 7.9).
16) Ma Lu, S., Amaducci, Sh., Gorjian, Sh., Haworth, M., Hägglund, C., Ma, T., Zainali, S., Campana, P. E. Wavelength-selective solar photovoltaic systems to enhance spectral sharing of sunlight in agrivoltaics. *Joule (Cell Press)*. 2024. 8 (9); 2483-2522 (IF: 46.048).
17) Shakouri, A., **Gorjian, Sh**., Ghobadian, B. Energy, exergy, and exergoeconomic (3E) evaluation of a hybrid multigeneration system based on a solar tower. *Journal of Applied Thermal Engineering*. 2024. 252; 123660 (IF: 6.1).
18) Ashrafi, J., **Gorjian, Sh**., Ghobadian, b. Thermal analysis of solar parabolic desalination system with point focus by computational fluid dynamics method (In Persian). *Journal of Agricultural Mechanization and Systems Research*. 2024. 24 (86); 1-20.
19) C Cheema, T. A., Javaid, H., Yildizhan, H., Tariq, M. H., Basharat, M. T., Subhani, Z. M., Fakhraei, O., **Gorjian, Sh**., Ahmadi, M. H., Pandey. Experimental and numerical investigation of a solar thermocline system for domestic water heating applications. *Journal of Thermal Analysis and Calorimetry*. 2024. Published online (IF:4.4).
20) Vaziri Rad, M. A; Forootan Fard, A; Khazanedari, K; Toopshekan, A; Ourang, Sh; Khanali, M; **Gorjian, Sh**; Fereidooni, L; Kasaeian, A. A global framework for maximizing sustainable development indexes in agri-photovoltaic-based renewable systems: Integrating DEMATEL, ANP, and MCDM methods. *Journal of Applied Energy*. 2024. 360; 122715. (IF:11.446).
21) Farvardin, M; Taki, M; **Gorjian, Sh**; Shabani, E; Sosa-Savedra, J. C. Assessing the Physical and Environmental Aspects of Greenhouse Cultivation: A Comprehensive Review of Conventional and Hydroponic Methods. *Sustainability*. 2024. 16 (3), 1273 (IF:3.889).
22) Hosseini, A; Banakar, A; **Gorjian, Sh**; Jafari, A. Experimental and numerical investigation of the melting behavior of a phase change material in a horizontal latent heat accumulator with longitudinal and annular fins. *Journal of Energy Storage*. 2024. 82, 110563 (IF:9.4)
23) Mokhtarzadeh, H; **Gorjian, Sh**. Design, simulation, and analysis of a solar parking carport Case study: parking lot of Tarbiat Modares University (Faculty of Agriculture)/In Persian. *Energy Engineering and Management*. 2023. 13(3), 128-143.
24) Ghorashi Oskouie, A., Khashehchi, M., Dehghani Soufi, M., **Gorjian, Sh**., Kermani, A. M. Design, modeling, and optimization of shell and tube exchangers in the thermal network of greenhouse effluent treatment. *Iranian Journal of Biosystem Engineering*. 2023. 54 (4), 19-28.
25) Karimi Yayshahri, E; **Gorjian, Sh**; Minaei, S. Experimental Performance Evaluation of a Hybrid Parabolic Solar Lighting System for Use in Agricultural Environments. *Energy Technology*. 2023. 11 (12); 2300546 (IF:3.8).
26) Parajuli, S., Bhattarai, T. N., **Gorjian, Sh**., Vithanage, M., Paudel, Sh. R. Assessment of potential renewable energy alternatives for a typical greenhouse aquaponics in Himalayan Region of Nepal. *Journal of Applied Energy*. 2023. 344, 121270 (IF:11.446).
27) **Gorjian, Sh**., Jalili Jamshidian, F., Gorjian, A., Faridi, H., Vafaei, M., Zhang, F., Liu, W., Campana, P. E. Technological advancements and research prospects of innovative concentrating agrivoltaics. *Journal of Applied Energy*. 2023. 337, 120799 (IF:11.446).
28) Mahdi, Sh., Asghari, A., Ghobadian, B., Dehghani Soufi, M., Satari, B., **Gorjian, Sh**., Khanian-Najaf-Abadi, M. Potential of Pistacia atlantica mutica (Baneh) oil as a biodiesel feedstock using ultrasonic-assisted intensification process. *Journal of Biofuels*. 2023. (IF:2.731).
29) Yildizhan, H., Yıldırım, C., **Gorjian, Sh**., Ameen, A. How May New Energy Investments Change the Sustainability of the Turkish Industrial Sector? *Sustainability*. 2023. 15(2), 1734 (IF:3.889).
30) Esmaeili Shayan, M., Najafi, Gh., Ghobadian, B., **Gorjian, Sh**. The role of digitalization in hybrid microgrids including renewable energy sources (In Persian). *Journal of Energy Planning and Policy Research*. 2022; 7;3, 1-30.

31) Bahadoran, K., Banakar, A., Khoshtaghaza, M. H., **Gorjian, Sh**. Simulating and Evaluating the Effects of Air Passing through a Linear Parabolic Solar Collector on Some Properties of Leaving Air. *Journal of Biomechanism and Bioenergy Research*. 2022. 1(2), 56-60.
32) Shayan, M. E., Najafi, G., Ghobadian, B., **Gorjian, Sh**., Mamat, R., & Ghazali, M. F. Multi-microgrid optimization and energy management under boost voltage converter with Markov prediction chain and dynamic decision algorithm. *Renewable Energy*. 2022 (IF:8.7).
33) Sangeetha, A., Shanmugan, S., and **Gorjian, Sh**. Experimental evaluation and thermodynamic Gibbs free energy analysis of a double-slope U-shaped stepped basin solar still using activated carbon with ZnO nanoparticles. *Journal of Cleaner Production*. 2022. 380(2); 135118 (IF:11.072).
34) Shearian Sattari, M., Ghobadian, B., **Gorjian, Sh**. A Critical Review on Life-Cycle Assessment and Exergy Analysis of Enomoto Bio-Gasoline Production. *Journal of Cleaner Production*. 2022. 379(1); 134387 (IF:11.072).
35) Prabu, A. S., Chithambaram, V., Sengottaiyan, Sh., Cavaliere, P., **Gorjian, Sh**., Aissa, A., Mourad, A., Pardhasaradhi, R., Muthucumaraswamy, P., Elsayed Essa, F. A., & Elsheikh, A. H., The performance enhancement of solar cooker integrated with photovoltaic module and evacuated tubes using ZnO/Acalypha Indica leaf extract: response surface study analysis. *Journal of Environmental Science and Pollution Research*. 2022; (IF:5.8).
36) Aggarwal, R. K., Chandel, Shyam Singh., **Gorjian, Sh**., Chandel, Rahul. Research outcome of sustainable solar drying technology dissemination for preserving perishable agriculture and horticulture crops in the North Western Himalayan region of India. *Sustainable Energy Technologies and Assessments*. 2022; 53: 102732 (IF:8).
37) Gorjian, A., Rahmati, E., **Gorjian, Sh**., Anand, A., D. Jathar, L. A Comprehensive Study of Research and Development in Concentrating Solar Cookers (CSCs): Design Considerations, Recent Advancements, and Economics. *Journal of Solar Energy*. 2022. 245; 80-107 (IF:6.7).
38) Aggarwal, R. K., Chandel, **Sh., Gorjian**, Sh., Chandel, R. Research Outcome of Sustainable Solar Drying Technology Dissemination for Preserving Perishable -Agriculture-Crops During Past 40 Years in a Himalayan Region of India. *Sustainable Energy Technologies and Assessments*. 2022; 53 (C): 102732 (IF:8).
39) Hesampour, R., Hasani, M., Yildizhan, H., Failla, S., **Gorjian, Sh**. Exergoenvironmental damages assessment in a desert-based agricultural system: A case study date production. *Agronomy Journal* (Wiley). 2022, 114 (6): 3155-3172 (IF:2.1)
40) Esmaeili Shayan, M., Najafi, Gh., Ghobadian, B., **Gorjian, Sh**., Mazlan, M. A novel approach of synchronization of the sustainable grid with an intelligent local hybrid renewable energy control. *International Journal of Energy and Environmental Engineering* (Springer Nature). 2023; 14: 35-46 (IF:2.6).
41) **Gorjian, Sh**., Fakhraei, O., Gorjian, A., Sharafkhani, A., Aziznejad, A. Sustainable Food, and Agriculture: Employment of Renewable Energy Technologies. *Current Robotics Reports* (Springer Nature). 2022; 3: 153–163.
42) Altouni, A., **Gorjian, Sh**., Rahmati, E. Numerical Investigation of the Effect of Using Nanofluid (Al_2O_3-Water) on Thermodynamic Performance of PV/T System (In Persian). *Journal of Research in Mechanics of Agricultural Machinery*. 2022. 11(1).
43) Esmaeili Shayan, M., Najafi, Gh., Ghobadian, B., **Gorjian, Sh**., Mazlan, M., Shabanzadeh, A. Flexible Photovoltaic System on Non-Conventional Surfaces: A Techno-Economic Analysis. *Sustainability*. 2022. 14(6), 3566 (IF:3.889).
44) Aggarwal, R. K., Chandel, Sh., **Gorjian, Sh**., Chandel, R. Research Outcome of Sustainable Solar Drying Technology Dissemination for Preserving Perishable -Agriculture-Crops During Past 40 Years in a Himalayan Region of India. *SSRN Electronic Journal*. 2022.

45) Esmaeili Shayan, M., Najafi, Gh., Ghobadian, B., **Gorjian, Sh**. Modeling the Performance of Amorphous Silicon in Different Typologies of Curved Building-integrated Photovoltaic Conditions. *Iranian (Iranica) Journal of Energy & Environment*, *13*(1), 87–97. 2022.
46) Bhattarai, T., Ghimire, S., Mainali, B., **Gorjian, Sh**., Treichel, H., R Paudel, Sh. Applications of Smart Grid Technology in Nepal: Status, Challenges, and Opportunities. *Journal of Environmental Science and Pollution Research*. 2022 (IF:5.8).
47) Esmaeili Shayan, M., Najafi, Gh., Ghobadian, B., **Gorjian, Sh**., Mazlan, M. Sustainable Design of a Near-Zero-Emissions Building Assisted by a Smart Hybrid Renewable Microgrid. *International Journal of Renewable Energy Development*. 2022; 11(2): 471-480.
48) **Gorjian, Sh**., Bousi, E., Emre Özdemir, Ö., Trommsdorff, M., Manoj Kumar, N., Anand, A., Kant, K., S. Chopra, S. Progress and challenges of crop production and electricity generation in agrivoltaic systems using semi-transparent photovoltaic technology. *Journal of Renewable and Sustainable Energy Reviews*. 2022; 158: 112126. (IF:16.799).
49) Ebadi, H., **Gorjian, Sh**., Sharon, H., Blanco-Galvez, J., Kumar, A. Investigation of design configurations and effective parameters on productivity enhancement of vertical diffusion solar stills. *International Journal of Environmental Science and Technology*. 2022; 19: 6889–6924 (IF:3.1).
50) Altouni, A, **Gorjian, Sh**., Banakar, A. Development and performance evaluation of a photovoltaic-powered induction cooker (PV-IC): An approach for promoting clean production in rural areas. *Cleaner Engineering and Technology*. 2022; 6: 100373.
51) Jalili Jamshidian, F., **Gorjian, Sh**., Shafieefar, M. Techno-economic assessment of a hybrid RO-MED desalination plant integrated with a solar CHP system. *Energy Conversion and Management*. 2022; 251: 114985 (IF:11.533)
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SUPERVISED PHD DISSERTATIONS

- **Omid Fakhraei** (2024)
  Design, simulation, fabrication, and evaluation of a passive air-based combined heating–cooling photovoltaic-thermal (PVT) system integrated with phase change material
- **Sajad Saadi** (expected 2025)
  Modeling and construction of a drinking water production system based on the Peltier effect and multi-effect vertical diffusion distillation, powered by a photovoltaic-thermal (PVT) system
- **Kazem Kermani** (expected 2025)
  Design, fabrication, and evaluation of a solar variable-pressure humidification–dehumidification desalination system with thermodynamic and economic analysis

SUPERVISED MSC THESIS

- **Yasin Sharifi (2025)**
  Technical and Economic Feasibility of Implementing Agrivoltaic Technology in Iran: Examining Five Regions Considering Diverse Climates
- **Mohammad Javad Hamzeh** (2024)
  Design and evaluation of a solar thermoelectric cooling system for a greenhouse
- **Fatemeh Nasri Nasrabadi** (2024)
  Design and simulation of an agrivoltaic array based on a solar concentrator photovoltaic (CPV) module and flat waveguide
- **Amin Momeni** (2024)
  Modeling, simulation, and performance evaluation of a marine aquavoltaic system
- **Yaghoub Molaei** (2024)
  Design, fabrication, and evaluation of a natural daylight supply and conduction system
- **Hamed Mokhtarzadeh** (2024)
  Design, fabrication, and evaluation of a smart portable solar-powered weather station
- **Javad Ashrafi** (2024)
  Development of a distillation system based on a point-focus parabolic solar concentrator to produce herbal extracts
- **Amirhossein Aziznejad** (2024)
  Design, fabrication, and assessment of an agrivoltaic system based on a solar concentrating photovoltaic (CPV) module using a point-focus Fresnel lens for co-generation of electricity and agricultural product
- **Atabak Shakouri** (2023)
  Energy, exergy, and exergoeconomic analysis of a multigeneration system for cooling, heating, freshwater, and hydrogen production based on a solar tower
- **Masoud Adavi** (2023)
  Design, construction, and evaluation of a solar cooker equipped with a Fresnel lens

- **Hamidreza Bahrami** (2022)
  Design and fabrication of an energy recovery system for a membrane capacitive deionization module and assessment of photovoltaic-powered capability
- **Ehsan Karimi** (2021)
  Design and development of a hybrid solar lighting system using optical fibers and photovoltaic cells
- **Shahdad Kamfirouzi** (2021)
  Design, construction, and evaluation of a desalination system equipped with a wheel atomizer for integration with a solar power system
- **Meysam Mehrvalipour** (2021)
  Design, development, and evaluation of a stand-alone CPVT-hydrogen system for power, heat, and hydrogen production
- **Armin Altouni** (2020)
  Design and development of a solar PV-powered cooker with induction heating for rural applications.
- **Ali Babaei Bazaz** (2020)
  Performance evaluation of an MSF desalination system integrated with a parabolic dish concentrator
- **Sina Eterafi** (2020)
  Design, development, and evaluation of a parabolic dish concentrator and simulation of a thermal concentrating solar power plant

RESEARCH GRANTS AND PROJECTS

- **Principal Investigator (PI)** – *Photon-Optimized Aquavoltaic Reactor (POAR): Spectral Splitting and Waveguide-Integrated Photobioreactors for Biohydrogen and Electricity Co-Generation*
  ERC Advanced Grant 2025 – Under Review
- **Co-Principal Investigator (Co-PI)** – *Integrated Multigeneration Hybrid PV-X Technologies for Sustainable Agricultural Food Production: Spectral Harvest*
  Funded by **UKRI Ayrton Challenge Programme** – *Under Review*
- **Co-Principal Investigator (Co-PI)** – *Smart & Intelligent Irrigation Using PVT Energy Applications for Sustainable Agriculture*
  Funded by **PRIMA Project** – *Under Review*
- **Principal Investigator (PI)** – *Agrivoltaics for Arid Regions: A Roadmap for Sustainable Energy–Food Systems in Iran*
  Internationally funded by **Alexander von Humboldt Foundatio**n, Germany – *Completed 2025*
- **Principal Investigator (PI)** – *Solar–biomass-powered plant for co-generation of electricity and freshwater to supply cultivation environments in coastal areas of Oman*
  International Project – *Ongoing (Started 2024)*
- **Principal Investigator (PI)** – *Development of a solar-powered membrane capacitive deionization system*
  Funded by **Iran National Science Foundation (INSF)** – *Completed 2023*
- **Principal Investigator (PI)** – *Development of a stand-alone spray-assisted solar thermal desalination system*
  Joint Project between **Iran and India** – *Completed 2020*

- **Principal Investigator (PI)** – *Design and development of a hybrid MED-RO desalination system using a solar CHP system for drinking water production*
  Funded by **Semnan Regional Water Company, Iran** – *Completed 2019*