

CV Date

09/06/2025

Part A. PERSONAL INFORMATION

First Name	Judit		
Family Name	García Ferrero		
Sex	Female	Date of Birth	24/06/1995
ID number Social Security, Passport			
URL Web	https://diarium.usal.es/termodinamica/about-our-group/people/		
Email Address	jgferrero@usal.es		
Open Researcher and Contributor ID (ORCID)	0000-0001-7154-5778		

A.1. Current position

Job Title	Substitute Professor		
Starting date	2024		
Institution	Universidad de Salamanca		
Department / Centre	Department of Applied Physics / Higher Polytechnic School of Zamora		
Country		Phone Number	
Keywords	Classic thermodynamic, transference of the heat; Solar energy; Thermodynamics; Solar thermic generation		

A.2. Previous positions (Research Career breaks included)

Period	Job Title / Name of Employer / Country
2022 - 2024	Research Fellow / Universidad de Salamanca
2020 - 2021	Secondary Education teacher / Fundación Educativa Santísima Trinidad
2020 - 2020	Management Technician / FUNDACION GENERAL DE LA UNIVERSIDAD DE SALAMANCA
2019 - 2019	Advanced Technician / FUNDACION GENERAL DE LA UNIVERSIDAD DE SALAMANCA

A.3. Education

Degree/Master/PhD	University / Country	Year
Applied Physics and Technology	University of Salamanca	2023
Master's in secondary teacher training, vocational training and languages.	University of Salamanca	2020
Master's Degree in Physics and Mathematics (specialization in Applied Physics)	University of Salamanca	2019
Bachelor's Degree in Physics	University of Salamanca	2018

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (n° x / n° y): position / total authors. If applicable, indicate the number of citations

- Scientific paper.** Rodríguez, E; García-Ferrero, J; Sánchez-Aparicio, M; et al; Medina, A.2024. Validation of a 3D Local-Scale Adaptive Solar Radiation Model by Using Pyranometer Measurements and a High-Resolution Digital Elevation Model. Sensors. MDPI. 24-1823. ISSN 1424-8220. <https://doi.org/10.3390/s24061823>

- 2 **Scientific paper.** J. García Ferrero; R.P. Merchán; M.J. Santos; A. Medina; A. Clavo-Hernández; P. Canhoto; A. Giostri. 2023. Modeling a solar pressurized volumetric receiver integrated in a parabolic dish: Off-design heat transfers, temperatures, and efficiencies. *Energy Conversion and Management*. Elsevier. 293-117436.
- 3 **Scientific paper.** J. García-Ferrero; R.P. Merchán; M.J. Santos; A. Medina; A. Calvo-Hernández. 2022. Brayton technology for Concentrated Solar Power plants: Comparative analysis of central tower plants and parabolic dish farms. *Energy Conversion and Management*. Elsevier. 271-116312. ISSN 0196-8904. <https://doi.org/10.1016/j.enconman.2022.116312>
- 4 **Scientific paper.** J. García-Ferrero; R.P. Merchán; J.M.M. Roco; A. Medina; M.J. Santos. 2021. Towards a Sustainable Future through Renewable Energies at Secondary School: An Educational Proposal. *Sustainability*, Special Issue "Hands-On Science: Developing a Sustainable Education System". MDPI. 13-22. <https://doi.org/10.3390/su132212904>
- 5 **Scientific paper.** R.P. Merchán; M.J. Santos; J. García-Ferrero; A. Medina; A. Calvo. 2021. Thermo-economic and sensitivity analysis of a central tower hybrid Brayton solar power plant. *Applied Thermal Engineering*. Elsevier. 186-116454. ISSN 1359-4311.
- 6 **Scientific paper.** J. García-Ferrero; I. Heras; M.J. Santos; R.P. Merchán; A. Medina; A. González; A. Calvo. 2020. Thermodynamic and Cost Analysis of a Solar Dish Power Plant in Spain Hybridized with a Micro-Gas Turbine. *Energies*. MDPI. 13-5178. ISSN 1996-1073.
- 7 **Review.** (1/4) J. García-Ferrero (AC); M.J. Santos; A. Medina; A. Calvo-Hernández. 2025. Promising research trends for solar parabolic dish collectors. *Applied Thermal Engineering*. Elsevier. 126934.

C.2. Conferences and meetings

- 1 J. García Ferrero; R. P. Merchán; M.J. Santos; A. Medina; A. Calvo-Hernández. Synthetic solar fuel production via concentrated solar thermal energy. 14th National and 5th International Conference in Engineering Thermodynamic. University of Zaragoza. 2025. Spain.
- 2 Solar Parabolic Dishes for the Production of Solar Synthetic Fuels. 30th conference on Concentrating Solar Power and Chemical Energy Systems (SolarPACES). International Energy Agency (IEA) - SolarPACES Team. 2024. Italy. Participatory - oral communication. Conference.
- 3 Sensitivity analysis of a pressurized solar volumetric receiver: heat transfer fluids and pressure ratio comparison. 37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems. National Technical University of Athens & Cyprus University of Technology. 2024. Greece. Participatory - oral communication. Conference.
- 4 J. García-Ferrero; R.P. Merchán; M. J. Santos; A. Medina; A. Calvo Hernández. INFLUENCIA DE VARIOS FLUIDOS DE TRABAJO EN LA EFICIENCIA DE UN RECEPTOR SOLAR VOLUMÉTRICO PRESURIZADO. XIX Congreso Ibérico y XV Congreso Iberoamericano de Energía Solar. UNIVERSIDAD DE ÉVORA, la UIB (Universitat de les Illes Balears) y AEDES (Asociación Española de Energía Solar). 2024. Portugal. Participatory - oral communication. Conference.
- 5 J. García Ferrero; R.P. Merchán; M.J. Santos; A. Medina; A. Calvo Hernández; P. Canhoto; A. Giostri. Modelling a solar volumetric receiver coupled to a parabolic dish: Heat transfer analysis. 13th National and 4th International Conference in Engineering Thermodynamics. Universidad Jaime I. 2023. Spain. Participatory - oral communication. Conference.
- 6 J. García Ferrero; R. P. Merchán; M.J. Santos; A. Medina; A. Calvo- Hernández; P. Canhoto; A. Giostri. Solar volumetric receiver coupled to a parabolic dish: heat transfer and thermal efficiency analysis. 36TH INTERNATIONAL CONFERENCE ON EFFICIENCY, COST, OPTIMIZATION, SIMULATION AND ENVIRONMENTAL IMPACT OF ENERGY SYSTEMS. Universidad de las Palmas de Gran Canaria. 2023. Spain. Participatory - oral communication. Conference.

- 7 Judit; Rosa Pilar; María Jesús; Alejandro; Antonio. Brayton cycle coupled to CSP plants: comparative analysis of central tower and parabolic dish farms. XXXVIII Reunión Bienal de la RSEF. Universidad de Murcia. 2022. Spain. Participatory - oral communication. Conference.
- 8 Judit; Rosa Pilar; María Jesús; Alejandro; Antonio. Thecno-economic analysis of Brayton concentrated solar power systems in the context of other power generation technologies. 35th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS'22). Technical University of Denmark (DTU). 2022. Denmark. Participatory - oral communication. Conference.
- 9 Judit; Rosa Pilar; María Jesús; Alejandro; Antonio. CSP plants performing a Brayton cycle: comparative analysis of central tower and parabolic dish farms. XII National and y III International Conference on Engineering Thermodynamics. Universidad Carlos III de Madrid. 2022. Spain. Participatory - oral communication. Conference.
- 10 M.J. Santos; R.P. Merchán; J. García-Ferrero; A. Medina; A. Calvo Hernández. Energía termosolar eficiente y rentable en diferentes zonas climáticas: Discos parabólicos termosolares híbridos. VIII Jornadas de Investigadoras de Castilla y León: La aventura de la Ciencia y la Tecnología. Universidad de León. 2022. Spain. 'Participatory - poster. Conference.
- 11 M. J. Santos; R.P. Merchán; J. García-Ferrero. Eficiencia energética, sostenibilidad y Termodinámica. VII Jornadas de Investigadoras de Castilla y León: La Aventura de la Ciencia y la Tecnología. Universidad de Valladolid. 2021. Spain. 'Participatory - poster. Conference.
- 12 R.P. Merchán; J. García-Ferrero; M.J. Santos; A. Medina; A. Calvo-Hernández. Thermo-economic Study of two CSP Geometries at Different Latitudes. SolarPaces2021 Solar Power & Chemical Energy Systems. 2021. 'Participatory - poster. Conference.
- 13 J. García-Ferrero; R.P. Merchán; M.J. Santos; A. Medina; A. González; A. Calvo-Hernández. Hybrid Brayton termosolar plants at different latitudes and different power scales. 34rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, ECOS'21. 2021. Italy. Participatory - oral communication.
- 14 J. García-Ferrero; S. Martín; I. Heras; et al; A. González. Energía distribuida: Discos parabólicos termosolares híbridos y optimización multiobjetivo. VI Jornadas de Investigadoras de Castilla y León: La Aventura de la Ciencia y la Tecnología. 2020. Spain. Participatory - oral communication. Workshop.
- 15 J. García-Ferrero; I. Heras; M.J. Santos; R.P. Merchán; A. Medina; A. Calvo-Hernández. Thermosolar hybrid parabolic dishes running a Brayton-like cycle and fueled with biogas.. 33rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, ECOS'20. 2020. Japan. Participatory - oral communication.
- 16 Irene; Judit; María Jesús; Rosa; Alejandro. Thermo-economic study of hybrid parabolic dish solar power plants in different regions of Spain. Proceedings of the 32nd International Conference on efficiency, Cost, Optimization, Simulation and Environmental impact on Energy Systems (ECOS'19). Institute of thermal technology. 2019. Poland. Participatory - oral communication. Conference.
- 17 J. García-Ferrero; I. Heras; R.P. Merchán; M.J. Santos; J. Gómez-Ayala; A. Calvo-Hernández. Distributed energy: the challenge of solar parabolic dishes. II JORNADAS DE JÓVENES INVESTIGADORES – INNOVA SALAMANCA. Investigadores No Valorados, INNOVA, (miembros de FJI-Precarios). Asociación de jóvenes investigadores de la Universidad de Salamanca. 2019. Spain. Participatory - oral communication.
- 18 J. García-Ferrero; I. Heras; R.P. Merchán; M.J. Santos; J. Gozález-Ayala; A. Calvo-Hernández. Distributed energy: the challenge of solar parabolic dishes. XXXVI Reunión Bienal de la Real Sociedad Española de Física, organizado por la Real Sociedad Española de Física. 2019. Spain. Participatory - oral communication.

- 19 I. Heras; J. García-Ferrero; M.J. Santos; R.P. Merchán; A. Medina; A. Calvo-Hernández. Hybrid parabolic-type thermosolar gas-turbine power plants: working fluid analysis. SolarPaces2019 Solar Power & Chemical Energy Systems. 2019. Participatory - oral communication.

C.3. Research projects and contracts

- 1 **Project.** PID2023-147201OB-I00, Integración de la dinámica de sistemas packed-bed en almacenamiento energético mediante sistemas de bombas a alta temperatura. Proyectos Generación de Conocimiento from the Spanish Ministry of Science, Innovation and Universities. Alejandro Medina. (Universidad de Salamanca). 01/09/2024-31/08/2027. 62.500 €. Team member.
- 2 **Project.** GIRLS: Generación para la innovación, resiliencia, liderazgo y sostenibilidad. ¡Que empiece el juego!. María Araceli Queiruga Dios. (Comisión Europea). 01/09/2022-31/08/2025. 98.400 €.
- 3 **Project.** Evaluación de sistemas de almacenamiento térmico aplicados a condiciones locales para el aprovechamiento eficiente de fuentes renovables.. (Fundación 'MEMORIA SAMUEL SOLÓRZANO BARRUSO). 01/01/2024-31/12/2024. 1.200 €.
- 4 **Project.** Planta de concentración termosolar de disco parabólico con ciclo Brayton híbrida para generación distribuida de energía (BraySolDish). (Universidad de Salamanca). 14/06/2019-15/10/2020. 8.000 €.
- 5 **Project.** Generación limpia y eficiente de energía eléctrica y térmica a pequeña escala: discos parabólicos termosolares híbridos. (Universidad de Salamanca). 19/12/2018-15/10/2020. 10.000 €.
- 6 **Contract.** Planta de concentración termosolar de disco parabólico con ciclo Brayton híbrida para generación distribuida de energía/ Parabolic solar dish thermosolar plant coupled to a hybrid Brayton cycle for distributed generation (BraySolDish) FUNDACION GENERAL DE LA UNIVERSIDAD DE SALAMANCA. 01/06/2020-01/10/2020.
- 7 **Contract.** Generación limpia y eficiente de energía eléctrica y térmica a pequeña escala: discos parabólicos termosolares híbridos / Small scale clean and efficient electric and thermal energy generation: hybrid thermosolar parabolic dishes FUNDACION GENERAL DE LA UNIVERSIDAD DE SALAMANCA. 01/09/2019-31/12/2019.