

Guillermo Zaragoza – CV

Address: Plataforma Solar de Almería, Carretera de Senes s/n
04200 Tabernas-Almería (Spain)
E-mail: guillermo.zaragoza@psa.es
http:// www.psa.es
Phone: (+34) 699199718
Date of birth: 13 December 1968
Place of birth: Almería, Spain
Nationality: Spanish

Academic Education

- 1990 First Certificate in English by the University of Cambridge (United Kingdom).
- 1991 Degree in Physics by the Complutense University (Madrid). Dept. Astrophysics.
- 1996 Ph.D. by the University of Granada (Spain). Dept. of Applied Physics.

Professional experience

- 1992-1996 Instituto de Astrofísica de Andalucía (**Spanish National Research Council**).
Pre-doctoral position.
- 1997-1998 **University of Oxford** (UK). Dept. Atmospheric, Oceanic and Planetary Physics.
Post-doctoral position.
- 1999-2000 Instituto de Astrofísica de Andalucía (**Spanish National Research Council**).
Post-doctoral position.
- 01/2001-06/2006 **Cajamar Cooperative Bank** in Almería (Spain).
Head of Research and Advisor in Solar Energy applications.
- 07/2006-12/2008 **Fundación Cajamar** (created by Cajamar Cooperative Bank) in Almería (Spain).
Head of Research and Advisor in Renewable Energy applications.
- 01/2009-06/2009 **University of Almería** (Spain).
Senior Researcher. Responsible of Coupling Solar Power with Desalination.
- 06/2009-06/2011 **CIEMAT - Plataforma Solar de Almería**.
Senior Researcher. Department “Environmental Applications of Solar Energy”.
- 06/2011-08/2011 **AICIA (School of Engineering of University of Sevilla)**.
Senior Researcher. Solar Desalination group.
- 09/2011-04/2018 **CIEMAT - Plataforma Solar de Almería**.
Senior Researcher. Solar Desalination Department.
- 04/2014-now **CIESOL (Joint Centre CIEMAT – University of Almería)**.
Principal Investigator of the Department “Photosynthesis and Desalination”.
- 05/2018-09/2018 **Solar Energy Institute, Deutsches Zentrum für Luft- und Raumfahrt (DLR)**.
Senior Researcher. Applications of solar energy to desalination.
- 10/2018-12/2020 **CIEMAT - Plataforma Solar de Almería**.
Distinguished Researcher. Solar Desalination Department.
- 01/2021-12/2024 **CIEMAT - Plataforma Solar de Almería**.
Scientific Researcher. Head of Solar Thermal Applications Department.
- 01/2025-now **CIEMAT - Plataforma Solar de Almería**.
Director.

Professional Appointments

- 2013-2020 Coordinator of the Renewable Energy Desalination Action Group on the European Innovation Partnership on Water of the European Commission.
- 2014-now Leader of the Working Group “Renewable Energy and Desalination”.in the European Technology Platform for Water (Water Europe).
- 2016-2020 Director of the European Desalination Society.
- 2019-now Ambassador of Water Europe (formerly WssTP).
- 2021-now Head of Solar Thermal Applications R&D Unit at Plataforma Solar de Almería
- 2022-now Director of the Living Lab “Sustainable Desalination” at Plataforma Solar de Almería
- 2023-now Spanish representative in the ExCo of the TCP “Heat Pumping Technologies” of the IEA.

Selected supervision works

- Doctoral Thesis: **A study of dynamic operation in solar-powered membrane distillation at pilot scale**. PhD student: Alejandro Bueso Sánchez. University of Almería, Department of Chemical Engineering; ongoing
- Doctoral Thesis: **Evaluation of batch operation in pilot-scale membrane distillation modules for brine concentration powered by solar energy**. PhD student: Isabel Requena Requena. University of Almería, Department of Chemical Engineering; ongoing
- Master Thesis: **Characterization of a membrane distillation system for desalination brine concentration with solar energy**. Alan Carlos Adrián Giocoli. Master in Solar Energy, University of Almería, 2024.
- Master Thesis: **Characterization of a multi-effect membrane distillation pilot plant for application for limestone mining**. Robinson Johan Ramírez Gil. Master in Solar Energy, University of Almería, 2022.
- Master Thesis: **Solar installation design (solar thermal + photovoltaic) for membrane distillation**. Carla Sofia Sagredo Molina. Master in Solar Energy, University of Almería, 2022.
- Master Thesis: **Design of a solar cooling system and study of CO₂ needs in a closed greenhouse**. Miguel Ángel Ruiz Baena. Master in Solar Energy, University of Almería, 2020.
- Doctoral Thesis: **Evaluation of the use of vacuum in advanced pilot-scale membrane distillation modules powered by solar energy for the desalination of seawater and brines**. PhD student: Juan Antonio Andrés Mañas. University of Almería, Department of Chemical Engineering; 5th February 2020
- Master Thesis: **Evaluation of membrane distillation modules powered by solar thermal energy**. Michele de Santis. Università Politecnica delle Marche (Italy), 2018.
- Master Thesis: **Experimental Characterisation & Modelling of a Membrane Distillation module coupled to a flat plate solar collector field**. David D'Souza. University of Dalarna (Sweden), 2018.
- Master Thesis: **Optimization of the operation of a membrane desalination system using solar energy**. Isabel María Requena Requena. Master in Chemical Engineering, University of Almería, 2018.
- Doctoral Thesis: **Evaluation of commercial spiral Membrane Distillation systems and their application to water treatment**. PhD student: Alba Ruiz Aguirre. University of Almería, Department of Chemical Engineering; 4th July 2017
- Master Thesis: **Assessment of the effect of increased salinity on vacuum membrane distillation**. Christian Rath. Technical University of Munich (Lehrstuhl für Thermodynamik), 2016.
- Doctoral Thesis: **Evaluation of the coupling of multi-effect distillation plants to solar thermal plants**. PhD student: Patricia Palenzuela Ardila. University of Almería, Department of Chemical Engineering; 16th July 2012

Selected Technical Assistances, Scientific and Technological Research Projects

- Technical assistance to Asian Development Bank, TA 7846-UZB: **Design and Strengthening of the Solar Energy Institute in Uzbekistan** (Contract No. S73575); 2011.
- Scientific consultant in project: “**GIS-Based Graphical User Interface Tools for Analyzing Solar Thermal Desalination Systems & High-Potential Implementation**”; financed by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (DOEEERE) under the Solar Energy Technologies Office (SETO), Award Number DE-EE0008401. 2018-2021.
- Scientific consultant in project: “**Forward Osmosis Seawater Pretreatment for High Performance Thermal Desalination Plants**”; financed by Qatar National Research Fund (QNRF) and coordinated by Qatar University, contract: NPRP –10-0117-170176. 2018-2021.
- Scientific responsible of CIEMAT in project: “**“Sustainable drinking and irrigation water production from saline alternative water resources (SALTEAU)”**”, financed by the European Commission programme LIFE-PJG, contract: 101148475. Coordinated by Aqualia (Spain). 2024-2028.
- Scientific responsible of CIEMAT in project: “**Sustainable membrane distillation for industrial water reuse and decentralised desalination approaching zero waste (MELODIZER)**”; financed by the European Commission programme Horizon Europe under topic HORIZON-CL4-2022-RESILIENCE-01, contract: 101091915. Coordinated by Politecnico di Torino (Italy). 2022-2026.
- Scientific responsible of CIEMAT in project: “**European Twinning for research in Solar energy to water production and treatment technologies (SOL2H2O)**”; financed by the European Commission programme Horizon Europe under topic HORIZON-WIDERA-2021-ACCESS-03-01, contract: 101079305. Coordinated by University of Évora (Portugal). 2022-2025.
- Scientific responsible of CIEMAT in project: “**Intelligent water treatment technologies for water preservation combined with simultaneous energy production and material recovery in energy intensive**

industries (Intelwatt)”; financed by the European Commission programme Horizon 2020 under topic SPIRE-01-07-2020 (call: H2020-LCCI-2020-EASME-singlestage), contract: 958454. Coordinated by NCRS “Demokritos” (Greece). 2020-2024.

- **Scientific responsible** of CIEMAT in project: “**Next generation water-smart management systems: large scale demonstrations for a circular economy and society (Water-Mining)**”; financed by the European Commission programme Horizon 2020 under topic H2020-SC5-2019-2, contract: 869474. Coordinated by T.U. Delft (Netherlands). 2020-2024.

- **Scientific responsible** of CIEMAT in project: “**Bio-mimetic and phyto-technologies designed for low-cost purification and recycling of water (INDIA-H2O)**”; financed by the European Commission programme Horizon 2020 under topic H2020-SC5-2018-2019-2020 (EU-INDIA). Coordinated by University of Birmingham (UK) with other partners from Netherlands, Israel and India. 2019-2024.

- **Scientific responsible** of CIEMAT in project: “**Resource recovery from industrial waste water by cutting edge membrane technologies (ReWaCEM)**”; financed by the European Commission programme Horizon 2020 under topic SPIRE-01-2016 (call: H2020-IND-CE-2016-17 Industry 2020 in the Circular Economy), contract: 723729. Coordinated by Fraunhofer-ISE (Germany) with other partners from Austria, Germany and Italy. 2016-2019.

- **Scientific responsible** of CIEMAT in project: “**Conversion of Low Grade Heat to Power through closed loop Reverse Electro-Dialysis**”; financed by the European Commission programme Horizon 2020 under topic LCE-01-2014 - New knowledge and technologies (call: H2020-LCE-2014-1-Stage2), contract: 640667. Coordinated by WIP Renewable Energy (Germany) with other partners from The Netherlands, Italy and Great Britain. 2015-2019.

- Scientific participation in project: “**Solar Twinning to Create Solar Research Twins (SOLARTWINS)**”; financed by the European Commission programme Horizon 2020 under topic H2020 WIDESPREAD-03-2018 TWINNING, contract: 856619. Coordinated by Middle East Technical University (Turkey). 2020-2023.

- Scientific participation in project: “**Solar Facilities for the European Research Area-Third Phase (SFERA III)**”; financed by the European Commission programme Horizon 2020 under topic H2020-INFRAIA-2018-2020, contract: 823802. Coordinated by CIEMAT (Spain). 2019-2023.

- Scientific participation in project: “**Solving Water Issues for CSP Plants (SOLWARIS)**”; financed by the European Commission programme Horizon 2020 under topic H2020-LCE-2017-RES-IA, contract: 792103. Coordinated by TSK (Spain). 2018-2022.

- Scientific participation in project: “**Integrating National Research Agendas on Solar Heat for Industrial Processes (INSHIP)**”; financed by the European Commission programme Horizon 2020 under topic H2020-LCE-2016-ERA, contract: 692259. Coordinated by Fraunhofer ISE (Germany). 2017-2020-

- Scientific participation in project: “**Scientific and Technological Alliance for Guaranteeing the European Excellence in Concentrating Solar Thermal Energy (STAGE-STE)**”; financed by the European Commission 7th Framework (subprogram EERA), contract: 609837. Coordinated by CIEMAT. 2014-2018.

List of journal publications:

1. López-Puertas, M., G. Zaragoza, B.J. Kerridge and F.W. Taylor. **Non-local thermodynamic equilibrium model for H₂O 6.3 and 2.7 μm bands in the middle atmosphere**. *Journal of Geophysical Research*, **100**, 9131-9147, 1995. *JCR 1997: IF=2.416 (4/104 Geosciences)* Q1
2. Goss-Custard, M., J.J. Remedios, A. Lambert, F.W. Taylor, C.D. Rodgers, M. López-Puertas, G. Zaragoza, M.R. Gunson, M.R. Suttie, J.E. Harries, and J.M. Russell III. **Measurements of Water Vapour Distribution by the Improved Stratospheric and Mesospheric Sounder: Retrieval and Validation**. *Journal of Geophysical Research*, **101**, 9907-9928, 1996. *JCR 1997: IF=2.416 (4/104 Geosciences)* Q1
3. López-Puertas, M., G. Zaragoza, M.Á. López-Valverde, F.J. Martín-Torres, G.M. Shved, R.O. Manuilova, A.A. Kutepov, O. Gusev, T. v. Clarmann, A. Linden, G. Stiller, A. Wegner, H. Oehlaf, D.P. Edwards, and J.-M. Flaud. **Non-local thermodynamic equilibrium limb radiances for the MIPAS instrument on Envisat-1**. *J. Quant. Spectrosc. Radiat. Transfer*, **59 3-5**, 377-403, 1998. *JCR 1998: IF=1.003 (23/35 Spectroscopy)* Q3
4. Manuilova, R.O., O.A. Gusev, A.A. Kutepov, T. v. Clarmann, H. Oehlaf, G. Stiller, A. Wegner, M. López-Puertas, F.J. Martín-Torres, G. Zaragoza, and J.-M. Flaud. **Modelling of Non-LTE limb spectra of IR ozone bands for the MIPAS space experiment**. *J. Quant. Spectrosc. Radiat. Transfer*, **59 3-5**, 405-422, 1998. *JCR 1998: IF=1.003 (23/35 Spectroscopy)* Q3
5. López-Puertas, M., G. Zaragoza, M.Á. López-Valverde, and F.W. Taylor. **Non-LTE atmospheric limb emission at 4.6 μm 1. An update of the CO₂ non-LTE radiative transfer model**. *Journal of Geophysical Research*, **103**, 8499-8513, 1998. *JCR 1998: IF=2.577 (7/111 Geosciences)* Q1

6. López-Puertas, M., G. Zaragoza, M.Á. López-Valverde, and F.W. Taylor. **Non-LTE atmospheric limb emission at 4.6 μm 2. An analysis of the daytime wideband radiances as measured by UARS/ISAMS.** *Journal of Geophysical Research*, **103**, 8515-8530, 1998. *JCR 1998: IF=2.577 (7/111 Geosciences)* Q1
7. Zaragoza, G., M. López-Puertas, A. Lambert, J.J. Remedios, and F.W. Taylor. **Evidences of non-LTE emission in the ISAMS water vapour channels.** *Advances in Space Research* **22**, 1513-1516, 1998. *JCR 1998: IF=0.623 (26/37 Astronomy & Astrophysics)* Q3
8. Zaragoza, G., M. López-Puertas, M. Á. López-Valverde, and F.W. Taylor. **The Detection of the Hydroxyl Nightglow Layer in the Mesosphere by ISAMS/UARS.** *Geophysical Research Letters*, **25**, 2417-2420, 1998. *JCR 1998: IF=2.290 (8/111 Geosciences)* Q1
9. Zaragoza, G., M. López-Puertas, A. Lambert, J.J. Remedios, and F.W. Taylor. **Non-local thermodynamic equilibrium in H₂O 6.9 μm emission as measured by the Improved Stratospheric And Mesospheric Sounder.** *Journal of Geophysical Research* **103**, 31293-31308, 1998. *JCR 1998: IF=2.577 (7/111 Geosciences)* Q1
10. Mlynczak, M.G., D.K. Zhou, M. López-Puertas, and G. Zaragoza. **Kinetic and spectroscopic requirements for the mesurement of mesospheric water vapor at 6.8 μm under non-LTE conditions.** *Geophysical Research Letters*, **26**, 63-66, 1999. *JCR 1999: IF=2.306 (8/114 Geosciences)* Q1
11. Zhou, D.K., M.G. Mlynczak, M. López-Puertas, and G. Zaragoza. **Evidence of non-LTE effects on the mesospheric water vapor observed by spectrally resolved transitional-emissions from CIRRIS-1A.** *Geophysical Research Letters*, **26**, 67-70, 1999. *JCR 1999: IF=2.306 (8/114 Geosciences)* Q1
12. Zaragoza, G., M. López-Puertas, M.Á. López-Valverde, and F.W. Taylor. **Global Distribution of CO₂ in the upper mesosphere as derived from UARS/ISAMS measurements.** *Journal of Geophysical Research* **105**, 19829- 19840, 2000. *JCR 2000: IF=2.680 (6/117 Geosciences)* Q1
13. Edwards, D.P., G. Zaragoza, M. Riese, and M. López-Puertas. **Evidence of H₂O non-local thermodynamic equilibrium emission near 6.4 μm as measured by cryogenic infrared spectrometers and telescopes for the atmosphere (CRISTA 1).** *Journal of Geophysical Research* **105**, 29003-29022, 2000. *JCR 2000: IF=2.680 (6/117 Geosciences)* Q1
14. Zaragoza, G., F.W. Taylor, and M. López-Puertas. **Latitudinal and longitudinal behaviour of the mesospheric OH nightglow layer as observed by the Improved Stratospheric and Mesospheric Sounder on UARS.** *Journal of Geophysical Research*, **106**, 8027-8034, 2001. *JCR 2001: IF=2.609 (8/117 Geosciences)* Q1
15. Zaragoza, G. **The nocturnal behavior of the hydroxyl layer as observed by ISAMS/UARS.** *Advances in Space Research*, **27**, 1691-1696, 2001. *JCR 2001: IF=0.462 (7/26 Eng. Aerospace)* Q2
16. Pérez-Parra, J.J., E.J. Baeza, G. Zaragoza, J.C. López, and J.I. Montero. **Modelling natural ventilation in a “parral” greenhouse with continuous flap vents using computational fluid dynamics and wind tunnel measurements.** *Acta Horticulturae*, **659**, Vol. 1, 135-142, 2004.
17. Buchholz, M., and G. Zaragoza. **A closed greenhouse for energy, water and food supply.** *Habitation, International Journal for Human Support Research* (anteriormente Life Support and Biosphere Sciences), **9** ^{3/4}, 116, 2004.
18. Buchholz, M., G. Zaragoza, P. Jochum, J. Pérez-Parra. **Concept for Water, Heat and Food Supply from a Closed Greenhouse – The Waterty Project.** *Acta Horticulturae*, **691**, 509-516, 2005.
19. Meca, D., J.C. López, J.C. Gázquez, E. Baeza, J. Pérez-Parra and G. Zaragoza. **Evaluation of Two Cooling Systems in Parral Type Greenhouses with Pepper Crops: Low Pressure Fog System vs Whitening.** *Acta Horticulturae*, **719**, 515-520, 2006.
20. Buchholz, M., R. Buchholz, P. Jochum, G. Zaragoza and J. Pérez-Parra. **Temperature and Humidity Control in the Watery Greenhouse.** *Acta Horticulturae*, **719**, 401- 408, 2006.
21. Zaragoza, G., Buchholz, M., Jochum, P. and Pérez-Parra, J. **Watery project: Towards a rational use of water in greenhouse agriculture and sustainable architecture.** *Desalination*, **211** (1-3), 296-303, 2007. *JCR 2007: IF=0.875 (51/114 Chem. Eng.)* Q2
22. Meca, D., López, J.C., Gázquez, J.C., Baeza, E., Pérez-Parra, J. and Zaragoza, G. **A comparison of three different cooling systems in parral type greenhouses in Almería.** *Spanish Journal of Agricultural Research* **5** (3), 285-292, 2007. *JCR 2007: IF=0.278 (19/35 Agriculture)* Q3
23. Zaragoza, G. and Buchholz, M. **Closed greenhouses for semi-arid climates: critical discussion following the results of the Watery prototype.** *Acta Horticulturae* **797**, 37-42, 2008.
24. Zaragoza, G., Buendía, D., Meca, D., Pérez-Parra, J. and Buchholz, M. **Experiences in cultivation inside the Watery prototype of a closed greenhouses for semi-arid regions.** *Acta Horticulturae*, **801**, 773-780, 2008.
25. Zhang, C., He, C., Zaragoza, G., Yan, D., Buendía, D., Zhao, Z. **Water saving efficiency of closed greenhouse based on evapotranspiration equilibrium.** *Nongye Gongcheng Xuebao/Transactions of the Chinese Society of Agricultural Engineering*, **26** (12), 259-264, 2010.
26. Palenzuela, P., D.C. Alarcón-Padilla, J. Blanco, E. Guillén, M. Ibarra and G. Zaragoza. **Modeling of the heat transfer of a solar multi-effect distillation plant at the Plataforma Solar de Almería.** *Desalination and Water Treatment*, **31**, 257-268, 2011. *JCR 2011: IF=0.614 (90/133 Chem. Eng.)* Q3

27. Guillén, E., J. Blanco, D. Alarcón, G. Zaragoza, P. Palenzuela, M. Ibarra. **Comparative evaluation of two membrane distillation modules.** *Desalination and Water Treatment*, **31**, 226-234, 2011. *JCR 2011: IF=0.614 (90/133 Chem. Eng.)* Q3
28. Guillén-Burrieza, E., J. Blanco, G. Zaragoza, D. Alarcón, P. Palenzuela, M. Ibarra, W. Gernjak. **Experimental analysis of an air gap membrane distillation solar desalination pilot system.** *Journal of Membrane Science*, **379**, 386-396, 2011. *JCR 2011: IF=3.850 (8/133 Chem. Eng.)* Q1
29. Palenzuela, P., G. Zaragoza, D.C. Alarcón-Padilla, E. Guillén, M. Ibarra and J. Blanco. **Assessment of different configurations for combined parabolic-trough solar power and desalination plants in arid regions.** *Energy*, **36**, 4950-4958, 2011. *JCR 2011: IF=3.487 (4/52 Thermodynamics)* Q1
30. Palenzuela, P., G. Zaragoza, D. Alarcón and J. Blanco. **Simulation and evaluation of the coupling of desalination units to parabolic-trough solar power plants in the Mediterranean region.** *Desalination*, **281**, 379-387, 2011. *JCR 2011: IF=2.590 (23/133 Chem. Eng.)* Q1
31. Guillén-Burrieza, E., G. Zaragoza, S. Miralles-Cuevas and J. Blanco-Gálvez. **Experimental evaluation of two pilot-scale membrane distillation modules used for solar desalination.** *Journal of Membrane Science*, **409-410**, 264-275, 2012. *JCR 2012: IF=4.093 (7/133 Chem. Eng.)* Q1
32. Abdurakhmanov, A.A., Kh.K. Zainutdinova, M.A. Mamatkosimov, M.S. Paizullakhanov and G. Zaragoza. **Solar technologies in Uzbekistan: State, priorities and perspectives of development.** *Applied Solar Energy*, **48** (2) 84-91, 2012.
33. Palenzuela, P., G. Zaragoza, D. Alarcón and J. Blanco. **Evaluation of cooling technologies of concentrated solar power plants and their combination with desalination in the mediterranean.** *Applied Thermal Engineering*, **50**, 1514-1521, 2013. *JCR 2013: IF=2.624 (6/55 Thermodynamics)* Q1 (46/837 Engineering) Q1
34. Palenzuela, P., D. Alarcón, G. Zaragoza, J. Blanco and M. Ibarra. **Parametric equations for the variables of a steady-state model of a multi-effect desalination plant.** *Desalination and Water Treatment*, **51** (4-6), 1229-1241, 2013. *JCR 2013: IF=0.987 (78/133 Chem. Eng.)* Q3 (237/837 Engineering) Q2
35. Blanco, J., P. Palenzuela, D. Alarcón-Padilla, G. Zaragoza and M. Ibarra. **Preliminary thermoeconomic analysis of combined parabolic trough solar power and desalination plant in port Safaga (Egypt).** *Desalination and Water Treatment*, **51** (7-9), 1887-1899, 2013. *JCR 2013: IF=0.987 (78/133 Chem. Eng.)* Q3 (237/837 Engineering) Q2
36. Palenzuela, P., L. Roca, G. Zaragoza, D. Alarcón-Padilla, L. García-Rodríguez, A. de la Calle. **Operational improvements to increase the efficiency of an absorption heat pump connected to a Multi-Effect Distillation unit.** *Applied Thermal Engineering*, **63** (1), 84-96, 2014. *JCR 2014: IF=2.739 (6/55 Thermodynamics)* Q1 (35/838 Engineering) Q1
37. Altaee, A., G. Zaragoza, H. Rost van Tonningen. **Comparison between Forward Osmosis-Reverse Osmosis and Reverse Osmosis processes for seawater desalination.** *Desalination* **336**, 50-57, 2014. *JCR 2014: IF=3.756 (12/135 Chem. Eng.)* Q1 (52/509 Chemistry) Q1
38. Palenzuela, P., A.S. Hassan, G. Zaragoza, D.-C. Alarcón-Padilla. **Steady state model for multi-effect distillation case study: Plataforma Solar de Almería MED pilot plant.** *Desalination*, **337**, 31-42, 2014. *JCR 2014: IF=3.756 (12/135 Chem. Eng.)* Q1 (52/509 Chemistry) Q1
39. Ibarra, M, A. Rovira, D.C. Alarcón-Padilla, G. Zaragoza, J. Blanco. **Performance of a 5 kWe Solar-only Organic Rankine Unit Coupled to a Reverse Osmosis Plant.** *Energy Procedia*, **49**, 2251-2260, 2014.
40. Altaee, A. and G. Zaragoza. **A Conceptual Design of Low Fouling and High Recovery FO-MSF Desalination plant.** *Desalination*, **343**, 2-7, 2014. *JCR 2014: IF=3.756 (12/135 Chem. Eng.)* Q1 (52/509 Chemistry) Q1
41. Altaee, A., G. Zaragoza, A. Sharif. **Pressure retarded osmosis for power generation and seawater desalination: Performance analysis.** *Desalination*, **344**, 108-115, 2014. *JCR 2014: IF=3.756 (12/135 Chem. Eng.)* Q1 (52/509 Chemistry) Q1
42. Zaragoza, G., A. Ruiz-Aguirre, E. Guillén-Burrieza. **Efficiency in the use of solar thermal energy of small membrane desalination systems for decentralized water production.** *Applied Energy*, **130**, 491-499, 2014. *JCR 2014: IF=5.613 (6/135 Chem. Eng.)* Q1 (16/838 Engineering) Q1
43. Guillen-Burrieza, E., A. Ruiz-Aguirre, G. Zaragoza, H.A. Arafat. **Membrane fouling and cleaning in long term plant-scale membrane distillation operations.** *Journal of Membrane Science*, **468**, 360-372, 2014. *JCR 2014: IF=5.056 (7/135 Chem. Eng.)* Q1 (31/509 Chemistry) Q1
44. Altaee, A., A. Sharif, G. Zaragoza, N. Hilal. **Dual stage PRO process for power generation from different feed resources.** *Desalination*, **352**, 118-127, 2014. *JCR 2014: IF=3.756 (12/135 Chem. Eng.)* Q1 (52/509 Chemistry) Q1
45. Palenzuela, P., G. Zaragoza, D.C. Alarcón-Padilla. **Characterisation of the coupling of multi-effect distillation plants to concentrating solar power plants.** *Energy*, **82**, 986-995, 2015. *JCR 2015: IF=4.292 (3/58 Thermodynamics)* Q1 (13/850 Engineering) Q1
46. Palenzuela, P., D.C. Alarcón-Padilla, G. Zaragoza, J. Blanco. **Comparison between CSP+MED and CSP+RO in Mediterranean area and MENA region: Techno-economic analysis.** *Energy Procedia*, **69**, 1938 – 1947, 2015.

47. Palenzuela, P., D.C. Alarcón-Padilla, G. Zaragoza. **Large-scale solar desalination by combination with CSP: Techno-economic analysis of different options for the Mediterranean Sea and the Arabian Gulf.** *Desalination* 366, 130-138, 2015. *JCR 2015: IF=4.412 (12/135 Chem. Eng.)* Q1 (48/520 Chemistry) Q1
48. Altaee, A., A. Sharif, G. Zaragoza, A.F. Ismail. **Evaluation of FO-RO and PRO-RO designs for power generation and seawater desalination using impaired water feeds.** *Desalination*, 368, 27-35, 2015. *JCR 2015: IF=4.412 (12/135 Chem. Eng.)* Q1 (48/520 Chemistry) Q1
49. Ruiz-Aguirre, A., D.-C. Alarcón-Padilla, G. Zaragoza. **Productivity analysis of two spiral-wound membrane distillation prototypes coupled with solar energy.** *Desalination and Water Treatment*, 55 (10), 2777-2785, 2015. *JCR 2015: IF=1.272 (74/135 Chem. Eng.)* Q3 (141/850 Engineering) Q1
50. Ruiz-Aguirre, A., M.I. Polo-López, P. Fernández-Ibáñez, G. Zaragoza. **Assessing the validity of solar membrane distillation for disinfection of contaminated water.** *Desalination and Water Treatment*, 55 (10), 2792-2799, 2015. *JCR 2015: IF=1.272 (74/135 Chem. Eng.)* Q3 (141/850 Engineering) Q1
51. Horta, P., G. Zaragoza, D.C. Alarcón-Padilla. **Assessment of the use of solar thermal collectors for desalination.** *Desalination and Water Treatment*, 55 (10), 2856-2867, 2015. *JCR 2015: IF=1.272 (74/135 Chem. Eng.)* Q3 (141/850 Engineering) Q1
52. A. Cipollina, E. Tzen, V. Subiela, M. Papapetrou, J. Koschikowski, R. Schwantes, M. Wiegand, G. Zaragoza. **Renewable energy desalination: performance analysis and operating data of existing RES desalination plants.** *Desalination and Water Treatment*, 55 (11), 3120-3140, 2015. *JCR 2015: IF=1.272 (74/135 Chem. Eng.)* Q3 (141/850 Engineering) Q1
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54. Zaragoza, G. **Renewable energy is the solution of the growing problems of energy and desalination.** *Journal of Desalination and Water Purification*, 1 (1): 1-2, 2015.
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Other relevant merits:

Teacher in the Master Course “Solar Energy” of the University of Almería (Spain), subjects: “Low temperature solar thermal energy”, “Solar energy and desalination”, “Solar energy and agriculture”, since 2017.

Judge of international prizes:

- “Oman Humanitarian Desalination Challenge”, organized by Middle East Desalination Research Centre, Ministry of Higher Education, Research & Innovation (Oman), and United States Agency for International Development (EEUU), 2018-2020.
- More Water Less Concentrate - Developing innovative solutions for inland desalination plants to reduce concentrate volumes and increase fresh water supplies in water short areas”, organized by United States Bureau of Reclamation (EEUU), 2017-2022.
- “The Desal Prize - A brackish water desalination technology competition”, organized by United States Agency for International Development (EEUU), Ministry of Foreign Affairs (Sweden) and United States Bureau of Reclamation (EEUU), 2014-2015.