



Part A. PERSONAL INFORMATION

CV date 20/05/2025

First and Family name	Mario Martín Gamboa		
Social Security, Passport, ID number	47454332L	Age	36
Researcher codes	Wos Researcher ID	G-3609-2018	
	SCOPUS Author ID	55892359100	
	Open Researcher and Contributor ID (ORCID)	0000-0001-7887-2210	

A.1. Current position

Name of University/Institution	Rey Juan Carlos University		
Department	Department of Chemical, Energy and Mechanical Technology		
Address and Country	School of Experimental Sciences and Technology (ESCET), C. Tulipán, s/n, 28933 Móstoles, Madrid (Spain)		
Phone number	+34629889293	E-mail	mario.mgamboa@urjc.es
Current position	Senior Research Fellow 'Cesar Nombela' (2023-T1/ECO-29202)	From	01/06/2024
Keywords	Energy Systems Modelling; Life Cycle Assessment; Multi-Criteria Decision Analysis; Sustainable Supply Chain; Sustainability Assessment		

A.2. Previous positions (research activity interruptions, see call)

Period	Position/Institution/Country/Interruption cause
June 2020 – May 2024	Research Fellow 'Talent Attraction Program' (2019-T2_AMB-15713)
January 2022 – February 2022/May 2022 – July 2022	Research activity interruption/Paternity leave
January 2018 – May 2020	Postdoctoral fellowship/Department of Environment and Planning, University of Aveiro/Aveiro, Portugal
September 2013 – September 2017	Predoctoral researcher/Systems Analysis Unit, IMDEA Energy Institute/Madrid, Spain
October 2012 – July 2013	Internship student/Systems Analysis Unit, IMDEA Energy Institute/Madrid, Spain

A.3. Education

B.Sc./M.Sc./Ph.D.	University	Year
Ph.D. in Industrial Technologies	Rey Juan Carlos University	2017
M.Sc. in Renewable Energies, Fuel Cells and Hydrogen	CSIC (Spanish National Research Council) and UIMP (Menéndez Pelayo International University)	2014
B.Sc. in Environmental Sciences	Rey Juan Carlos University	2013

Part B. CV SUMMARY

Mario Martín Gamboa is part of the teaching and research staff of the Rey Juan Carlos University, holds a **'Cesar Nombela' senior research grant** of the Regional Government of Madrid and the R3 certificate as established researcher. Additionally, Mario Martín was in the final stage of candidate selection for the 2024 call of the Postdoctoral Junior Leader Retaining Fellowships program of La Caixa. He has a Ph.D. in Industrial Technologies: Chemistry, Environmental, Energy, Electronics, Mechanics, and Materials from Rey Juan Carlos University (November 2017), an MSc in Renewable Energies, Fuel Cells and Hydrogen from CSIC in collaboration with UIMP (2014), and a B.Sc. in Environmental Sciences from Rey Juan Carlos University (2013). His main research line is the **development and application of advanced methodologies with a life-cycle perspective for the evaluation of sustainability**, taking into account environmental, economic, social and technical criteria. This research line aims to identify opportunities to improve the sustainability of our production and consumption systems and reduce their impact on the

environment and society.

To date, he has participated in more than 20 research projects and contracts at both national and international levels. In particular, he is the **principal investigator** of (i) the SMARTER project for sustainability monitoring and assessment of raw materials within a clean and responsible energy transition in Spain, (ii) the ASSISTANCE project for evaluating the impact of the Spanish electricity mix transition under a perspective of responsibility and social equity; of (iii) a service contract with the Joint Research Centre to evaluate the social life-cycle impacts of hydrogen technologies and value chains in Europe; and (iv) a service contract “Study on Gender Balance in the R&I Field to Improve the Role of Women in the Energy Transition” for the European Commission’s European Climate Infrastructure and Environment Executive Agency (CINEA); and (v) of a service contract with IMDEA Energy Institute to assess the sustainability impact of emerging technologies. Furthermore, he is the researcher who leads the Systems Analysis Work Packages in three of the current projects in which he is involved. Mario Martín Gamboa’s leadership ability is also proven in the following merits: i) he is currently coordinator of the Spanish Network for Life Cycle Assessment (esLCA), ii) Associate Editor of the international journal “Cleaner Environmental Systems” (Elsevier), iii) member of the Advisory Board of the European projects InsectERA and gEneSys and iv) member of the scientific committee as well as chair session of the 11th International Conference on Life Cycle Management.

Mario Martín Gamboa has published 38 scientific publications (35 scientific publications in JCR journals, 33 of them published in Q1 journals), 4 chapter books and more than 40 contributions to national and international conferences. The total number of citations of his work is 1251 (Scopus) and 1646 (Google Scholar) with an h-index = 24. In the ResearchGate network, his works have received more than 12,300 reads and 243 recommendations for a Research Interest Score of 981.6 (May, 2025). Most of the outcomes from these works has been translated to tools and methods useful for **decision-making** at different levels, allowing for the prioritization of the most sustainable of options, actions, and strategies. One third of researcher Mario Martin Gamboa's articles are available in **open access** format while results, materials, reports and datasets from five of the current projects in which he participates are also published in the Zenodo and UniversiDATA repositories. Moreover, over a third of Mario Martin's publications have been collaborative scientific works with international research groups, located in countries such as Switzerland, Poland, Norway, and Portugal. This international recognition is also demonstrates in the following Mario Martín Gamboa’s merits: i) national correspondent for Spain in the service contract “Study on Gender Balance in the R&I Field to Improve the Role of Women in the Energy Transition” for the European Commission’s European Climate Infrastructure and Environment Executive Agency (CINEA), ii) member of the panel of experts evaluating research project grants for the National Science Centre of Poland and iii) Ambassador of the Centre for Environmental and Marine Studies (CESAM) of Portugal since February 2022.

As for his experience as a teacher, he has taught more than 1000 teaching hours in official studies and non-official degrees, and he has been **guest lecture** to the "LCA practicum" course at the Graduate School of Energy and Environment of the Korea University. Furthermore, Mario Martin has taken part in various workshops, highlighting those organized by the Spanish LCA Network, as well as seminars and training courses related to Life Cycle Assessment methodology. He has supervised two doctoral theses within the Industrial Technologies Programme of the Rey Juan Carlos University (one of them on course), and he has participated in the supervision of more than 10 B.Sc. and M.Sc. theses as well as internship students.

Part C. RELEVANT MERITS

C.1. Selected publications

1. Diego García-Gusano, Diego Iribarren, Iñigo Muñoz, Eneko Arrizabalaga, Lara Mabe, Mario Martin Gamboa (corresponding author). The future need for critical raw materials associated with long-term energy and climate strategies: The illustrative case study of power generation in Spain. Energy 2025; 314: 134266. DOI: 10.1016/j.energy.2024.134266.
2. Luisa Berridy-Segade, María del Prado Díaz de Mera, Miguel Ángel Reyes-Belmonte, Mario Martin Gamboa (corresponding author). Assessing the social life cycle impacts of the Spanish electricity mix: A decadal analysis. Sustainable Production and Consumption 2024; 49: 329-340. DOI: 10.1016/j.spc.2024.06.030

3. Mario Martín Gamboa (corresponding author), Lucia Mancini, Umberto Eynard, Alessandro Arrigoni, Antonio Valente, Eveline Weidner, Fabrice Mathieux. Social life cycle hotspot analysis of future hydrogen use in the EU. International Journal of Life Cycle Assessment 2024. DOI: 10.1007/s11367-024-02335-5
4. Raffaella Pizzichetti, Mario Martín-Gamboa, Cristina Pablos, Ken Reynolds, Simon Stanley, Javier Dufour, Javier Marugán. Environmental life cycle assessment of UV-C LEDs vs. mercury lamps and oxidant selection for diclofenac degradation. Sustainable Materials and Technologies 2024; 41: e01002. DOI: 10.1016/j.susmat.2024.e01002
5. Mario Martín-Gamboa (corresponding author); Luis D. Allegue; Daniel Puyol; Juan A. Melero; Javier Dufour. Environmental life cycle assessment of polyhydroxyalkanoates production by purple phototrophic bacteria mixed cultures. Journal of Cleaner Production 2023; 428:139421. DOI: 10.1016/j.jclepro.2023.139421
6. Pedro L. Cruz; Mario Martín-Gamboa (corresponding author); Khaoula Ben Hnich; Javier Dufour, Diego Iribarren. Effect of improvement actions on the life-cycle environmental and economic performance of synthetic biofuels from date palm waste in Tunisia. Sustainable Energy & Fuels 2023; 7:2873-2882. DOI: 10.1039/D3SE00188A
7. Mario Martín-Gamboa (corresponding author), Ana Cláudia Dias, Diego Iribarren. Definition, assessment and prioritisation of strategies to mitigate social life cycle impacts across the supply chain of bioelectricity: a case study in Portugal. Renewable Energy 2022; 194:1110-1118. DOI: 10.1016/j.renene.2022.06.002
8. Khaoula Ben Hnich; Mario Martín-Gamboa (corresponding author); Zouhour Khila; Nouredine Hajjaji; Javier Dufour, Diego Iribarren. Life cycle sustainability assessment of synthetic fuels from date palm waste. Science of the Total Environment 2021; 796:148961. DOI: 10.1016/j.scitotenv.2021.148961
9. Mario Martín-Gamboa (corresponding author); Ana Cláudia Dias; Luis Arroja; Diego Iribarren. A protocol for the definition of supply chains in product social life cycle assessment: application to bioelectricity. Sustainable Energy & Fuels 2020; 4:5533-5542. DOI: 10.1039/D0SE00919A
10. Mario Martín-Gamboa (corresponding author); Pedro Marques; Fausto Freire; Luis Arroja; Ana Cláudia Dias. Life Cycle Assessment of biomass pellets: a review of methodological choices and results. Renewable & Sustainable Energy Reviews 2020; 133:110278. DOI: 10.1016/j.rser.2020.110278

C.2. Selected congresses

1. Luisa Berridy-Segade, María del Prado Díaz, Miguel Ángel Reyes-Belmonte, Mario Martín-Gamboa. ASSISTANCE project: Analysis of social impacts for a sustainable energy transition in Spain and responsible decision-making [**oral communication**]. Life Cycle Management 2023 Conference. Lille, France, 07/09/2023
2. Mario Martín-Gamboa (presenting author), Diego Iribarren. Illustrating the role of alternative supply chains and evolved conditions in social life cycle assessment of energy-related products [**oral communication**]. Life Cycle Management 2023 Conference. Lille, France, 06/09/2023
3. Umberto Eynard, Mario Martín-Gamboa, Antonio Valente, Lucia Mancini, Alessandro Arrigoni, Eveline Weidner, Fabrice Mathieux. S-LCA applied to hydrogen technologies in Europe: challenges for critical raw materials' responsible sourcing [**oral communication**]. International Conference of Social Life Cycle Assessment. Aachen, Germany, 05-08/09/2022
4. Mario Martín-Gamboa (presenting author), Javier Dufour, Diego Iribarren. How to define supply chains for practical LCSA: application to an energy system [**oral communication**]. Life Cycle Management 2021 Conference. Virtual meeting, 05-08/09/2021
5. Mario Martín-Gamboa (presenting author), Diego Iribarren, Luis Arroja, Ana Cláudia Dias. Enlarging the scope of conventional life-cycle inventories using supply chain management for Social Life Cycle Assessment [**oral communication**]. SETAC Europe 30th Annual Meeting. Virtual Meeting, 04/05/2020

C.3. Selected research projects and grants

1. **Reference:** 2023-T1/ECO-29202. **Title:** Sustainability Monitoring and assessment of raw materials for a clean and responsible energy transition in Spain (SMARTER). **Principal**



- investigator:** Mario Martín Gamboa. **Participating entities:** Rey Juan Carlos University. **Funding entity:** Regional Government of Madrid. **Funding received:** 397,920 €. **Duration:** June 2024 – May 2029.
- Reference:** TED2021-129595B-I00. **Title:** A comprehensive strategy to valorise waste from pig farms through the production of valuable resources for the food sector (VALPIG4FOOD). **Principal investigator:** Daniel Melchor Puyol Santos, Fernando Martínez Castillejo. **Participating entities:** Rey Juan Carlos University, Universitat de Barcelona. **Funding entity:** Spanish Ministry of Science and Innovation. **Funding received:** 184,000 €. **Duration:** December 2022 – November 2025.
 - Reference:** PID2021-122883OB-I00. **Title:** Conversion of refinery sludge into conductive materials with application in sustainable bio-electrochemical systems for the achievement of reclaimed water (SLUD4MAT&WATER). **Principal investigator:** Raul Molina Gil, Fernando Martínez Castillejo. **Participating entities:** Rey Juan Carlos University. **Funding entity:** Spanish Ministry of Science and Innovation. **Funding received:** 229,900 €. **Duration:** September 2022 – August 2025.
 - Reference:** 2022/00156/003. **Title:** Analysis of social impacts for a sustainable energy transition in Spain and responsible decision-making (ASSISTANCE). **Principal investigator:** Mario Martín Gamboa. **Participating entities:** Rey Juan Carlos University. **Funding entity:** Regional Government of Madrid. **Funding received:** 39,826.91 €. **Duration:** June 2022 – October 2024.
 - Reference:** PID2020-117273RB-I00. **Title:** Green hydrogen production from waste biomass pyrolysis fractions by auto-thermal reforming in a membrane reactor of planar geometry (BiowastetoH2). **Principal investigator:** Jose Antonio Calles Martín, Alicia Carrero Fernández. **Participating entities:** Rey Juan Carlos University. **Funding entity:** Spanish Ministry of Science and Innovation. **Funding received:** 160,000 €. **Duration:** September 2021 – August 2024.

C.4. Selected contracts

- Title:** Life Cycle Sustainability Assessment of emerging energy technologies. **Principal investigator:** Mario Martín Gamboa. **Funding entity:** IMDEA Energía. **Participating entities:** Rey Juan Carlos University **Duration:** April 2023 – April 2025. **Funding received:** 7700 €.
- Title:** Study on Gender Balance in the R&I Field to Improve the Role of Women in the Energy Transition. **Principal investigator:** Mario Martín Gamboa. **Funding entity:** European Commission's European Climate Infrastructure and Environment Executive Agency (CINEA). **Participating entities:** Rey Juan Carlos University. **Duration:** April 2023 – July 2023. **Funding received:** 3000 €.
- Title:** Social-Life Cycle Assessment applied to hydrogen technologies and value chains in Europe: identifying hotspots with a special focus on selected critical raw materials. **Principal investigator:** Mario Martín Gamboa. **Funding entity:** European Commission – Join Research Centre. **Participating entities:** Rey Juan Carlos University **Duration:** August 2022 – December 2022. **Funding received:** 14500 €.

C.5. Other merits

- Coordinator of the Spanish Network for Life Cycle Assessment (esLCA).
- Associate Editor** of “Cleaner Environmental Systems” (Elsevier) since June 2023.
- Extraordinary Ph.D. Award of the Ph.D. in Industrial Technology: chemical, environmental, energetic, electronic, mechanical and materials (academic year 2017/2018). International Doctoral School of the Rey Juan Carlos University, Madrid. January 2020.
- Young Researcher URJC Award: best Ph.D. thesis in the area of engineering. Social Council of the Rey Juan Carlos University, Madrid. December 2018.