CV date	09/01/2025

Part A. PERSONAL INFORMATION

First name	Ramiro		
Family name	Ruiz-Rosas		
Gender (*)	Male		
Open Research and Contributor ID (ORCID)	0000-0001-8433-1808		

A.1. Current position

Position	Associate Professor		
Initial date	01/03/2021		
Institution	University of Malaga		
Departament/Center	Chemical engineering department		
Country	Spain		
Key words	Catalysis, Electrochemistry, Carbon Materials, biorrefinery		

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
BsC Chemical Engineering	Malaga (Spain)	2006
MsC Advanced Chemistry: preparation and characterization of materials	Malaga (Spain)	2008
PhD Preparation of carbon & ceramic nanofibers for chemical engineering applications	Malaga (Spain)	2012

Periods of research activity: 2 (ANECA, dating from 2019)
Thesis supervised in the last 5 years: 1
Citations (Scopus): 3397
Citations per year (last 5 years): 380 (2021-2025)
Total number of publications in SCI journals: 85
number of publications in Q1 journals: 59
***h-index*:** 32

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

My research focuses on promoting the decarbonization of industrial processes through the synthesis and application of sustainable carbon materials derived from lignocellulosic waste. These include activated carbons, electrospun nanofibers, monoliths, hierarchical porous carbons, and nanostructured carbons. Such materials exhibit outstanding performance as catalysts, electrocatalysts, adsorbents, and electrodes in applications related to sustainable energy conversion and storage (e.g., ORR electrocatalysts, CO_2 hydrogenation, thermochemical conversion of lignocellulosic residues into sustainable chemicals, and second-generation biofuels) as well as environmental protection (e.g., adsorption and removal of pollutants in liquid and gas phases). Additionally, I work on the development of kinetic models to describe the behavior of adsorbents, catalysts, and electrocatalysts under steady-state and dynamic conditions, including the effects of heat, mass, and diffusion limitations. I am also interested in transferring the research developed in the thermochemical valorization of agroforestry biomass (through pyrolysis, gasification, and combustion) to the industrial sector, working closely with companies in the field to develop circular economy value chains that enable the reduction of greenhouse gas emissions while valorizing waste through techno-economically viable processes.

Research Output and Impact

To date, I have authored or co-authored over 85 scientific articles in high-impact journals (more than 55 in Q1-ranked journals) across the fields of Chemical Engineering, Materials Technology and Environmental Technology. I am co-inventor on two international patents, have contributed six book chapters, and presented more than 160 communications at national and international conferences, including 15 oral presentations and two invited lectures.

My work has received over 3,350 citations according to Scopus (approximately 1,800 in the last five years), with an h-index of 32.

Collaborations and Projects

Through international research projects and participation in various COST Actions, I maintain active collaborations with research groups in Japan (Prof. Nishihara), Iran (Prof. Hadianfard), the Netherlands (Dr. Deuss), Germany (Dr. Sabantina), Algeria (Prof. Ourari), and Portugal (Prof. Fonseca), resulting in around 25 joint publications. Recently, I have initiated new collaborations with CNR (Italy, Prof. Liotta) and TNO (The Netherlands, Dr. Boon) on dry methane reforming using carbon-based catalysts, Fischer Tropsch Synthesis and fibrillar catalysts with magnetic heating capabilities. Throughout my career, I have participated in six regionally funded research projects, eight national projects under the Spanish National Research Program, one European FP7/H2020 project, two international projects co-funded by Spanish & Japanese agencies, and nine private-company research projects.

Supervision and Service

I have supervised eight master's theses, two Ph.D. dissertations, and I am currently co-supervising two additional doctoral theses (expected defense dates: May 2026 and December 2027). I have served as an expert evaluator for the Irish Research Council, CSIC and EQA, reviewed over 150 manuscripts for top JCR journals, and currently serve as Associate Editor for Frontiers in Materials and Fibers. Member of the Institute of Materials and Nanotechnology of the University of Málaga (IMANA), Asociación Andaluza del Hidrógeno and RSEQ-grupo especializado de Ingeniería Química. Since 2019, I have been a Board Member of the Spanish Carbon Group (Grupo Español del Carbón)..

Part C. RELEVANT MERITS

Publications

1. García-Rollán M., Bertran-Llorens S., Palazzolo M.A., Deuss P.J., Heeres H.J., Ruiz-Rosas R., Rosas J.M., Rodriguez-Mirasol J., Cordero T. Lignin hydrotreatment to aromatics products on metallic phosphides carbon-based catalysts produced from lignin (2025) Fuel, 390, art no. 134622.

2. Jaimes-Paez, C.D., García-Mateos, F.J., Ruiz-Rosas, R., Rosas, J.M., Rodríguez-Mirasol, J., Cordero, T., Morallón, E. Cazorla-Amorós, D. Sustainable electrocatalysts: Lignin-derived carbon fibers doped with few-layer graphene for high-performance zinc-air batteries (2025) Carbon, 244, art no. 120715.
3. Recio-Ruiz M.D.C., Ruiz-Rosas R., García-Mateos F.J., Valero-Romero M.J., Rosas J.M., Rodríguez-Mirasol J., Cordero T. An integrated approach to the valorization of pyrolysis products from lignocellulosic residues and by-products (2025) Biomass and Bioenergy, 196, art. no. 107676.
4. García-Rollán M., Toscano-de los Riscos M., Ruiz-Rosas R., Rosas J.M., Rodríguez-Mirasol J., Cordero T. Oxidative electrochemical depolymerization of lignin using highly active self-standing electrocatalysts prepared by electrospinning of lignin (2025) Biomass and Bioenergy, 193, art. no. 107560.
5. Cabrera-Reyes, P., Palomo, J., García-Mateos, F.J., Ruiz-Rosas, R., Rosas, J.M., Rodríguez-Mirasol, J., Cordero, T. Sustainable carbon-based nickel catalysts for the steam reforming of model compounds of pyrolysis liquids (2024) Fuel Processing Technology, 253, art. no. 108028.
6. Gutiérrez M.D.C., García-Mateos F.J., Ruiz-Rosas R., Rosas J.M., Rodríguez-Mirasol J., Cordero T. Evaluation of acetanilide and antipyrine adsorption on lignin-derived activated carbons (2024) Environmental Research, 252, art. no. 11891.
7. García-Rollán, M., García-Mateos, F.J., Ruiz-Rosas, R., Rosas, J.M., Rodríguez-Mirasol, J., Cordero, T. MgO-containing porous carbon spheres derived from magnesium lignosulfonate as sustainable basic catalysts (2023) Journal of Environmental Chemical Engineering, 11 (1), art. no. 109060.
8. Hosseinzaei, B., Hadianfard, M.J., Ruiz-Rosas, R., Rosas, J.M., Rodríguez-Mirasol, J., Cordero, T. Effect of heating rate and H3PO4 as catalyst on the pyrolysis of agricultural residues (2022) Journal of Analytical and Applied Pyrolysis, 168, art. no. 105724.
9. Toro-Trochez, J.L., Haro Del Río, D.A.D., Sandoval-Rangel, L., Bustos-Martínez, D., García-Mateos, F.J., Ruiz-Rosas, R., Rodríguez-Mirasol, J., Cordero, T., Carrilo-Pedraza, E.S. Catalytic fast pyrolysis of soybean hulls: Focus on the products (2022) Journal of Analytical and Applied Pyrolysis, 163, art. no. 105492.
10. García-Mateos, F.J., Ruiz-Rosas, R., María Rosas, J., Morallón, E., Cazorla-Amorós, D., Rodríguez-Mirasol, J., Cordero, T. Activation of electrospun lignin-based carbon fibers and their performance as self-standing supercapacitor electrodes (2020) Separation and Purification Technology, 241, art. no. 116724.

Research projects

1) TITLE: Sustainable CO2 hydrogenation to methanol and light olefins by electrospun biomass-derived catalysts
FUNDING ENTITY: MICINN (PID2022-140844OB-I00)
START DATE: 01/09/2023 END DATE: 30/08/2026. TOTAL AMOUNT: 266875€
PRINCIPAL INVESTIGATOR: Juana María Rosas

2) TITLE: Design and development of a sustainable process for the production of formic acid as hydrogen carrier in a carbon neutral cycle through the valorisation of biomass waste (BioFAtoH2)
FUNDING ENTITY: MICINN (TED2021-131324B-C21)
START DATE: 01/12/2022 END DATE: 31/11/2024. TOTAL AMOUNT: 209760€
PRINCIPAL INVESTIGATOR: Juana María Rosas

3) TITLE: syngas to fuels by biomass-derived catalysts (SynFuelBioCat)
FUNDING ENTITY: MICINN (RTI2018-097555-B-I00)
START DATE: 01/01 2019 END DATE: 31/12/2022. TOTAL AMOUNT:284350€
PRINCIPAL INVESTIGATOR: José Rodríguez Mirasol

4) TITLE: Advanced catalysts from biomass for one-step Dimethyl ether synthesis
FUNDING ENTITY: MINECO (CTQ2015-68654-R)
START DATE: 01/01/2016 END DATE: 31/12/2018. TOTAL AMOUNT: 157300€
PRINCIPAL INVESTIGATOR: José Rodríguez Mirasol

5) TITLE: innovative eco-friendly activated carbon filters for harmful vapors & gases voc purification. (CARVOC)
FUNDING ENTITY: European Union's Seventh Framework Programme (FP7/2007-2013)
START DATE: 01/12/2012 END DATE: 31/05/2015. TOTAL AMOUNT: 383915 €
PRINCIPAL INVESTIGATOR: Diego Cazorla Amorós

Contracts, technological or transfer merits

1) NAME OF THE PROJECT:.Study of pyrolysis of wastes from polyurethane valorization.
FUNDING ENTITY OR BODIES: ECORBIO (CYPRUS)
START DATE: 16/12/2025 DURATION: 24 months. TOTAL AMOUNT: 75000 €
2) NAME OF THE PROJECT: improvement of the properties of biochar produced from olive wastes. FUNDING ENTITY: CARBOLIVA
START DATE: 01/05/2025 DURATION: 10 month. TOTAL AMOUNT: 14500 €
3) NAME OF THE PROJECT: Study on the industrial pyrolysis of olive pomace waste.
FUNDING ENTITY: CARBOLIVA
START DATE: 01/06/2024 DURATION: 4 month. TOTAL AMOUNT: 15000 €
4) NAME OF THE PROJECT: Study on the preparation of carbon fibrillar materials through electrospinning of waste lignin solutions. FUNDING ENTITY: ENVIRONHEMP
START DATE: 01/05/2022 DURATION: 4 month. TOTAL AMOUNT: 8000 €
5) NAME OF THE PROJECT: Preparation of materials for lithium-ion battery electrodes based on silicon supported on graphene nanofibers
FUNDING ENTITY: GRAPHENANO
START DATE: 01/05/2015 DURATION: 1 year. TOTAL AMOUNT: 36300 €
6) NAME OF THE PROJECT: Researching alternatives for the regeneration of saturated activated carbons (EMIVASA1-15I). FUNDING ENTITY: CETaqua, Centro Tecnológico del Agua
START DATE: 01/04/2015 DURATION: 9 months. TOTAL AMOUNT:40000 €
7) NAME OF THE PROJECT: State-of-the-art report on separation technologies based on molecular sieves and membranes, applicable to refinery streams. FUNDING ENTITY: Repsol
START DATE: 28/07/2014 DURATION: 5 months. TOTAL AMOUNT:5500 €

Patents

1) INVENTORS: Diego Cazorla Amorós, Emilia Morallón, Ramiro R. Ruiz Rosas, Raúl Berenguer Betrían, Juana M. Rosas Martínez, José Rodríguez Mirasol, Tomás Cordero
TITLE: Method for producing electrodes or microelectrodes from superporous nanostructured carbonaceous materials by means of electrospraying, electrodes or microelectrodes obtained by means of said method, and uses for electrochemical and analytical applications.
Nº OF APPLICATION: WO2017009505
COUNTRY OF INSCRIPTION: España Date of register: 10/07/2015
ENTITY HOLDER OF RIGHTS: Universidad de Alicante, Universidad de Málaga
2) INVENTORS: Carlos Sanchís Bermúdez, Ramiro R. Ruiz Rosas, Diego Cazorla Amorós, Emilia Morallón, Ángel Berenguer Murcia
TITLE: Method for covering capillaries with nanotubes by means of electro-assisted deposition and microreactor designed to execute said method
Nº OF APPLICATION: WO2014174135A1
COUNTRY OF INSCRIPTION: España Date of register: 24/04/2013
ENTITY HOLDER OF RIGHTS: Universidad de Alicante