

### CURRICULUM VITAE (CVA)

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**IMPORTANT** – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Fecha del CVA	02/01/2025
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#### Part A. PERSONAL INFORMATION

Nombre	Amaya		
Apellidos	Romero Izquierdo		
Sexo (*)	mujer	Fecha de nacimiento	6/04/1977
DNI, NIE, pasaporte	05671592-E		
Dirección email	Amaya.romero@uclm.es	URL Web	https://diq.uclm.es/
Open Researcher and Contributor ID (ORCID) (*)	7202648750	0000-0001-8020-7367	

\* datos obligatorios

#### A.1. Current position

Puesto	Full professor		
Fecha inicio	Octubre de 2019		
Organismo/ Institución	University of Castilla La Mancha		
Departamento/ Centro	Chemical Engineering		
País	Spain	Teléfono	646004494
Palabras clave	Catalysis technology, Chemical processes, Electrochemical operations, Hydrogen production, Nanomaterials, Composites, Graphene		

#### A.2. Previous positions (research activity interruptions, art. 45.2.c)

Periodo	Puesto/ Institución/ País / Motivo interrupción
2019-	Full professor /University of Castilla-La Mancha/Spain
2007-2019	Professor/University of Castilla-La Mancha/Spain
2007	Doctor Assistant lecturer/University of Castilla-La Mancha/Spain
2006-2007	Research assistant/University of Castilla-La Mancha/Spain
2002-2006	Assistant lecturer/University of Castilla-La Mancha/Spain
2000-2002	Contracted Researcher European project/University of Castilla-La Mancha/Spain

(Incorporar todas las filas que sean necesarias)

#### A.3. Education

Grado/Master/Tesis	Universidad/Pais	Año
Chemical Engineering	Universidad de Castilla-La Mancha	1995-2000
PhD in Chemical Engineering	Universidad de Castilla-La Mancha	Nov 2003

(Incorporar todas las filas que sean necesarias)

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

Amaya Romero left graduated as Chemical Engineer at the University of Castilla La Mancha (UCLM) in June 2000. During the last year of the career (1999-2000) she got a scholarship for vocational training and education promotion (BOE 30/03/2000) in the TEQUIMA research group. In December 2003, she defended her Doctoral PhD in the field of the technology of the heterogeneous catalysis working on a project funded by a European project (CADENOX).

Her pre-doctoral research was focused on the development of new materials and heterogeneous catalysis: *synthesis and characterization of pillared clays with titanium and iron to be used as catalysts for the selective catalytic elimination of NOx*. After completing the doctoral thesis, her research

focused mainly on the genesis of a new line of research within the nanotechnology field, line that currently leads in the Catalysis and New Materials Laboratory of the Chemical Engineering Department of the UCLM. It is precisely within this research line, she got a post-doctoral long-term (7 months) scholarship from the UCLM at Utrecht University (The Netherlands) with the research group of Professor De Jong, a specialist in the synthesis and characterization of Carbon Nanomaterials and their functionalization for industrial applications. This allowed the application of these materials more extensively in different investigations of the group and led to collaborations with companies through different transfer projects.

Throughout her postdoctoral career, her research activity has primarily focused on Catalysis and Electrocatalysis, as well as the development of New Materials, particularly in the field of carbon nanotechnology. Her work includes the synthesis, characterization, and application of carbon nanostructures (e.g., nanotubes, nanofibers, nanospheres) as catalysts, electrocatalysts, or as components in composite materials used in construction. Additionally, she has conducted extensive research on graphene and its derivatives (reduced graphene oxide and graphene oxide) for various industrial applications. Since 2014, her research has expanded to include the development of aerogels of industrial interest, a line of work integrated into two European projects in which she actively participates (OASIS and BIOMAT). Moreover, she continues to contribute significantly to Heterogeneous Catalysis (e.g., Fischer-Tropsch synthesis, glycerol oxidation, water-gas shift reaction, and green hydrogen production via ammonia decomposition) and Electrocatalysis (e.g., electrochemical reforming of alcohols and water electrolysis).

In the medium to long term, her scientific and technical objectives are to further strengthen the nanotechnology research line, with a particular focus on the development of innovative materials with direct industrial applications, especially in the environmental and energy sectors and in emerging technologies.

Throughout her career, she has published more than 130 scientific articles in JCR-indexed journals, around 15 book chapters, and has presented numerous contributions at prestigious scientific conferences, both national and international. According to the information available, papers have been cited more than 4680 times and, she is habitual censorship of several journals in her field. She has actively participated in 28 research projects funded through public calls at regional, national, and European levels, acting as the principal investigator in 3 of them. Additionally, she has supervised 8 doctoral theses and has been recognized with three 6-years research merits. In 2010, she received the Ibn Wafid de Toledo Award for young researchers, granted by the Regional Government of Castilla-La Mancha (JCCM). She is habitual censorship of several journals in her field and, since 2018, she has been part of various evaluation panels of the Spanish State Research Agency as well as 2 foreign universities. She actively collaborates with prestigious international groups and institutions, including the Autonomous University of the State of Mexico, the Institut de Recherches sur la Catalyse et l'Environnement de Lyon, the Pontificia Universidad Católica del Perú, Université Laval, and the University of Patras. This body of work highlights her contribution to advancements in key fields such as chemical engineering, energy technologies, and industrial applications.

Regarding knowledge transfer and collaboration with the business sector, she has participated in over 14 contracts with private companies, leading 9 of them as the principal investigator. Currently, she also serves as the principal investigator in 2 knowledge transfer projects funded by the Vice-Rectorate for Innovation, Employment, and Entrepreneurship, and has been recognized with a 6-years knowledge transfer merit.

## **Part C. RELEVANT MERITS** (sorted by typology)

### **C.1. Publications**

1. Metal-free borocarbonitrides as electrocatalysts for the hydrogen evolution reaction under alkaline media. J. Cencerrero, P. Sanchez, A. de Lucas-Consuegra, A.R. de la Osa, **A. Romero**. Journal of Electroanalytical Chemistry, 977, (2025) 118856.

2. Environmental Impact of Polyurethane-Based Aerogel Production: Influence of Solvents and Solids Contents. S. A. Aldaghi, M. Costamagna, M. Perucca, E. Pinilla-Peñalver, D. Cantero, **A. Romero** and M.L. Sánchez-Silva. Resources, 13(10) (2024) 138.
3. Electrochemical reforming of a fusel oil stream from the winery industry: New insights for a circular economy based on renewable hydrogen. J. Serrano-Jiménez, A. de Lucas-Consuegra, P. Sánchez, **A. Romero**, A.R. de la Osa. Fuel 350 (2023) 128728.
4. Graphene-like materials as an alternative to carbon Vulcan support for the electrochemical reforming of ethanol: towards a complete optimization of the anodic catalyst. J. Serrano-Jiménez, A.R. de la Osa, A. Rodríguez-Gómez, P. Sánchez, **A. Romero**, A. de Lucas-Consuegra. Journal of Electroanalytical Chemistry, 925 (2022) 116680.
5. Influence of the reducing agent on the physicochemical and electrocatalytic properties of graphene-based aerogels. J.Cencerrero, P.Sánchez, A. de Lucas-Consuegra, A.R.de la Osa, **A.Romero**. FlatChem, 36 (2022) 100435.
6. Cox-free hydrogen production from ammonia at low temperature using Co/SiC catalysts: effect of promoters. M. Pinzón, **A. Romero**, A. de Lucas-Consuegra, A.R. de la Osa, P. Sánchez. Catalysis Today, 390-391 (2022).
7. Different strategies to simultaneously N-doping and reduce graphene oxide for electrocatalytic applications. **A.Romero**, A.R.delaOsa, S.Ordoñez, M.P.Lavín-López, A.deLucas-Consuegra, J.L.Valverde, A.Patón. Journal of Electroanalytical Chemistry, 857 (2020) 113695.
8. Comparative study of different scalable routes to synthesize graphene oxide and reduced graphene oxide. **A. Romero**, M.P. Lavín-López, L. Sánchez-Silva, J.L. Valverde, A. Patón-Carrero. Materials Chemistry and Physics 203 (2018) 284-292.
9. Electrocatalytic conversion of CO<sub>2</sub> to added-value chemicals in a high temperature proton-exchange membrane reactor. N. Gutiérrez-Guerra, J.L. Valverde, **A. Romero**, J.C. Serrano-Ruiz, A. de Lucas-Consuegra Electrochemistry Communications 81 (2017) 128–131.
10. Solvent-Based Exfoliation via Sonication of Graphitic Materials for Graphene Manufacture. M. P. Lavín-Lopez, J. L. Valverde, L. Sanchez-Silva, **A. Romero**. Industrial Engineering Chemistry Research, 55 (2016), 845-855.

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## C.2. Congress.

1. Materiales Novedosos para la producción de hidrógeno por descomposición de amoniacó. Marina Pinzón García, Paula Sánchez, **Amaya Romero**. IX Jornadas Doctorales G9. Bilbao. May 2022. Poster.
2. Catalizadores de Ru soportado sobre óxido de grafeno reducido para la producción de H<sub>2</sub> a partir de NH<sub>3</sub>. M. Pinzón, P. Sánchez, A. de Lucas-Consuegra, A.R. de la Osa, **A. Romero**. Biennial Meeting of the Spanish Catalysis Society (SECAT) 2021: Nuevos Retos de la Catálisis en Química, Medio Ambiente y Energía. Valencia. October 2021. Oral.
3. Ammonia as a carrier for hydrogen production by using perovskites. M. Pinzón, P. Sánchez, A. de Lucas-Consuegra, A.R. de la Osa, **A. Romero**. 8<sup>th</sup> International Conference on Sustainable Solid Waste Management. Thessaloniki-Online. June 2021. Oral.
4. Graphite Oxide Synthesis using new oxidizing agents. A. Patón-Carrero, A. Romero, J.L. Valverde, M.P. Lavín-López. 10th World Congress of Chemical Engineering. Internacional. October 2017. Poster.

## C.3. Research projects

### European.

1. Novel routes to green hydrogen production,101070856 (ELOBIO). HORIZON-EIC-2021-PATHFINDERCHALLENGES-01-04. PI: A. Lucas-Consuegra. January 2023-December 2027. UCLM: 446. 400 €. Researcher.
2. An Open Innovation Test Bed for Nano-Enabled Bio-Based PUR Foams and Composites (BIOMAT, H2020 953270). Horizon 2020-European Commission. PI: M.L. Sánchez. UCLM. January 2021-December 2024. 556.075 €. Researcher

3. Open Innovation Test Beds for Lightweight, nano-enabled multifunctional composite materials and components (OASIS, H2020 814581). Horizon 2020-European Commission. PI: M.L. Sánchez. UCLM. January 2019-September 2022. 446.863 €. Researcher
4. Nanocomposite for building constructions and civil infrastructures: European network pilot production line to promote industrial application cases (NANOLEAP, H2020 646397). Horizon 2020. European Commission. PI: J.L. Valverde. UCLM. January 2015-June 2018. 921.627 €. Researcher.

### **National and Regional**

5. Desarrollo de electrocatalizadores avanzados para la producción de H<sub>2</sub> a partir de moléculas procedentes de biomasa (PID2022-142502ob-i00). Ministry of Science, Innovation and Universities. PI: P. Sánchez/F. Dorado. September 2023- August 2026. 275000 €. Researcher.
6. Porous Biobased and High-functional sorbent alternatives (PCI2024-153450). Ministry of Science, Innovation and Universities and co-funded by the European Union. PI: M.L. Sánchez. January 2024- August 2027. 60000 €. Researcher.
7. Producción sostenible de metano a partir de la gasificación de biomasa utilizando catalizadores carbonosos innovadores (SBPLY/23/180225/000036). Regional Ministry of Education and Science. Government of Castilla-La Mancha. PI: M.L. Sánchez/A. Romero. UCLM. June 2024-June 2027. 132000 €. IP.
8. Actuación 1. Reducción de CO<sub>2</sub> procedente de la gasificación de biomasa utilizando catalizadores carbonosos innovadores (CONVCNH2ACT1). Collaboration agreement between the National Center for Hydrogen and Fuel Cell Technology Experimentation (CNH2) and the University of Castilla-La Mancha for the execution of research activities related to the renewable energy and hydrogen program, included within the complementary R&D&I plans of the Ministry of Science and Innovation and funded by the European Union-Next Generation-EU under Component 17 of the Recovery, Transformation, and Resilience Plan. PI: M.L. Sánchez/A. Romero. UCLM. February 2024-september 2025. 100000 €. IP.
9. Exploración de catalizadores basados en aerogeles para el reformado electroquímico de bioalcoholes (PID2019-107499RB-I00). Spanish Ministry of Economy and Competitiveness. PI: P. Sánchez/F.Dorado. UCLM. June 2020-June 2023. 216.590 €. Researcher.
10. Producción de hidrógeno a partir de amoníaco utilizando catalizadores novedosos. Regional Government of Castilla-La Mancha (SBPLY/17/180501/000281). PI: P. Sánchez/**A.Romero**. UCLM. September 2018-March 2021. 136.290 €. IP.
11. Procesos electrocatalíticos para la transformación de bioetanol en productos de mayor valor. Spanish Ministry of Economy and Competitiveness (CTQ2016-75491-R). PI: P. Sánchez. UCLM. January 2017-December 2019. 297.660 €. Researcher.
12. Desarrollo de catalizadores heterogéneos nanoestructurados y/o inmovilizados sobre soportes poliméricos para la síntesis medioambientalmente aceptable de compuestos de alto valor añadido. Regional Government of Castilla-La Mancha (PEII-2014-007-P). PI: J.L. Valverde/P. Sánchez. UCLM. January 2015-December 2018. 146160 €. Researcher.

### **C.4. Contracts, technological or transfer merits**

#### ***Contracts.***

- H2B2 Electrolysis Technologies S.L.: Testeo electroquímico de electrodos para el desarrollo de electrolizadores de agua basados en membranas de intercambio aniónico (220004UCTR). January 2022-December 2024. Researcher. 142.017,70 €
- ASIMTRA, UCTR120087: Síntesis de materiales nanocarbonosos de interés industrial. IP: A.Romero. March 2012-March 2014. 120000 €.
- Graphenano (UCTR160175) "Optimización de la Síntesis y Formulación y Caracterización de Nuevos Materiales Basados en Derivados del Grafeno". IP: A.Romero. March 2016-March 2018. IP. 80.000 €.
- Graphenano (UCTR160177) "Optimización de la Síntesis y Formulación y Caracterización de Nuevos Materiales Basados en Derivados del Grafeno". IP: A.Romero. March 2018-March 2020. IP. 80.000 €.