

Judith González Lavín

[CUNEF UNIVERSIDAD](#)
Almansa 101, 28040 Madrid Spain
judith.gonzalez@cunef.edu
[CUNEF Website](#)
[Google Scholar](#)
[ORCID](#)

EMPLOYMENT

- Assistant Professor, Dept. of Mathematics, CUNEF Universidad, 2026-
- Postdoctoral Researcher, INCAR-CSIC, 2026
- PhD Research Assistant, Universidad de Oviedo/INAR-CSIC, 2021-2026
- Researcher in European Projects. NCLAS: NanoCrystals in Fibre Lasers. Funding agency: European Commission, H2020 (2021); Innovative Nanostructured Materials and Smart Textile Electrodes for a New Generation of Batteries and Supercapacitors (INNENERMAT). Funding agency: M-ERA.NET, H2020 (2021-2023).

EDUCATION

- PhD in Materials Science, University of Oviedo, 2026.
- Interuniversity Master's Degree in New Materials, University of Cantabria and University of the Basque Country, 2021; Master's Degree in Teacher Training for Secondary Education, Upper Secondary Education, Vocational Education and Language Teaching, National University of Distance Education (UNED), 2024.
- Bachelor's Degree in Physics, University of Cantabria, 2020.

FIELDS OF INTEREST

Synthesis of Next-Generation Electrocatalytic Materials for Electrochemical Applications

PUBLICATIONS

1. González-Lavín, Judith; Rey-Raap, Natalia; Arenillas, Ana; Espinosa-Lagunes, Fabiana; Arriaga, Luis Gerardo.; Ledesma-García, Janet: "Impact of carbon and nitrogen doping on trimetallic iron–nickel–cobalt aerogels as electrocatalysts for enhanced urea oxidation: A strategy for energy-efficient hydrogen production," *International Journal of Hydrogen Energy*, 234, 155094, 2026.
2. González-Lavín, Judith; Bellard Kira, Willy; Rey-Raap, Natalia; Arenillas, Ana; Alves Martins, Cauê: "Noble-metal-free cobalt aerogel cathodes for HClO reduction in methanol microfluidic fuel cells," *Fuel*, 419, 138891, 2026.

3. González-Lavín, Judith; Salazar-Lara, Yon; Rey-Raap, Natalia; Luna-Barcenas, Gabriel; Arenillas, Ana; Arriaga, Luis Gerardo; Ledesma-García, Janet: "Hydrogen production via ammonia using trimetallic-doped aerogels based on Fe, Ni, Co," *Journal of Power Sources*, 659, 238448, 2025.
4. González-Lavín, Judith; Arenillas, Ana; Rey-Raap, Natalia: "Scalable microwave-assisted synthesis of iron oxide aerogels: Tuning morphology, crystallinity, and electrocatalytic performance," *Electrochimica Acta*, 548, 147927, 2025.
5. González-Lavín, Judith; Arenillas, Ana; Rey-Raap, Natalia: "Overcoming Scaling Challenges in Sol–Gel Synthesis: A Microwave-Assisted Approach for Iron-Based Energy Materials," *Microwave*, 1, 6, 2025.
6. González-Lavín, Judith; Arenillas, Ana; Rey-Raap, Natalia: "Revealing the Importance of Iron Aerogel Features as Electrocatalysts for the Oxygen Reduction Reaction," *Gels*, 11, 3, 2025.
7. González-Barriuso, M.; Sánchez-Suárez, M.; González-Lavín, Judith; Arenillas, Ana; Rey-Raap, Natalia: "Synthesis of Ni-Doped Graphene Aerogels for Electrochemical Applications," *Gels*, 10, 180, 2024.
8. González-Lavín, Judith; Martínez-Lázaro, Alejandra; Rodríguez-Barajas, Merari H.; Ledesma-García, Janet; Arriaga, Luis G.; Arenillas, Ana; Rey-Raap, Natalia: "Metallic Aerogels for Their Use in Sustainable Energy Generation," in *Conventional and Alternative Electrochemical Methods for Synthesis and Analysis of Advanced Functional Layers and Coatings. Theoretical Bases and Practical Applications*, Cambridge Scholars Publishing, 1–42, 2024.
9. González-Lavín, Judith; Arenillas, Ana; Rey-Raap, Natalia: "Microwave-Assisted Synthesis of Iron-Based Aerogels with Tailored Textural and Morphological Properties," *ACS Applied Nano Materials*, 6, 18582–18591, 2023.

WORKING PAPERS

1. González-Lavín, Judith; Ayllón, Francisco; Rey-Raap, Natalia; Arenillas, Ana: "Estudio de la bifuncionalidad electroquímica de aerogeles bimetálicos dopados con carbono," *Boletín del Grupo Español del Carbón*, 79, 80–81, 2026.
2. González-Lavín, Judith; Arenillas, Ana; Arriaga, Luis Gerardo; Ledesma-García, Janet; Rey-Raap, Natalia: "Optimization of the main variables of the production process of metallic aerogels obtained by microwave-assisted sol-gel reaction," *Memorias del Congreso de la Sociedad Mexicana de Ciencia y Tecnología de Membranas*, 11, 31–33, 2024.
3. González-Lavín, Judith; Arenillas, Ana; Rey-Raap, Natalia: "Desarrollo de aerogeles Fe/C como electrocatalizadores para la reacción de reducción de oxígeno," *Boletín del Grupo Español del Carbón*, 70, 36–37, 2023.

SELECTED ACADEMIC HONOURS AND GRANTS

- Severo Ochoa Short Research Stay Grant (EB25-06): Research stay at the Fritz Haber Institute, Berlin, Germany (2025).
- Severo Ochoa Short Research Stay Grant (B24-10): Research stay at the Autonomous University of Querétaro (UAQ) and CIDETEQ, Mexico (2024).
- Severo Ochoa Predoctoral Fellowship (BP21-159): Awarded by the Principality of Asturias under the 2021–2022 call. Fellowship commenced on 6 June 2023.

- Erasmus+ KA131 Mobility Grant: Research stay at the AGH University of Krakow, Poland (2023).
- Departmental Collaboration Scholarship – Department of Chemical Engineering and Environmental Technology (2020).

SELECTED PRESENTATIONS CONFERENCES

- Novel transition metal aerogels synthesized by microwave heating. *5th International Conference on Applied Surface Science*. Mallorca, Spain.
- Reaction mechanism and optimization of the process variables in the microwave-induced synthesis of nanostructured transition metal aerogel. *XXXVIII Reunión Bienal de Química 2022*. Granada, Spain. **Awarded with a GEE grant to attend.**
- Optimizing the process variables for microwave-induced synthesis of iron aerogels. *PhD Multidiscip. Chem. Congress*. Gijón, Spain. **Special mention from the jury.**
- Aerogeles de hierro como aditivo en la optimización de cátodos para SOFCs. *XLIII Reunión del Grupo Especializado de Electroquímica de la RSEQ*. Ciudad Real, Spain. **Award for the best oral presentation.**
- Parameters to consider in the preparation of metallic electrocatalytic aerogels for proton exchange membrane fuel cells. *XIII Congreso anual Sociedad Mexicana de ciencia y tecnología de membranas*. Chetumal, Mexico.
- Functionalized Transition Metal Aerogels: A New Frontier in Biomarker Detection. *YouMat*. Madrid, Spain. **Invitation to assist from the organization.**

PROFESSIONAL ACTIVITIES

1. Student Representative of the Science Panel for the Verification of Bachelor's and Master's Degree Programs (2019–2026); Evaluator of the Science Panel for the Renewal of Accreditation of Official Doctoral Programs (2022–2026); Member of the Science Subcommittee for the Evaluation and Accreditation of Bachelor's and Master's Degree Programs (2023–2026). Fundación para el Conocimiento madri+d.
2. Methodological Secretary of the Science Committee (2021–2023). AQU Catalunya.
3. Programmer in the Nuclear Sector Project Monitoring Department (2021). CIC Consulting Informático.
4. Student Representative of the Science Committee (2018–2021). Unibasq.