

**CV Date**

23/06/2025

**Part A. PERSONAL INFORMATION**

First Name	Rebeca		
Family Name	López Serna		
Sex	Female	Date of Birth	06/07/1980
ID number Social Security, Passport	71936451h		
URL Web			
Email Address	rebeca.lopez@uva.es		
Open Researcher and Contributor ID (ORCID)	0000-0003-3927-057X		

**A.1. Current position**

Job Title	Associate Professor		
Starting date	2023		
Institution	University of Valladolid (UVa)		
Department / Centre	Analytical Chemistry / Faculty of Science		
Country	Spain	Phone Number	(34) 983423531
Keywords	Mass spectrometry; Gas chromatography (fid, ecd, ms, etc); Liquid chromatography (uv, luminiscence, ms, electrochemical, etc); Industrial chemistry		

**A.2. Previous positions (Research Career breaks included)**

Period	Job Title / Name of Employer / Country
2020 - 2023	Assistant Professor / University of Valladolid (UVa)

**A.3. Education**

Degree/Master/PhD	University / Country	Year
Environmental Analytical Chemistry	University of Barcelona (UB) / Spain	2013
M.S. Advanced Chemistry	University of Barcelona (UB) / Spain	2009
B.S. Chemistry	University of Valladolid (UVa) / Spain	2004

**Part B. CV SUMMARY**

I graduated in Chemistry from the University of Valladolid (UVa), Spain, in 2004. Afterward, I worked on R&D&I projects in companies such as Agrotechnology and Food Innovation ( **The Netherlands**), Repsol YPF, and GlaxoSmithKline, among others.

In 2008, I received a four-year FPI grant from the Spanish Department of Science and Education to pursue my PhD in Environmental Chemistry at the Institute of Environmental Assessment and Water Research (IDAEA) in Barcelona, Spain, part of the Spanish National Research Council ( **CSIC**), under the supervision of Dr. Damià Barceló and Dr. Mira Petrovic. In 2012, I spent four months as a Visiting Researcher at the University of Bath ( **UK**).

From 2013 to 2015, I conducted research as a Postdoctoral Scholar in the Department of Environmental Sciences at the **University of California, Riverside (UCR), in the United States**.

Back in Spain, I successfully competed in the National **Juan de la Cierva-Incorporation** Program, joining the Department of Chemical Engineering and Environmental Technology (IQTMA) at UVa. There, I initiated a new research area focused on the development and application of analytical tools for determining compounds of emerging concern (CECs) in environmental matrices, which in 2017 became integrated and consolidated within the **Institute of Sustainable Processes (ISP) at UVa**. In 2018, I spent three months as a Visiting

Researcher at the Swedish University of Agricultural Sciences (SLU) in **Sweden**. In 2019, I was awarded one of the 10 Senior Researcher postdoctoral positions at UVa.

Currently, I am an **Associate Professor** in the Department of Analytical Chemistry and continue leading the CECs research group at ISP-UVa. I have 50 publications, including 39 JCR articles ( **+ 3 under revision**), of which 80% are ranked in Q1, totaling 2,211 citations and an H-index of 20.

## Part C. RELEVANT ACCOMPLISHMENTS

### C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (n° x / n° y): position / total authors. If applicable, indicate the number of citations

- 1 **Scientific paper**. Daniel Gutiérrez-Martín; Gabriela Castro; Susana V. González; Hans Peter H. Arp; Rebeca López-Serna; Alexandros Asimakopoulos. 2025. A comprehensive analytical approach to monitoring selected emerging contaminant classes in sewage sludge and e-waste from Norway. *Environmental Chemistry and Ecotoxicology*. 7, pp.901-909.
- 2 **Scientific paper**. Félix Gaspar Gonzalo Ibrahim; Rebeca López-Serna; Raúl Muñoz Torre; Ana Cabrerizo Pastor; Ignacio de Godos Crespo. 2025. Evaluating emerging pollutant removal in a scale-down high rate algae pond. *Journal of Environmental Chemical Engineering*. 13-3.
- 3 **Scientific paper**. Ainoa Morillas-España; Rebeca López-Serna; Laura Yamila Rodríguez Chikri; Juan José Jiménez; Tomás Lafarga; Enrica Uggetti; Gabriel Acién; Cynthia V. González-López. 2025. Microalgae wastewater treatment: Pharmaceutical removal and biomass valorization. *Journal of Environmental Management*. 380-124942.
- 4 **Scientific paper**. Rebeca López-Serna; Belén Franco; Silvia Bolado; Juan José Jiménez. 2024. Removal of contaminants of emerging concern from pig manure in different operation stages of a thin-layer cascade photobioreactor. Relationship with concentrations in microalgae and manure. *Journal of Environmental Management*. 354-120340.
- 5 **Scientific paper**. Daniel Gutiérrez-Martín; Rubén Gil-Solsona; Maarten W. Saaltink; Valentí Rodellas; Rebeca López-Serna; Albert Folch; Jesús Carrera; Pablo Gago-Ferrero. 2023. Chemicals of emerging concern in coastal aquifers: Assessment along the land-ocean interface. *Journal of Hazardous Materials*. 448-130876.
- 6 **Scientific paper**. Daniel Gutiérrez-Martín; Esteban Restrepo-Montes; Oksana Golovko; et al; Rubén Gil-Solsona. 2023. Comprehensive profiling and semi-quantification of exogenous chemicals in human urine using HRMS-based strategies. *Analytical and Bioanalytical Chemistry*. 415(29-30).
- 7 **Scientific paper**. Miguel Ángel de la Serna Calleja; Silvia Bolado; Juan José Jiménez; Rebeca López-Serna. 2023. Performance critical comparison of offline SPE, online SPE, and direct injection for the determination of CECs in complex liquid environmental matrices. *Microchemical Journal*. 187-108395.
- 8 **Scientific paper**. Daniel Gutiérrez-Martín; Montse Marquès; Albert Pons-Escoda; et al; Rubén Gil-Solsona. 2023. Tumoral and normal brain tissue extraction protocol for wide-scope screening in chemical exposomics. *MethodsX*. 10-102069.
- 9 **Scientific paper**. Nereida Pérez-Lemus; Rebeca López-Serna; Sara-Isabel Pérez-Elvira; Enrique Barrado. 2022. Analysis of 60 pharmaceuticals and personal care products in sewage sludge by ultra-high performance liquid chromatography and tandem mass spectroscopy. *Microchemical Journal*. 175-107148.
- 10 **Scientific paper**. Portela-Monge, Cristina; Bolado, Silvia; López-Serna, Rebeca; Jiménez, Juan J. 2022. Determination of contaminants of emerging concern in raw pig manure as a whole: difference with the analysis of solid and liquid phases separately. *Environmental Science: Processes and Impacts*. 87.
- 11 **Scientific paper**. López-Serna, Rebeca; Bolado, Silvia; Irusta, Rubén; Jiménez, Juan J. 2022. Determination of veterinary drugs in microalgae biomass from photobioreactors fed with pigery wastewater. *Chemosphere*. 287-132076.

- 12 Scientific paper.** Mónica Salamanca; Rebeca López-Serna; Laura Palacio; Antonio Hernández; Pedro Prádanos; Mar Peña. 2022. Ecological Risk Evaluation and Removal of Emerging Pollutants in Urban Wastewater by a Hollow Fiber Forward Osmosis Membrane. *Membranes*. 12(3)-293.
- 13 Scientific paper.** Ruas, Grazielle; López-Serna, Rebeca; Scarcelli, Priscila Guenka; Serejo, Mayara Leite; Boncz, Marc Árpád; Muñoz, Raúl. 2022. Influence of the hydraulic retention time on the removal of emerging contaminants in an anoxic-aerobic algal-bacterial photobioreactor coupled with anaerobic digestion. *Science of the Total Environment*. 827-154262.
- 14 Scientific paper.** Johanna Zambrano; Pedro Antonio García-Encina; Rebeca López-Serna; Juan José Jiménez; Rubén Irusta. 2022. Photolytic and photocatalytic removal of a mixture of four veterinary antibiotics. *Journal of Water Process Engineering*. 48-102841.
- 15 Scientific paper.** Argüeso-Mata, Manuel; Bolado, Silvia; Jiménez, Juan J; López-Serna, Rebeca. 2021. Determination of antibiotics and other veterinary drugs in the solid phase of pig manure. *Chemosphere*. 275-130039.
- 16 Scientific paper.** Scarcelli, Priscila Guenka; Ruas, Grazielle; López-Serna, Rebeca; Serejo, Mayara Leite; Saúl; Boncz, Marc Árpád; Muñoz, Raúl. 2021. Integration of algae-based sewage treatment with anaerobic digestion of the bacterial-algal biomass and biogas upgrading. *Bioresource Technology*. 340-125552.
- 17 Scientific paper.** Mónica Salamanca; Rebeca López-Serna; Laura Palacio; Antonio Hernández; Pedro Prádanos; Mar Peña. 2021. Study of the rejection of contaminants of emerging concern by a biomimetic aquaporin hollow fiber forward osmosis membrane. *Journal of Water Process Engineering*. 40-101914.
- 18 Scientific paper.** Pérez-Lemus, Nereida; López-Serna, Rebeca; Pérez-Elvira, Sara-Isabel; Barrado, Enrique. 2020. Sample pre-treatment and analytical methodology for the simultaneous determination of pharmaceuticals and personal care products in sewage sludge. *Chemosphere*. 258-127273.
- 19 Review.** Bauyrzhan Abdykarimov; Mereke Alimzhanova; Rebeca López-Serna; Yerkanat Syrgabek. 2025. Green Analytical Procedure Index (GAPI) assessment for Total Petroleum Hydrocarbons determination methods in soil and sediments. A Review. *Trends in Environmental Analytical Chemistry*.
- 20 Review.** Mereke Alimzhanova; Nurkanat Meirbekov; Yerkanat Syrgabek; Rebeca López-Serna; Saltanat Yegemova. 2025. Plant- and Microbial-Based Organic Disease Management for Grapevines: A Review. *Agriculture Switzerland*.
- 21 Review.** Syrgabek, Yerkanat; Alimzhanova, Mereke; García-Encina, Pedro A.; Jiménez, Juan José; López-Serna, Rebeca. 2023. Greenness evaluation of sample preparation methods by GAPI for the determination of pesticides in grape: A review. *Trends in Environmental Analytical Chemistry*. 39-e00206.

## C.2. Conferences and meetings

- 1** Daniel Gutiérrez-Martín; Maria-Christina Nika; Rebeca López-Serna; Sharon Ridolfo; Fulvio Amato; Pablo Gago-Ferrero. Exploring the Organic Composition of Polar and Semi-Polar Compounds in Ultrafine Particles (UFPs) in Barcelona, Spain: Validation and Application of an LC-HRMS Method. 20th Annual Workshop on Emerging High-Resolution Mass Spectrometry (HRMS) and LC-MS/MS Applications in Environmental Analysis and Food Safety. Spanish National Research Council (CSIC). 2024. Spain. 'Participatory - poster.
- 2** F. Gonzalo Ibrahim; R. Muñoz Torre; R. López-Serna; A.M. Botero Coy; F. Hernández; I. de Godos Crespo. Microalgal photobioreactor systems for urban wastewater treatment and removal of emerging contaminants. 1st International Conference on Novel Photorefineries for Resource Recovery. Institute of Sustainable Processes (ISP) - University of Valladolid (UVA). 2024. Spain. 'Participatory - poster.
- 3** Ángela De La Hoz Nieto; Fernando Jiménez Barredo; Ana Isabel Barrado Olmedo; et al; Enrique Barrado Esteban. Determination of lead and its isotopes in concrete by HR-ICP-MS. XXIV Meeting of SEQA. Spanish Society of Analytical Chemistry (SEQA). 2024. Spain. Participatory - oral communication.

- 4 F. G. Gonzalo; R. Muñoz; A. Cabrerizo; R. López-Serna; F. Hernández; I. de Godos. Removal of Emerging Contaminants in Wastewater Treatment: Comparison of Photosynthetic Systems and Activated Sludge. XV Spanish Water Treatment Congress. Spanish Water Treatment Board (META). 2024. Spain. Participatory - oral communication.
- 5 D. Gutiérrez-Martín; E. Restrepo-Montes; O. Golovko; et al; R. Gil-Solsona. Advanced HRMS-Based Strategies for Profiling and Semi-Quantification of Exogenous Chemicals in Human Urine. SETAC Europe 34th Annual Meeting (SETAC 2024). Society of Environmental Toxicology and Chemistry (SETAC). 2024. Spain. 'Participatory - poster.

### C.3. Research projects and contracts

- 1 **Project.** Comprehensive Analysis of Honey Quality and Contaminants by Chromatographic Methods. Ministry of Science and Higher Education of Kazakhstan. Madina Mamedova. (Center of Physical Chemical Methods of Research and Analysis - Al Farabi Kazakh National University). 01/07/2025-30/06/2028. Team member.
- 2 **Project.** PID2023-153356OB-I00, Sustainable Extraction of Valuable Bioproducts from Sewage Sludge: Analysis of Chemical and Biological Risks. Spanish Ministry of Science, Innovation and Universities. Silvia Bolado Rodríguez. (Institute of Sustainable Processes (ISP-UVa)). 01/09/2024-31/08/2027. 216.625 €. Team member.
- 3 **Project.** PID2022-136682NA-I00, Influence of Global Warming on the Sources, Cycles, and Fate of Legacy and Emerging Contaminants in the Lakes of the Byers Peninsula (Antarctica). Spanish Ministry of Science and Innovation. Ana Cabrerizo Pastor. (Institute of Sustainable Processes (ISP-UVa)). 01/09/2023-31/08/2026. 225.000 €. Team member.
- 4 **Project.** Stability of Contaminants of Emerging Concern during the Treatment of Wastewaters with Microalgae. Government of the Republic of Kazakhstan. Rebeca López Serna. (Institute of Sustainable Processes (ISP-UVa)). 01/12/2024-30/11/2025. 6.480 €. Co-ordinator. 1) Assessment of the persistence and degradation of selected microcontaminants during the treatment of urban and piggery wastewater using various microalgae species. 2) Investigation of the fate of p...
- 5 **Project.** CPP2021-008639, Industrial Online Digital Twin with Anomaly Detection, Performance, Quality and Energy Optimization and Prescriptive Analytics. Spanish Ministry of Science and Innovation. Fernando Juan Tadeo Rico. (Institute of Sustainable Processes (ISP-UVa) - SONAE ARAUCO ESPAÑA SOLUCIONES DE MADERA S.L.). 01/10/2022-30/09/2025. 587.112 €. Team member.
- 6 **Project.** PID2020-113544RB-I00, PROPHACTION - Protein Recovery and PHA Production from Biomass Generated in WWTPs. Spanish Ministry of Science and Innovation. Silvia Bolado Rodríguez. (Institute of Sustainable Processes (ISP-UVa)). 01/09/2021-31/05/2025. 169.400 €. Team member.
- 7 **Project.** VA266P20, Monitoring of the New SARS-CoV-2 Virus in Wastewater Treatment Plants in Castilla y León and Development of an Online Early Warning Platform for Infection Based on Wastewater Data. Regional Government of Castilla y Leon co-funded by FEDER. Pedro A. García Encina. (Institute of Sustainable Processes (ISP-UVa) - SOCIEDAD PUBLICA DE INFRAESTRUCTURAS Y MEDIO AMBIENTE DE C&L, S.A. - AQUAVALL - CONSEJERIA DE SANIDAD Y BIENESTAR SOCIAL DE CYL). 06/11/2020-31/10/2023. 264.000 €. Team member.
- 8 **Contract.** Research project for the destruction of narcotic drugs TECYSA. Pedro Antonio García Encina. (Institute of Sustainable Processes (ISP)). 05/10/2021-05/09/2022. 5.714 €.
- 9 **Contract.** Optimization of photosynthetic biological processes for urban wastewater reuse Elecnor S.A.. Rebeca López Serna. (Institute of Sustainable Processes (ISP)). 01/09/2020-01/09/2021. 40.638 €.