

(CVA)

Part A. PERSONAL INFORMATION

First name	Salvadora		
Family name	Martínez López		
Gender (*)	Female	Birth date	
Social Security, Passport, ID number			
e-mail		URL Web	
Open Researcher and Contributor ID (ORCID) (*)			

(*) *Mandatory*

A.1. Current position

Position	Titular Professor		
Initial date	22/12/2023		
Institution	University of Murcia		
Department/Center	Department of Agricultural Chemistry Geology and Pedology	Faculty of Chemistry	
Country	Spain	Teleph. number	
Key words	Mineralogy, geochemistry, potentially toxic elements, marine sediment		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
2008-2011	Research fellow /University of Murcia/ Spain/ End of research project
2011-2015	Contract research project /University of Murcia/ Spain/ End of research project
2017-2021	Associate Professor University of Murcia/ Professional change
2018-2021	Contract European research project/University of Murcia/Spain/ Professional change
2021-2022	Assistant Professor Doctor/University of Murcia/Spain/Professional change
2022-21/12/2023	Permanent Associate Professor /University of Murcia/Spain/ Professional change
22/12/2023-Actuality	Titular Professor /University of Murcia/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Degree in Environmental Sciences	University of Murcia	2005
Master in environmental management	Official Industrial Engineers Association	2006
Master contaminated soils	University of Murcia	2007
Master in chemical technologies	University of Murcia	2008
Thesis	University of Murcia	2010

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

My research career began in 2008 when I obtained a Collaboration Grant in the Contaminated Soils research group, aimed at initiation in the field of research, which I carried out for 3 years and which concluded with the defence of my doctoral thesis in 2010. This doctoral thesis was awarded as the best National Thesis in Earth Sciences and in 2011 I was awarded the Gómez Pardo Foundation Prize of the Royal Academy of Doctors of Spain. Until 2015 I was contracted in different research projects aimed at generating knowledge in geochemistry and mineralogy



of potentially toxic elements in degraded soils, dredged materials, as well as analysis of risks to human health and ecosystems.

During my early doctoral and postdoctoral years, I obtained experience in teaching undergraduate and graduate students, greatly improved my skills in the application of geochemical, mineralogical and crystallographic techniques and methodologies.

In 2017 I started as an associate lecturer in the Area of Crystallography and Mineralogy at the University of Murcia, gaining experience in undergraduate and master's degree teaching. Since then I have obtained several teaching positions: Associate Professor of the University of Murcia, belongs to the Department of Agricultural Chemistry, Geology (since 2017), Pedology Permanent Associate Professor (since 2022), currently Titular Professor of the University of Murcia (since december 2023). I have 2 teaching five-year merit awards (2008-2013; 2017-2023).

During my research and teaching career I have been involved in a European research project (LIFE AMDRYC4), one national research project, 15 contracts with companies (6 as principal researcher) and 4 agreements with national and European public entities.

The results of my research represent an advance in the study and generation of knowledge in technologies for the recovery of contaminated soils, dredged marine sediments, risk analysis for human health and transfer of pollutants to the biotic environment. In parallel, we have also developed another line of research "Eco-efficient solutions to achieve neutral land degradation and adaptation to climate change", where we have developed a European Life project and where we have obtained results to lay the foundations for the creation of emission credits using soil as a CO₂ sink. We are currently in contact with the largest national transport company in Spain to sign a chair for research on CO₂ neutrality of road transport.

The result of the research carried out is: Publication of 13 book chapters and has coordinated and edited five books, as well as 25 articles (16 included in Q1, 5 in Q2, 2 in Q3 and 2 in Q4) in journals included in the JCR and another 19 not included in JCR journals. Recognition of two six-year research periods (2008-2013 and 2014-2021). Has directed 28 master's degrees and three master's theses. Has supervised two doctoral theses.

My participation in congresses (77), conferences (2), tribunals (54), etc., is very active, and I have also carried out academic management tasks and been a member of committees in the Faculty of Biology. (<https://portalinvestigacion.um.es/investigadores/331140/publicaciones>).

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

C.1. Publications (*see instructions*)

In Situ Use of Mining Substrates for Wetland Construction: Results of a Pilot Experiment

C Hernández-Pérez, S Martínez-López, MJ Martínez-Sánchez, LB Martínez-Martínez, ML García-Lorenzo, Carmen Perez Sirvent. *Plants* 2024, 13, 1161.
<https://doi.org/10.3390/plants13081161>

Machine learning-driven modeling for soil organic carbon estimation from multispectral drone imaging: a case study in Corvera, Murcia (Spain). IE Jamaoui, MJ Martínez Sánchez, C Pérez Sirvent, AA Mana, S Martínez López. *Modeling Earth Systems and Environment*, 2024 <https://doi.org/10.1007/s40808-024-01963-y>

The Arsenic Biogeochemical Cycle: A Review

S.Martínez López,*A. Banegas García, C. Pérez Sirvent, M.J. Martínez Sánchez, M.A. Esteban Abad. *Advances in Environmental and Engineering Research, Open Access* 4, issue 4 (2023).

Optimisation of the chemical immobilisation by limestone filler of heavy metals and metalloids in contaminated soils via response surface methodology (RSM). J.M.Veiga del Baño, S. Martínez-López, C. Pérez Sirvent, M.J. Martínez Sánchez, P. Andreo-Martínez. *Minerals Engineering* 201 (2023) 108211

Trends in dithiocarbamates food research: A bibliometric visión. J.M. Veiga del Baño, S. Martínez-López, G. Pérez-Lucas, J.J. Cuenca-Martínez, P. Andreo-Martínez. *Chemosphere* 313 (2023) 137342.

Immunometabolic involvement of hepcidin genes in iron homeostasis, storage, and regulation in gilthead seabream (*Sparus aurata*). J.A. Serna-Duque, C. Espinosa Ruiz, S.



Martínez López, A. Sánchez Ferrer, M.A. Esteban Abad. *Front. Mar. Sci.* 9:1073060. doi: 10.3389/fmars.2022.1073060

Uptake of potentially toxic elements by edible plants in experimental mining technosols: preliminary assessment. M. J. Martínez-Sánchez; S. Martínez-López; M. L. García-Lorenzo; C. Pérez-Sirvent; I. Agudo; L. B. Martínez-Martínez; C. Hernández-Pérez; J. Bech. *Environmental Geochemistry and Health.* 1, pp 1-17. 2021

Do old mining areas represent an environmental problem and health risk? a critical discussion through a particular case. S. Martínez López; M.J. Martínez Sánchez; C. Pérez Sirvent. *Minerals.* 11, pp 594, 2021

Assessment of risk from lead intake in mining areas: proposal of indicators. C. Pérez-Sirvent; L. B. Martínez-Martínez; S. Martínez López; C. Hernández- Pérez; M. L. García-Lorenzo; J. Bech; M. J. Martínez-Sánchez. *Environmental Geochemistry and Health.* 1, pp 1-17.2021

Arsenic zoning in a coastal area of the mediterranean sea as a base for management and recovery of areas contaminated by old mining activities. S. Martínez López; M. J. Martínez Sánchez; M. C. Gómez Martínez; C. Pérez Sirvent. *Applied Clay Science.* 199, 1-12.2020.

Assessment of the risk associated with mining-derived arsenic inputs in a lagoon system. S. Martínez-López, M. J. Martínez-Sánchez, M.C. Gómez-Martínez, C. Pérez-Sirvent. *Environmental geochemistry and health.*1-12. 2019.

Potential bioavailability assessment and distribution of heavy metal(oids) in cores from Portman Bay (SE, Spain). M. L. García-Lorenzo, C. Pérez-Sirvent*, M. J. Martínez-Sánchez, J. Molina-Ruiz, S. Martínez, X. Arroyo, L. B. Martínez-Martínez, J. Bech. *Geochemistry: Exploration, Environment, Analysis.* Vol. 19 | 2019 | pp. 193–200.

Inorganic arsenic causes apoptosis cell death and immunotoxicity on European sea bass (*Dicentrarchus labrax*). H Cordero, P Morcillo, S Martínez, J Meseguer, C Pérez-Sirvent, E. Chaves-Pozo, M.J. Martínez-Sánchez, A. Cuesta, M A. Esteban. *Marine pollution bulletin* 128, 324-332. 2018

Proposals for the Remediation of Soils Affected by Mining Activities in Southeast Spain. C. Pérez-Sirvent, M.J. Martínez-Sánchez, M.L. Garcia-Lorenzo, S. Martínez-López, C. Hernández, L. B. Martínez, J. Molina, J. Bech. *Assessment, Restoration and Reclamation of Mining Influenced Soils*, 297-328. 2017

Ecoefficient In Situ Technologies for the Remediation of Sites Affected by Old Mining Activities: The Case of Portman Bay. M.J. Martínez-Sánchez, C. Pérez-Sirvent, M.L. García-Lorenzo, S. Martínez-López, J. Bech, C. Hernández, L. B. Martínez, J. Molina. *Assessment, Restoration and Reclamation of Mining Influenced Soils*, 355-373.2017.

Head kidney, liver and skin histopathology and gene expression in gilthead seabream (*Sparus aurata* L.) exposed to highly polluted marine sediments from Portman Bay (Spain). S. Ben Hamed, F.A. Guardiola, A. Cuesta, S. Martínez, M. J. Martínez-Sánchez, C. Pérez-Sirvent, M. A. Esteban. *Chemosphere* 174, 563-571. 2017

Influence of waterborne arsenic on nutritive and potentially harmful elements in gilthead seabream (*Sparus aurata*). C. Pérez-Sirvent, M. J. Martínez-Sánchez, Salvadora Martínez López, Maria del Carmen Gómez Martínez, F. A. Guardiola, M. A. Esteban. *Environmental monitoring and assessment* 188 (11), 620. 2016

Exposure of the gilthead seabream (*Sparus aurata*) to sediments contaminated with heavy metals down-regulates the gene expression of stress biomarkers. S. Benhamed, F. A. Guardiola, S. Martínez, M.J. Martínez-Sánchez, C. Pérez-Sirvent, M. Mars, M.A. Esteban. *Toxicology Reports* 3, 364-372.

The analysis of risks for human health in the paradigm of contaminated soil management: the case of Portman Bay. M. J. Martínez Sánchez, M. L. García Lorenzo, S. Martínez López, L. B. Martínez Martínez, C. Hernández Pérez, C.Pérez-Sirvent. *Revista de Salud Ambiental* 15 (2), 103-112. 2015.

Innovación en la Gestión e Investigación Ambiental. 2015. Editora y coordinadora: Salvadora Martínez López. ISBN: 978-84-16296-15-6. D.L. MU 81-2015

Use of bioassays for the assessment of areas affected by phosphate industry wastes. M.J. Martínez-Sánchez, C. Pérez-Sirvent, M.L. García-Lorenzo, S. Martínez-López, J. Bech, R. García-Tenorio, J.P. Bolívar. *Journal of Geochemical Exploration* 147, 130-138. 2014.



Screening of wild plants for use in the phytoremediation of mining-influenced soils containing arsenic in semiarid environments. S. Martínez-López, M. J. Martínez-Sánchez, C. Pérez-Sirvent, J. Bech, M. C. Gómez Martínez, A. J. García-Fernández. *Journal of Soils and Sediments*, 2014, Volume: 14, Issue 4, 794-809.

Heavy metal immobilisation by limestone filler in soils contaminated by mining activities: Effects on metal leaching and ecotoxicity. M. J. Martínez-Sánchez, M. L. García-Lorenzo, C. Pérez-Sirvent, E. González, V. Pérez, S. Martínez López, L. B. Martínez, J. Molina. *International Journal of Mining, Reclamation and Environment*, 2014.

Screening of wild plants for use in the phytoremediation of mining-influenced soils containing arsenic in semiarid environments. S. Martínez-López, M. J. Martínez-Sánchez, C. Pérez-Sirvent, J. Bech, M. C. Gómez Martínez, A. J. García-Fernández. *J Soils Sediments*. DOI 10.1007/s11368-013-0836-6

Accumulation, histopathology and immunotoxicological effects of waterborne cadmium on gilthead seabream (*Sparus aurata*). F.A. Guardiola, A. Cuesta, J. Meseguer, S. Martínez, M.J. Martínez-Sánchez, C. Pérez-Sirvent, M.A. Esteban. *Fish & Shellfish Immunology*, 35. 2013, 792–800.

Immunotoxicological effects of inorganic arsenic on gilthead seabream (*Sparus aurata* L.). F.A. Guardiola, M.P. González-Párraga, A. Cuesta, J. Meseguer, S. Martínez, M.J. Martínez-Sánchez, C. Pérez-Sirvent, M.A. Esteban. *Aquatic Toxicology*, Volumes 134–135, 15. 2013, 112-119.

Importance of the Arsenic Bioaccessibility Factor for characterising the risk associated with soil ingestion in a mining-influenced zone. M. J. Martínez-Sánchez, S. Martínez-López, L. B. Martínez-Martínez, C. Pérez-Sirvent. *Journal of Environmental Management*, Volume 116, 15 February 2013, 10-17.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

18 participations in National and 54 International Congresses (Germany, Austria, Italy, Chile, Georgia USA, Finland, England, Korea, France, Switzerland) (papers, conferences and posters) 59 in the last 10 years.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

Complementary studies of characterisation and evaluation of the use of the sediments of the beach front from Cabezo del Puerto to the beach from Cabezo del Puerto to Playa de la Isla (El Gachero) in Puerto de Mazarrón. TRAGSA. 2014.

Environmental Document for the simplified strategic environmental assessment. Regional Ministry of Development and Infrastructure of the Region of Murcia. 2017-2018. Principal Investigator: Salvadora Martínez López.

Drafting of the environmental sustainability report of the special plan for the general airport system of the new airport of the Region of Murcia. Department of Development and Infrastructure of the Region of Murcia. 2018-2019. Principal Investigator: Salvadora Martínez López.

Study of the state of the art of research, studies, publications and lines of research initiated by the different administrations, universities and other scientific bodies on mining operations in the Sierra Minera de Cartagena- La Unión. Regional Ministry of Employment, Universities, Enterprise and the Environment of the Region of Murcia. 2019. Principal Investigator: Salvadora Martínez López.

Preliminary soil report on the characterisation of potentially contaminated soils in Peñarroya. (Cartagena, Murcia). TECNICA Y PROYECTOS SA (TYPESA Group). 18/03/2021 a 17/07/2021. Principal Investigator: Salvadora Martínez López.

Report on the analysis of the risks associated with the activity (ACR)P potentially contaminated soils of Peñarroya. (Cartagena, Murcia). TECNICA Y PROYECTOS SA (TYPESA Group). 10/08/2021 a 09/11/2021. Researcher in charge: Salvadora Martínez López.

Simplified characterisation of sediments in the Cartagena dock. Port Authority of Cartagena (APC). Duration: 15/09/2021 to 14/12/2021. Principal Investigator: Salvadora Martínez López.

Modelling of the dynamics of arsenic and mercury contamination in the area of maritime-terrestrial influence of the port area of Cartagena. Funding entity: Chair of the



Environment. Port Authority of Cartagena- University of Murcia (CMA_APC_CMN 21). Duration: 09/02/2022 to 08/02/2023. Principal Investigator: Salvadora Martínez López.

Life 2016 climate change adaptation – climate change adaptation of dryland agricultural systems in the mediterranean area. European Commission. Duration: 18/03/2018-30/12/2022.

C.4. Contracts, technological or transfer merits.