

CURRICULUM VITAE ABREVIADO

SHORT CV

Part A. Personal Information		DATE	12/08/2020
Surname(s)	Silvia		
Forename	Bolado Rodriguez		
	SCOPUS Author ID	22035941900	
	Open Researcher and Contributor ID (ORCID)	0000-0003-0941-3306	

A.1. Current position

Post/ Professional Category	Full Professor		
UNESCO Code	330200; 3303		
Key Words	Biomass, wastes, bioprocesses, microalgae, biofuels, adsorption, crystallization, valorisation, pretreatment, mass transfer, phase equilibria, enzymes		
Name of the University/Institution	University of Valladolid		
	Department/Center	Chemical Engineering and Environmental Technology. Industrial Engineering School	
	Full Address	Dr Mergelina s/n 47005 Valladolid	
	Email Address	silvia@iq.uva.es	
	Phone Number	+34983423958	
Start date	02/21/2000		

A.2. Education (*title, institution, date*)

<i>Year</i>	<i>University</i>	<i>Degree</i>	<i>Title</i>
1990	University of Valladolid	Masters	Title Chemistry Sciences
1995	University of Valladolid	PhD	Title Chemistry Doctorate

A.3. Indicators of Quality in Scientific Production

a) From the Scopus data (12 August 2020) Documents: 63; 1400 total citations by 1139 documents
Average number of citations during the last five years: 181 cites per year

From the Google Scholar data (12 August 2020) Documents: 122; 2033 total citations
Average number of citations during the last five years: 249 cites per year

b) Total number of publications in the first quartile (Q1): 37
and first decile (D1): 21

c) Scopus h index: 20; Google Scholar h index: 24

d) PhD Thesis supervised and finished: 8. PhD Thesis under supervision currently: 3

e) External quality research accreditation by the National Agency for Quality Assessment and Accreditation of Spain, ANECA, during 4 six-years periods, from 1992 to 2015.

Part B. Free Summary of CV

Full Professor of the Department of Chemical Engineering and Environmental Technology of the University of Valladolid, Degree in Chemical Sciences (1990) and Doctor by the University of Valladolid (1995), both qualified with Extraordinary Award. She has completed her training with various postdoctoral stays in prestigious centers such as the CNRS in Orleans, the University of Arizona, the University of Bradford or Washington State University. She also maintains a long and continuous collaboration with the

University of Antofagasta in Chile, of which she has been a guest professor on several occasions and participated in multiple research projects and shared publications. Since 1991, she has been teaching and researching at the University of Valladolid, with four recognized six-year terms, corresponding to 24 consecutive years (1992-2015). She is the coordinator of the Acknowledged Research Group of the UVA and member of the Consolidated Research Unit of the Castilla y León Board of Environmental Technology and of the Institute of Sustainable Processes (Excellent Research Institute in the region of Castilla y León).

Accredited as full professor since 2014, she has worked in different lines of research, closely related to the industry, such as studies of concentrated salt solutions, crystallization and adsorption processes and physical-chemical treatment of wastewater. During the last years she is responsible for the research line on Residual Biomass Valorization within the Environmental Technology Group, focusing her research on the fractional valorization of residual biomass, working with different pre-treatments, hydrolysis and fermentations to extract and transform the carbohydrate fraction of lignocellulosic waste and algal biomass from wastewater treatment plants to obtain bioenergy and bioproducts. She has participated in 31 public scientific research projects, with international, European, national and regional funding. She has been the Main Investigator in 8 of these research projects with public funding, two of them European and two currently in force. She has also participated in 14 research contracts with companies (Article 83), being responsible for 11 of them. As a result of this research work, she has published 60 articles, 37 of them being in the first quartile (Q1) JCR. She is also co-author of a book indexed in ISI and 7 book chapters, 63 scientific communications to Congresses and has given several invited lectures in international forums. Besides, she has developed an extensive teaching research work, participating in 10 teaching innovation projects, two of them European, financed by Erasmus. She was the coordinator of two of them, and the responsible from her University in the two European academic projects. In this field, she has realized an important work of diffusion, mainly in congresses and participating as an expert in different forums.

She has directed 8 Doctoral Theses, all of them with the highest qualification and currently she is director and supervisor of Thesis of 3 PhD students. To this work, it should be included the direction of many Final Master's Projects, Final Degree Projects and Research Projects.

She is a member of the European network EUAlgae (ES1408 COST ACTION), of the RENUWALL network (CYTED 320RT005) for collaboration with Latino America about wastewater treatment photobioreactors, of the European group BIOCEN to produce biofuels, and of the BIOPLAT technology platform.

Part C. Relevant accomplishments

C.1. 10 Publications

1. Martín-Juárez, J., Vladoic, J., **Bolado-Rodríguez, S.**, Vidovic, S. 2020. Sequential valorisation of microalgae biomass grown in pig manure treatment photobioreactors. *Algal Research*, 50, 101972 .
2. Savio, S., Farrotti, S, Paris, D., Arnaiz, E., Díaz, I, **Bolado, S.**, Muñoz, R., Rodolfo, C., Congestri, R. 2020. Value-added co-products from biomass of the diatoms *Stauriosirella pinnata* and *Phaeodactylum tricornutum*. *Algal Research*, 47, 101830.
3. Saavedra, R., Muñoz, R., Taboada, M.E., **Bolado, S.** 2019. Influence of organic matter and CO₂ supply on bioremediation of heavy metals by *Chlorella vulgaris* and *Scenedesmus almeriensis* in a multimetallic matrix. *Ecotoxicology and Environmental Safety*. 182
4. Martín-Juárez, J., Vega-Alegre, M., Riol-Pastor, E., Muñoz-Torre, R., **Bolado-Rodríguez, S.** 2019. Optimisation of the production of fermentable monosaccharides from algal biomass grown in photobioreactors treating wastewater. *Bioresource Technology*. 281, pp 239-249.
5. García, D., de Godos, I., Dominguez, C. Turiel, S., **Bolado, S.** Muñoz, R. 2019. A systematic comparison of the potential of microalgae-bacteria and purple phototrophic bacteria consortia for the treatment of piggery wastewater. *Bioresource Technology*. 276, 18-27.
6. Lorenzo, A., Ruíz Vega, J., **Bolado, S.** 2019. Recovery of proteins from biomass grown in pig manure microalgae based treatment plants by alkaline hydrolysis and acidic precipitation. *Bioresource Technology*. 273. 599-607.

7. Saavedra R, Muñoz Torre R, Taboada M.E, Vega M, **Bolado S** 2018. Comparative uptake study of arsenic, boron, copper, manganese and zinc from water by different green microalgae *Bioresource Technology*. 263, pp.49-58.
8. Martín Juárez, J.; Riol Pastor, E.; Fernández Sevilla, J.M.; Muñoz Torre, R.; García Encina, P.A.; **Bolado, S.** 2018. Effect of pretreatments on biogas production from microalgae biomass grown in pig manure treatment plants *Bioresource Technology*. 257, pp.30-38.
9. Lorenzo, A.; Martín Juárez, J.; **Bolado, S.** 2018. Study of steam explosion pretreatment and preservation methods of commercial cellulose *Carbohydrate Polymers*. 191, pp.234-241.
10. García, D., Posadas, E., Blanco, S., Acién, G., García-Encina, P., **Bolado, S.**, Muñoz, R. 2018. Evaluation of the dynamics of microalgae population structure and process performance during piggery wastewater treatment in algal-bacterial photobioreactors. *Bioresource Technology*. Elsevier. 248, pp.120-126.

C.2. Research Projects and Grants (last five years)

- DEEP PURPLE Conversion of diluted mixed urban bio-wastes into sustainable materials and products in flexible purple photobiorefineries. H2020-BBI-JTI-2018. Topic: BBI.2018.S01.D2. Type of action: BBI-IA-DEMO. European Union. PI: Raúl Muñoz Torre. From 06/2019 to 06/2023. 560,903.75 € (UVa). Researcher
- VA281P18 Exploring the potential of molecular tools to improve the biological conversion of biomethane to high added-value products. Consejería de Educación JCyL. PI: Pedro A. García Encina. From: 11/2018 to 10/2021. 120,000€. Researcher.
- Excellence Strategic Programme of Institute of Sustainable Processes of University of Valladolid. Junta de Castilla y León. PI: Pedro A. García Encina. From: 09/2018 to 09/2022. 850,000 €. Guarantee researcher.
- CTQ2017-84006-C3. Optimization of the production of value-added bio-products and the recovery of water from manure treatment with microalgae. MICINN RETOS 2017. PI: Silvia Bolado, coordinator of the project with University of Almeria. From: 1/2018 to: 12/2020. 266,200 € (total); 127,050 € (UVa partner). Coordinator and Principal Investigator of subproject 1.
- VA080G18. Modelling and sequential valorization of microalgae biomass grown in pig manure treatment plants (BIOPURAL). Consejería de Educación Junta de Castilla y León. PI: Silvia Bolado. From: 4/06/2018 to 31/12-2020. 20,000€. Principal Investigator.
- New coupled microalgae-bacteria processes for bionversion of CO₂ from biogas into biopolymers and for biomethane production. Fundación Domingo Martínez. PI: Raúl Muñoz Torre. From: 01/06/2018 to 31/06/2021. 120,000€. Researcher
- High Resolution UHPLC/MS/MS. INFRARED equipment. Junta de Castilla y León. PI: Pedro A. García Encina. From: 02/2018 to 10/2018. 499,900 €. Researcher
- URBIOFIN: Demonstration of an integrated innovative biorefinery for the transformation of Municipal Solid Waste (MSW) into new BioBased products. Horizon 2020 / BBI-JU European Union. PI: Raúl Muñoz; Raquel Lebrero (UVa). From: 06/2017 To: 05/2021. 1,019,025 € (UVa). Researcher.
- VA067U16: Study of micro contaminant removal in biological wastewater treatment systems and its effect on microbial communities' growth. Junta de Castilla y León (Regional Government). PI: Pedro García Encina (University of Valladolid) From 03/2016 To 07/2018. 120,000€. Researcher.
- RTA2013-00056-C03-02. Nutrient recovery from agroindustrial effluents via microalgal biomass growth and valorization. INIA-MINECO (Spanish Government). PI: Silvia Bolado (University of Valladolid). From: 10/2014 To 12/2017. 86,754€. Principal Investigator.
- VA094U14. Valorization of agrofood wastes via bioenergy and bioproduct in microalgae processes. Junta de Castilla y León (Regional Government). PI: Silvia Bolado (University of Valladolid). From: 01/2015 To 09/2017. 28,865€. Principal Investigator.

C.3. Contracts (last ten years)

Potential of different adsorbents to remove Arsenic and Nitrate from water. LECA Norway PI: Silvia Bolado Rodríguez, Marisol Vega Alegre. From: 08/2020 to 10/2020. 3,430 €. Principal Investigator.

Preliminary study of aluminium removal potential of Filtralite HMR LECA Norway PI: Silvia Bolado Rodríguez, Marisol Vega Alegre. From: 09/2019 to 1/2020. 5,030 €. Principal Investigator.

Characterization of celluloses for process optimization. MAXAMCORP HOLDING S.L. PI: Silvia Bolado (University of Valladolid). From: 09/2017 to 03/2018. 8,039 €. Principal Investigator.

Characterization and pretreatment of celluloses. MAXAMCORP HOLDING S.L. PI: Silvia Bolado (University of Valladolid). From: 05/2015 to 09/2015. 27,800 €. Principal Investigator.

Prototype of a system for self-generation of energy in zero-energy buildings from anaerobic digestion of organic solid waste. 1 A Consultores. PI: Pedro A. García & Silvia Bolado (University of Valladolid). From: 05/2014 To:12/2014. 2,400€. Principal Investigator.

Production of biogas from agricultural and livestock wastes. gricola Optimization of semibatch pilot plant. 1 A Consultores. PI: Silvia Bolado & Pedro A. García (University of Valladolid). From: 9/2012 To 02/2013. 10,000€. Principal Investigator.

A study of the biogas generation potential from Cereal straw in a semi-continuous pilot plant. 1 A Consultores. PI: Pedro A. García & Silvia Bolado (University of Valladolid). From: 06/2011 To: 12/2011. 10,000€. Principal Investigator.

Valorization of byproducts of biofuels production processes for animal feed. UVESA. PI: Silvia Bolado & M^a Teresa García (University of Valladolid). From: 01/2010 To: 03/2012. 57,159€. Principal Investigator.

Recovery of thiocyanates from industrial wastewater. Arcelor- Mittal. PI: Silvia Bolado & Ángel Cartón (University of Valladolid). From: 01/2010 To: 12/2010. 25,594€. Principal Investigator.

Others

Research stays in CNRS (Orleans, France), University of Bradford (UK), University of Arizona (USA), Washington State University (USA), Tamk University (Finland), Universidad de Antofagasta (Chile), Ostfalia University (Germany), University of Bielsko-Biala (Poland), Silesian University of Technology (Poland), DTU (Denmark), University of ITMO (Russia).

Academic Project: 585761-EPP-1-2017-1-FI-EPPKA2-CBHE-JPP. Enhancing Competences of Sustainable Waste Management in Russian and Kazakh HEIs – EduEnvi. Erasmus K+: KA2 – Cooperation for innovation and the exchange of good practices – Capacity Building in the field of Higher Education. PI Ella Kalio (Tamk). From: 01/2018 To: 10/2020. 998,896 €. PI University of Valladolid.

Academic Project: Strategies for bioenergy and biofuel production –Life cycles, assessment and evaluation. UE Erasmus Lifelong Learning Programme. Intensive Programm. PI: Thorsten Ahrens. Ostfalia University. From: 10/2009 To: 09/2012. 89,730 €. Responsible of the team from the University of Valladolid.

Member of the Editorial Board of Bioresource Technology (Elsevier), Guest Editor for Bioresource Technology of NHBT 2019 Special Issue. Reviewer of different scientific journals

Member of Organizing and Scientific Committees of International Congresses (Biorestec 2020, NHBT 2019, IWAAlgae 2019, in the last years)

Member of the European COST Action EUAlgae (ES1408 COST ACTION), RENUWALL network (CYTED 320RT005) for collaboration with Latino America, Spanish Technological Platform of Biomass, BIOPLAT (CDTI) and the European group BIOCEN for research in Biofuels

Evaluator of research projects for Spanish national and regional Governments and for the CHAMADA PUBLICA MCTI/CNPQ/CAPES/FAPS (Brazil)

Extraordinary Award of Degree in Chemistry. University of Valladolid

Extraordinary Award of PhD in Chemistry. University of Valladolid.