

Part A. PERSONAL INFORMATION

CV date	November 2020
----------------	---------------

First and Family name	Javier Rufino Viguri Fuente		
Social Security, Passport, ID number		Age	
Researcher numbers	Researcher ID	K-4011-2014	
	Orcid code	0000-0002-6658-0429	

A.1. Current position

Name of University/Institution	Universidad de Cantabria		
Department	Química e Ingeniería de Procesos y Recursos / Escuela Técnica Superior de Ingenieros Industriales y Telecomunicación (ETSIIIT).		
Address and Country	Avenida Los Castros, s/n. 39005 SANTANDER		
Phone number	942201589	E-mail	vigurij@unican.es
Current position	Catedrático Universidad (Full Professor)	From	12.07.2002
Espec. cód. UNESCO	3303		
Key words	Industrial waste. Valorization Technologies. Sediments CCS. Risk evaluation. Mobility of pollutants		

A.2. Education

Bachelor / Degree / PhD	University	Year
Chemical Sciences Bachelor	UNIVERSIDAD PAIS VASCO - UPV/EHU	1983
Chemical Sciences PhD	UNIVERSIDAD PAIS VASCO - UPV/EHU	1989

A.3. JCR articles, h Index, thesis supervised...

6 research sexenios (six years periods) (5 Research +1 Transfer); last granted in 2015.
 8 Theses supervised in the last 10 years (5 International Mention, 1 Industrial Mention)
 Total citations: 1771 in Web of Science (2790 in Google Scholar); Average citations / year, for the last 5 years (2020 not included): 129 (Web of Science). Average Citations per Article: 17.36
 Total publications in first JCR quartile (Q1): 55
 Index h: 25 Web of Science and 25 Scopus.

Part B. CV SUMMARY (max. 3500 characters, including spaces)

Graduated in Chemical Sciences (1983) and Doctor in Chemical Sciences from the University of the Basque Country UPV-EHV in 1989. Between 1989 and 1992 he develops his professional activity as Head of laboratory of the company "Sociedad Anónima de Descontaminación y Eliminación de Residuos" (SADER, SA) (1989) and as Head of the Department of Air Quality of Bizkaia in the Basque Government, Bilbao (1990-1992). In September 1992 he joined the University of Cantabria (UC) where he currently leads the research group GER (www.geruc.es) as Professor of Chemical Engineering.

The current and future research interests of Prof. Viguri are related to the design of waste recovery processes, development and application of resource management tactics and decision making on process systems towards sustainability and circular economy:

- Characterization, control, environmental evaluation and sustainable management of industrial waste and marine sediments.
- Lines of evidence for risk assessment in CO₂ Capture and Storage (CCS) technologies.
- Strategies and practices related to knowledge management and decision-making processes in the waste area.
- Design of processes and systems that include the integration between available flows of matter and energy, integrating aspects addressed by the group such as Process System-Biorefinery-Decision making tools-Resources valorization.
- Analysis and modeling of MBBR systems.

He develops his research activity, initially in UPV/EHU and later in the UC, through the coordination, direction and collaboration in RT&D Projects at an International, European and National level, both of a basic nature and in collaboration with the industrial sector. He has

obtained five research six years of the CNEAI, supported by more than 100 international articles in indexed journals (Categories of Chemical Engineering, Environmental Sciences, Environmental Engineering, Analytical Chemistry and Materials Science), 10 book chapters with ISBN and 15 articles in the journal Nationals; 200 communications to International Congresses and for the granting of 1 invention patent. Direction of 10 Doctoral Theses. Member of the Editorial Board of the journal "Integrated Environmental Assessment & Management", of SETAC. He develops a 35-week stay (2010) at the Chemical Engineering Department, Carnegie Mellon University, Pittsburgh (USA).

Since 1992, he has taught subjects in the area of Chemical Engineering in different degrees and currently in the Degree in Chemical Engineering and Degree in Engineering in Industrial Technologies. Participates in teaching in the third cycle of the Official Postgraduate Program (Master and Doctorate) with a Mention of Quality MEC "Chemical and Process Engineering" (1994/2013); currently participates in the "Official Master's Degree in Research in Industrial Engineering" of the UC and the "Erasmus Mundus Master in Water and Coastal Management" Program, of the University of Cádiz (2007 / Actual), as well as in the Doctorate Program "Industrial Engineering" of the UC. Coordinator of various courses of UC-specific degrees, Summer Courses and Continuing Education, in the field of Chemical Engineering and in the Environmental Sciences field.

Part C. RELEVANT MERITS

C.1. Publications (including books)

- Rodríguez-Romero, A., Ruiz-Gutiérrez, G., Viguri, J.R., Tovar-Sánchez, A., **2019**, Sunscreens as a new source of metals and nutrients to coastal waters. *Environ. Sci. Technol.*, 53, 10177–10187.
- Galán, B., Viguri, J.R., Cifrian, E., Dosal, E., Andres, A., **2019**, Influence of input streams on the construction and demolition waste (CDW) recycling performance of basic and advanced treatment plants. *J.Clean. Prod.* 236, 117523. <https://doi.org/10.1016/j.jclepro.2019.06.354>
- Muñoz, I, Cifrian, E., Andrés, A., San Miguel, G., Ruiz, D., Viguri J.R., **2018**, Analysis of environmental benefits associated with the incorporation of Waelz slag into fired bricks using LCA. *Construction and Building Materials*, 168, 178–186.
- Martín-Torre M.C., Cifrian, E., Ruiz G., Galán B., Viguri J.R., **2017**, Estuarine sediment resuspension and acidification: Release behaviour of contaminants under different oxidation levels and acid sources. *Journal of Environmental Management* 199, 211-221.
- Revilla M., Galan B., Viguri J.R., **2016**, Analysis and modelling of predation on biofilm activated sludge process: Influence on microbial distribution, sludge production and nutrient dosage. *Bioresource Technology*, 220, 572-583.
- Revilla M., Galan B., Viguri J.R., **2016**, An integrated mathematical model for chemical oxygen demand (COD) removal in moving bed biofilm reactors (MBBR) including predation and hydrolysis. *Water Research* 98, 84-97.
- Martín-Torre, M.C., Payán, M.C., Verbinnen, B., Coz, A., Ruiz, G., Vandecasteele, C., Viguri, J.R., **2015**, Metal Release from Contaminated Estuarine Sediment Under pH Changes in the Marine Environment. *Archives of Environmental Contamination and Toxicology*, 68:577–587.
- Payán, M.C., Galán, B., Ruiz, G., Coz, A., Viguri, J.R., **2013**, Pb and Zn release from intertidal marine sediment in contact with acidified CO₂ seawater: mathematical model for column leaching tests. *Chemical Engineering Science* 95, 85-93.
- Payan MC., Galan B. Coz A., Vandecasteele C., Viguri J., **2012**, Evaluation through column leaching tests of metal release from contaminated estuarine sediment subject to CO₂ leakages from Carbon Capture and Storage sites. *Environmental Pollution*.171, 174-184.
- Alvarez-Guerra M., Ballabio D., Amigo JM., Bro R., Viguri JR., **2010**, Development of models for predicting toxicity from sediment chemistry by partial least squares-discriminant analysis and counter-propagation artificial neural networks. *Environmental Pollution*. 158, 607-614.
- Alvarez-Guerra M., Canis L., Voulvoulis N., Viguri JR., Linkov I., **2010**, Prioritization of sediment management alternatives using stochastic multicriteria acceptability analysis. *Science of the Total Environment*. 408(20) 4354-4367.
- Alvarez-Guerra M, Ballabio D., Amigo J.M., Bro R., Viguri J.R., **2009**, Development of models for predicting toxicity from sediment chemistry by partial least squares discriminant analysis and counter-propagation artificial neural networks. *Environmental Pollution*.158: 607-614.
- Alvarez-Guerra M., Viguri JR., Voulvoulis N., **2009**, A multicriteria-based methodology for site prioritisation in sediment management. *Environment International*. 35 (6) 920-930.

C.2. Research projects and grants

- National Project RTI2018-098048-B-I00. El papel de los pingüinos en los ciclos biogeoquímicos de metales traza en el Océano Austral (PIMETAN). Programa estatal de I+D+I Retos, Convocatoria 2018. MICINN. IP: A. Tovar, 2019-2021, 272.250€. Investigador
- EU COST Action, CA15219 (2016-2019). Developing new genetic tools for bioassessment of aquatic ecosystems in Europe (DNAqua-Net). J.R. Viguri (MC Member).
- UE Project. FP7-KBBE.2012.3.4-02. New tailor-made biopolymers produced from lignocellulosic sugars waste for highly demanding fire-resistant applications BRIGIT. UE. 15 partners from 11 countries. University of Cantabria (5 researchers). IP: A. Coz, 2012-2016. 357.600 € UC. Investigador.
- National Project CTM2011-28437-C02-01. Efectos de fugas de CO₂ almacenado en formaciones geológicas marinas: Cinética de movilidad de metales en sedimentos marinos. CO2GS-EFFMET. Plan Nacional 2008-2011. MICINN. Partners: U. Cantabria, U. Cádiz, 01/2012-12/2014. 98.010 €. J. Viguri (Coordinador e IP).
- National Project CTM2008-06344-C03-01/TECNO. Análisis y modelado del comportamiento de lixiviación en condiciones dinámicas de la movilidad de metales de sedimentos marinos en contacto con fugas de CO₂ de procesos CS-SSGS. Plan Nacional 2008-2011. MICINN. Partners: UC, UCA, CSIC. Nº Researchers: 6. 01/2009-12/2011. 87.120 €. J. Viguri (IP).
- National PlanE, "Desarrollo de la iniciativa para la identificación, monitorización, biotecnología y conversión-valorización de cultivos energéticos "EUCAFUEL". Partners: INIA, UC, Valladolid, Alcalá de Henares y Bosques 2.000. A Coz (PI). 2009-2010. 284.417,00 € UC. Investigador
- National Project CTM2005-07282-C03-03. Aplicación de redes neuronales para el cálculo de criterios de calidad de sedimento y de tejido biológico. Plan Nacional 2004-2007, Partners: UC, UCA, AZTI. 2005-2008. 62.000€. JR. Viguri (Coordinador e IP).

C.3. Contracts

- Obtención, tratamiento y difusión de datos en materia de producción y gestión de residuos y adaptación del sistema de indicadores existente al nuevo plan de residuos de Cantabria. Gobierno Regional de Cantabria. E. Cifrian (IP). UC. 29/11/2017- 31/12/2020. 54.329€
- Valorization of fly ash in ceramic products and fly ash based products. Solvay Química, S.L.. A. Andrés (IP). 06/2015-07/2016. 35.090.- €.
- Actualización de los sistemas de indicadores del punto focal de residuos de Cantabria. Gobierno Regional de Cantabria. A. Andrés (IP). UC. 09/2014- 08/2015. 17.569,2 €
- Análisis de resultados y creación de modelos de electrodiálisis-ElectroModel. Solvay Química. J. Viguri (IP). 07/2012-03/2014. 75.986,79 €.
- Sistema de indicadores para el flujo sostenible de recursos y residuos en la Comunidad Autónoma de Cantabria: Punto focal de residuos de Cantabria. Gobierno Regional de Cantabria. A. Andres (IP), J. Viguri (co-IP). 2008-2012. 180.000 €.
- BEFESA, S.A. Prueba industrial de utilización de Ferrosita en la obtención de productos cerámicos: evaluación técnica y valorización ambiental. (56.016 €, 2008). Andres (PI); Comportamiento de lixiviación a tiempos largos de ferrosita (7.273 €, 2007) A. Andres (PI).
- Tradebe Group. Comportamiento ambiental de la deposición de residuos inorgánicos estabilizados en vertederos sostenibles. A. Andres (IP). (2.178 €, 2013) // Valorización de cenizas de incineración de residuos sólidos urbanos (RSU) en matrices cerámicas. (3.712,28 €, 2011). A. Andres (PI) // Valorización ambiental de los polvos de acería solidificados/estabilizados (Con y sin aditivos alternativos) en base a un sistema integral de evaluación. (19.819 €, 2007). Andres (PI) // Estudio del comportamiento de los polvos de acería solidificados/estabilizados.(18.948,6 €, 2004). A. Andres (PI).

C.4. Patents

Andrés Payán, A.M., Coz Fernández, A., Irabien Gulías, A., Ruiz Puente, M.C. Viguri Fuente, J.R. Procedimiento de inertización de lodos que contienen carga contaminante orgánica e inorgánica. **ES2187349 B2 (16.12.2004)**

C. 5. Invited Talks and Conferences

- "Decision Support Tools". SA.2.2 Biorefinery and industrial applications. Summer Course at University of Cantabria. Santander July, 2014.
- "Management of contaminated sediments: from detailed characterization to decision making". Key Note Lecture. 1st Int. Conf. WASTES: ST&O. Guimaraes, Portugal, Sep. 2011.

C. 6. Member of Editorial Board and Conference Advisory Committees.

- Member of the Editorial Board of the *Integrated Environmental Assessment and Management*, published on behalf of the Society for Environmental Toxicology & Chemistry, 2010-actual.
- International Scientific Committee and Member of the Local Organizing Committee, *WASCON 2015 International Conference*, Santander, Spain June, 2015.
- Guest Editor of Especial Issue (WASTES2013) of the *Waste Management Journal*, 2015.
- International Scientific Committee, 1st/2nd/3rd International Conference WASTES: Solutions, Treatments and Options (Wastes 2011/2013/2015). Portugal, 2011/2013/2015.
- International Scientific Committee, 8th *International Conference on the Environmental and Technical Implications of Construction with Alternative Materials (WASCON 2012)*, Gothenburg, Sweden, June, 2012.

C.7. International Postgraduate Committees and Spanish Thesis Committees

- Sviatlana Miafodzyeva. Understanding recycling behaviour of householders in the multicultural urban areas. Case study Jarva, Stockholm. Opponent of Licentiate Thesis, KTH Royal Institute of Technology, Industrial Ecology Dpt. Stockholm, Sweden, Sept 2012.
- Participation in 27 National Thesis Committees.

C.8. Referee Activities

- **Evaluation of National Plan Projects:** Participation as an expert in the research projects of the National Program of Environmental Sciences and Technologies - Subprogram of Technologies for Sustainable Environmental Management. Calls 2007 and 2009. Ministry of Education and Science.
- **Member of the Advisory Committee** 6 (1): Mechanical and Production Technologies of the National Commission to Evaluate the Research Activity - CNEAI, ANECA. (2017-2018)
- **Scientific Journals reviewer** with impact factor (55 papers) in the Chemical Engineering, Environmental Sciences, Environmental Engineering scientific areas

C.9. International Collaborations

- Dr. Philippe Gombert. Ground and Underground Division / Water and Gas Department. INERIS (French National Institute for Environment and Risks).
- Prof. Murat V. Ardelan. Dept of Chemistry at NTNU and Scientific adviser in SINTEF, Marine Environmental Technology, Norway.
- Prof. Carlo Vandecasteele. Dpt. of Chemical Engineering of KU Leuven, Belgium.
- Prof. Ignacio Grossmann and Prof. Nick Sahinidis. Center for Advanced Process Decision-making. Chemical Engineering Department. Carnegie Mellon University. Pittsburgh, USA.
- Prof. Rasmus Bro. University of Copenhagen, Copenhagen, Denmark.
- Prof. Nik Voulvoulis. Centre for Environmental Policy. Imperial College London. London, UK.

C.10. Student supervision (2004-actual)

- Currently 1 Ph.D.
- 11 Ph.D. Students: 4 FPI National Grant, 1 FPU National Grant, 1 FPI-UC Grant, 5 projects

C.11. Evaluations, Awards and Recognitions

- Certificate that shown the proficiency in English that enables me to teach courses in English at the UC, as established at the UC Academic Organization Committee, 2013
- 1st Wascon Poster Prize. 8th Conference WASCON 2012, Gothenburg, Sweden, 2012
- National CEPRECO Prize. Spanish Ministry of the Presidency. 2008
- 7th ARQUIMEDES National Competition: IBM special award to my undergraduate student E. Alvarez, 2008.