

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date	08/07/2023
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First and Family name	Fernando Vidal Barrero	
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0001-5286-8328
	SCOPUS Author ID (*)	55666375000
	WoS Researcher ID (*)	M-1018-2014

(*) Optional (**) Mandatory

A.1. Current position

Current position	Full Professor (Catedrático de Universidad)	From	August 2022
Institution	University of Seville		
Department	Chemical and Environmental Engineering Department		
Address and Country	Escuela Técnica Superior de Ingeniería, Camino de los Descubrimientos, s/n, 41092 Sevilla (Spain)		
Phone number	E-mail	fvb@us.es	
Key words	Risk prevention; Industrial Security; Biorefinery; Catalytic synthesis; Techno-Economic Analysis; Life Cycle Analysis		

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
30/07/2010 – 08/08/2022	Full Professor (Titular de Universidad)
28/11/2006 – 29/07/2010	Full Professor (Contratado Doctor)
28/10/1999 – 27/11/2006	Professor (Asociado)

A.3. Education

PhD	University	Year
Chemical and Environmental Technology	University of Seville	2003
Long-cycle degree (6-years)	University	
Industrial Engineering (Chemical Technology)	University of Seville	1998

A.4. General indicators of quality of scientific production (see instructions)

- Research six-year periods: 3, (2000-2005), (2006-2011) (2012-2017)
- Transfer six-year period: 1 (2008-2013)
- Theses supervised in the last 10 years: 5
- JCR articles: 30 (25 Q1 articles)
- Total citations: 786 (Scopus)
- Average citations: 28 (Scopus)
- Index h: 15 (Scopus)
- Patents: 2



Thesis supervised (limited to the last 6 years):

- Gracia M. Cabello González (2020); Experimental study and reaction kinetics of 1,3-butadiene synthesis from bioethanol over a Hf-Zn/SiO₂ catalyst; Supervisor: Vidal Barrero F., Campoy Naranjo M. and Villanueva Perales A. Two papers from the Thesis published in Q1 journals
- Ventura Pérez Mira (2017); Desarrollo de una herramienta de evaluación de riesgos psicosociales: Aplicación al personal de administración y servicios en el ámbito universitario; Supervisor: Vidal Barrero F.

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

Fernando Vidal Barrero is Professor in Chemical Engineering at University of Seville (US) since 1999 (Full Professor since 2010) His research activity is supported by an intense work of participation in research projects during its more of twenty years of experience, in which he has participated (or participating) in five European projects, ten national, five autonomous and nine with private funding. As a result of this activity, he has published twenty three articles in prestigious international journals, which occupy relevant positions (22 Q1) in the lists by scientific field of the Journal Citation Reports of the Science Citation Index (SCI). Emphasize that, of five articles in which he appears as the first author, two of them occupy the first position, and another three the second, in the set of those that correspond to their field of knowledge.

On the other hand, he collaborates as a reviewer in five prestigious international journals, which occupy relevant positions in the lists by scientific fields of the Journal Citation Reports of the Science Citation Index (SCI), in addition to being an evaluator in calls for national projects in Spain and Romania .

As an example of the quality of the predoctoral research activity, it should be noted that his Doctoral Thesis, the result of participation in the European Research Project 'Advanced Seawater Desulphurization Process' (CECA 7220-ED / 093), entitled ' Analysis and Optimization of the Desulfurization of Combustion Gases with Sea Water ', was awarded with the Doctoral Thesis Award "José Antonio de Artigas y Sanz Foundation".

During his knowledge transfer activity, he has collaborated in thirty-two research contracts with companies (nineteen of them as Main Investigator), participating as inventor of two patents (WO2013178834A1 and WO2014001597A1) requested by Abengoa Bioenergía Nuevas Tecnología, S.A.

As a result of one of these research contracts with the Endesa company, he developed an experimental facility, the only one in Spain, to carry out reactivity tests on absorbents for potential use in wet desulphurisation plants. In addition, because of its cooperation with companies, Fernando Vidal has actively participated in three Business Chairs. Since the 2006/2007 he was Professor Responsible for Teaching and Research in the 'INERCO Chair on Environmental Risks and Safety', while in the 2009/2010 the 'Occupational Risk Prevention Chair' was created, funded by the Regional Ministry of Employment of the Junta de Andalucía, which appointed he as its Director. Since its creation in the 2018/2019 academic year, he has been Director of the "Chair of Waste Management in the Circular Economy", financed by the company Aborgase.

As a result of postdoctoral research, he has co-directed five doctoral theses, being co-directing two other doctoral theses currently under development. In addition, he has tutored more than fifty End-of-Degree Projects (Bachelor's and Master's); four Tutored Doctorate Projects leading to obtaining the Research Capacity and the Advanced Studies Diploma; and internships in companies with more than twenty students.

Part C. RELEVANT MERITS

C.1. Publications (limited to the last 6 years)

1. C.E. Cabrera Camacho, A.L. Villanueva Perales, Bernabé Alonso-Fariñas, F. Vidal-Barrero, Pedro Ollero. (2022) Assessing the economic and environmental sustainability of bio-olefins: The case of 1,3-butadiene production from bioethanol. Journal of Cleaner Production, 374, 133963. (Q1 en Engineering, Environmental)
2. Faba, Laura; Cueto, Jennifer; Portillo, M^a Ángeles; Villanueva Perales, Ángel L.; Ordóñez, Salvador; Vidal-Barrero, Fernando. (2022) Effect of catalyst surface chemistry



- and metal promotion on the liquid-phase ethanol condensation to higher alcohols. *Applied Catalysis A-General*, 643, 118783. (Q2 en Environmental Sciences)
- Vidal-Barrero, Fernando; Baena-Moreno, Francisco M.; Preciado-Cárdenas, Christian; Villanueva-Perales, Ángel; Reina, T. R. (2022) Hydrogen production from landfill biogas: profitability analysis of a real case study. *Fuel*, 324, 124438. (Q1 en Chemical Engineering)
 - Portillo Crespo, M. A.; Vidal-Barrero, F.; Azancot, Lola; Reina, Tomas Ramírez; Campoy, M. (2022) Insights on Guerbet Reaction: Production of Biobutanol From Bioethanol Over a Mg–Al Spinel Catalyst. *Frontiers in Chemistry*, 10, 945596. (Q2 en Chemistry, Multidisciplinary)
 - G. M. Cabello González; A. L. Villanueva Perales; A. Martínez; M. Campoy; F. Vidal-Barrero. (2022) Conversion of aqueous ethanolacetaldehyde mixtures into 1,3-butadiene over a mesostructured Ta-SBA-15 catalyst: Effect of reaction conditions and kinetic modelling. *Fuel Processing Technology*, 226, 1-14. (Q1 en Chemical Engineering)
 - G. M. Cabello González; A. L. Villanueva Perales; M. Campoy; J. R. López Beltrán; A. Martínez; F. Vidal-Barrero. (2021) Kinetic modelling of the one-step conversion of aqueous ethanol into 1,3-butadiene over a mixed hemimorphite-HfO₂/SiO₂ catalyst. *Fuel Processing Technology*, 216, 1-10. (Q1 en Chemical Engineering)
 - C. E. Cabrera Camacho; Bernabe Alonso-Fariñas; A. L. Villanueva Perales; F. Vidal-Barrero; Pedro Ollero. (2020) Techno-economic and Life-Cycle Assessment of One-Step Production of 1,3-Butadiene from Bioethanol Using Reaction Data under Industrial Operating Conditions. *ACS Sustainable Chemistry & Engineering*, 8, 27, 10201-10211. (Q1 en Chemical Engineering)
 - G. M. Cabello González, P. Concepción, A. L. Villanueva Perales, A. Martínez, M. Campoy, F. Vidal-Barrero. (2019) Ethanol conversion into 1,3-butadiene over a mixed Hf-Zn catalyst: effect of reaction conditions and water content in ethanol. *Fuel Processing Technology* 193, 263-272. (Q1 en Chemical Engineering)
 - Cabello González, G.M.; Murciano, R.; Villanueva Perales, A.L.; Martínez, A.; Vidal-Barrero, F.; Campoy, M. (2019) Ethanol conversion into 1,3-butadiene over a mixed Hf-Zn catalyst: A study of the reaction pathway and catalyst deactivation. *Applied Catalysis A: General*, 570, 96-106. (Q1 en Chemical Engineering)

C.2. Research projects (limited to the last 6 years)

- PII2022-CTC2022134263. Evaluation of the impact of psychosocial risks on the health of public university workers. Junta de Andalucía. Fernando Vidal Barrero (US) 2022-2023. 40.000 €. **Investigador Principal**.
- PID2020-117794RB-I00. Solar thermochemical looping gasification of biomass for production of hydrogen and sequestration-ready CO₂ (SOLBHYCO). Ministerio de Ciencia e Innovación. Alberto Gómez Barea y Fernando Vidal Barrero (US). 2021-2025. 193.600 €. **(Co)Investigador Principal**.
- PY18-RE-0040. Biorefinery for the conversion of bioethanol into higher alcohols (BioC₄+) as biofuels and high added value chemicals. Junta de Andalucía (Boja N° 194 de 2018). M^a Ángeles Portillo Crespo (AICIA) y Fernando Vidal Barrero (US) 2020 – 2022. 215.628 €. **(Co)Investigador Principal**.
- PII2018SC0001. Identification of good practices on emerging ergonomic and psychosocial risks in the Contac-Centers of Andalusia. Junta de Andalucía (Boja N° 151 de 2018). Fernando Vidal Barrero (US) 2018-2019. 36.250 €. **Investigador Principal**.
- CTM2016-78089-R. Development of a technology for the material and energy recovery of municipal solid waste by means of simultaneous optimization of gasification and stabilization of the ashes (NetuWas) Ministerio de Economía y Competitividad (PN I+D). Alberto Gómez Barea. 2017 - 2019. 120.000 €. **Investigador**.
- CTQ2015-71427-R. Biobutadiene production from bioethanol (BIODIENE) Ministerio de Economía y Competitividad (PN I+D). Ángel Villanueva Perales. 2016 - 2018. 105.270 €. **Investigador**.

C.3. Contracts, technological or transfer merits (limited to the last 6 years)

1. Production of aviation biofuels and chemical intermediates by Fischer-Tropsch synthesis from landfill biogas. Energía Sur de Europa. Fernando Vidal Barrero (PI-2203/2022-AICIA-US) 2022-2023. **Investigador responsable**. 58.000 €.
2. Industrial Demonstration of New Catalytic Route for Biobutanol and other Bioproducts. Catalyxx. Fernando Vidal Barrero (PI-2004/2020-AICIA-US) 2020-2022. **Investigador responsable**. 207.084 €.
3. Decentralized Hydrogen Production from Landfill Biogas. Energía Sur de Europa. Fernando Vidal Barrero (PI-2001/2020-AICIA-US) 2020-2021. **Investigador responsable**. 49.890 €.
4. Synthesis of alcohol mixtures for liquid fuels. Avanza Negocios y Tecnología. Fernando Vidal Barrero (AE-1910/35/2019 -AICIA-US) 2019. **Investigador responsable**. 8.700 €.
5. Analysis of technologies for the energy recovery of MSW. EDIFESA, Ingeniería y Medio Ambiente. Fernando Vidal Barrero (PRJ201602804-FIUS-US) 2016-2017. **Investigador responsable**. 31.057 €.
6. Synthesis of alcohol mixtures for liquid fuels. Sanber Scale Technology. Fernando Vidal Barrero (PI-1658/35/2016-AICIA-US) 2016-2017. **Investigador responsable**. 92.260 €.

C.4. Patents

1. Ricardo Arjona, Juan Luís Sanz, Ana Isabel Vicente, Yolanda Peña, Pedro Ollero, Fernando Vidal, Ángel Villanueva, M^a Ángeles Portillo, Francisco Ladrón de Guevara. **WO2013178834 A1**. Catalytic procedure for obtaining ethanol from synthesis gas. Abengoa Bioenergía Nuevas Tecnologías, S. A.
2. Ricardo Arjona, Juan Luís Sanz, Avelino Corma, Marcelo Domine, Fernando Vidal, Francisco Ladrón de Guevara. **WO2014001597 A1**. Procedure for obtaining higher alcohols. Abengoa Bioenergía Nuevas Tecnologías, S. A.

C.5. Others

1. Direction or Co-direction of more than 50 works (PFC, TFG, TFM,...)
2. Evaluator of national projects in Spain and Romania.
3. Scientific reviewer in five prestigious international journals.
4. Management of the Biofuels Laboratory of the University of Seville.
5. Prize for Doctoral Thesis, awarded by the José Antonio de Artigas y Sanz Foundation.
6. Director of the Occupational Risk Prevention Chair at the University of Seville since 2010.
7. Director of the Department of Chemical and Environmental Engineering from 2015 to 2019.
8. Director of the Chair of Waste Management in the Circular Economy of the University of Seville since 2018.