



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 15/06/2022

First name	Gil		
Family name	Garrote		
Gender (*)	Male	Date of Birth (dd/mm/yyyy)	05/11/1971
Social Security, Passport, ID number	34961763S		
e-mail	gil@uvigo.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-1691-6502		

(*) Mandatory

A.1. Current position

Position	Professor		
Initial date	12/11/2020		
Institution	University of Vigo		
Department/Centre	Chemical Engineering		
Country	Spain	Phone number	+34988387056
Keywords	Lignocellulosic materials, biofuels, biorefinery, waste valorization, environmentally friendly processes		

A.2. Previous positions (research activity interruptions)

Period	Position/Institution/Country/Cause of the interruption
2001-2003	Associate Professor/U. Vigo/Spain
2003-2008	“Ramón y Cajal” Postdoc/U. Huelva – U. Vigo/Spain
2008-2020	Associate Professor/U. Vigo/Spain

A.3. Education

PhD, Graduate Degree	University/Country	Year
Bachelor of Science in Chemistry (specialization in Industrial Chemistry)	University of Santiago de Compostela	1995
PhD in Chemistry	University of Vigo	2001

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

Gil Garrote has a Bachelor of Science in Chemistry (specialization in **Industrial Chemistry**) from the University of Santiago de Compostela and a **PhD in Chemistry, with an Award of Excellence**, from the University of Vigo (2001). He was professor at U. Vigo during 2001-2003, obtaining a contract “**Ramón y Cajal**” at the University of Huelva (2003 – 2004). Finally, he was contracted as Professor at U. Vigo and since 2020 he is **Professor**.

During the realization of his Doctoral Thesis (department of Chemical Engineering, U. Vigo, Faculty of Science), starting a research line about hydrothermal treatments of **lignocellulosic materials**, which has been very successful, studying the **kinetics** of process and various applications, within the philosophy of biorefinery, such as the production of fermentative media, the production of antioxidant compounds, or their use in the production of cellulose pulp. Recently, his research focused on the production of **bioethanol** from



lignocellulosic materials. He was in various **research stajs** in the U. of Sherbrooke (Canada), the U. of Córdoba and the U. of Huelva, for 9 months.

Moreover, since 2006 to 2016 he directed the research group EQ9 of the U. Vigo, which has been recognized as a **competitive group** by Xunta de Galicia and U. Vigo (with a higher financial support than 100000 €), belonging to a strategic group of research groups (financed by Xunta de Galicia with 1250000 €).

Regarding to the **INDEXED ARTICLES** in the SCI of the JCR, it is worth mentioning the AMOUNT (98 indexed articles), the QUALITY (77% in the first quartile of its epigraphs) and the IMPACT in the scientific community (more than 6000 citations, **h = 43**, included in Top 2% of the most cited scientist worldwide, Stanford University, 2021). He is also the author of more than 100 contributions to international scientific congresses.

Gil Garrote has participated since 1998 in **31 RESEARCH PROJECTS** obtained in competitive public calls financed with more than **3 million euros: 2** from the **European Union** (268500 € for our group and a financing for the rest of groups and companies of 1394500 €), 11 from the state (914000 €), 12 from the autonomic community (1880000 €) and 5 from the U. Vigo (76300 €).

From 2004, he has been a **PRINCIPAL INVESTIGATOR** of **13** of them: **4** state (403000 €, 3 from the MEC and the financing associated with Ramón y Cajal), **5** from the Autonomic Community (352000 €) and 4 from the U.Vigo (31200 €).

He has participated in **6 RESEARCH ACTIVITIES HIRED** (for a total of 247000 €), including 2 CENIT projects (145000 €), 2 direct contracts by companies (58000 €), 1 contract with the CSIC (11017 €) and a report. He has been the Principal Investigator of 3 of these activities (27000 €): 1 contract with the multinational Chemtex (LEADING R+D+I obtaining biofuels), 1 with the CSIC and 1 report.

Related to the **TRANSFER OF RESULTS**, it must be stood out that he is co-inventor of 5 patents. Contract with Chemtex (15000 €) consisted of applying the knowledge and technologies developed by his group, and the company has protected the results through the patent WO/2012/042497.

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

C.1. Publications

1. Del Río, P.G., Gullón, B., Wu, J., Saddler, J., Garrote, G., Romaní, A. (2022). Current breakthroughs in the hardwood biorefineries: Hydrothermal processing for the co-production of xylooligosaccharides and bioethanol. *Bioresource Technology*. Art. N° 126100 (Q1).
2. Del Castillo-Llamosas A., Rodríguez-Martínez B., del Río P.G., Eibes G., Garrote G., Gullón B. (2021). Hydrothermal treatment of avocado peel waste for the simultaneous recovery of oligosaccharides and antioxidant phenolics. *Bioresource Technology*. Art. N° 125981 (Q1).
3. Del Río, P.G., Gullón, B., Pérez-Pérez, A., Romaní, A., Garrote, G. (2021). Microwave hydrothermal processing of the invasive macroalgae *Sargassum muticum* within a green biorefinery scheme. *Bioresource Technology*. Art. N° 125733 (Q1).
4. Del Río, P.G., Domínguez, V.D., Domínguez, E., Gullón, P., Gullón, B., Garrote, G., Romaní, A. (2020). Comparative study of biorefinery processes for the valorization of fast-growing *Paulownia* wood. *Bioresource Technology*. Art. N° 123722 (Q1)
5. Del Río, P.G., Gomes-Dias, J.S., Rocha, C.M.R., Romaní, A.; Garrote, G., Domingues, L.; (2020). Recent trends on seaweed fractionation for liquid biofuels production. *Bioresource Technology*. Art. N° 122613 (Q1)
6. Del Río, P.G., Domínguez, E., Domínguez, V.D.; Romaní, A.; Domingues, L.; Garrote, G. (2019). Third generation bioethanol from invasive macroalgae *Sargassum muticum* using autohydrolysis pretreatment as first step of a biorefinery. *Renewable Energy*. 141: 728-735 (Q1)
7. Aguilar-Reynosa, A., Romaní, A., Rodríguez-Jasso, R.M., Aguilar, C.N., Garrote, G., Ruiz, H.A. (2017). Comparison of microwave and conduction-convection heating autohydrolysis pretreatment for bioethanol production. *Bioresource Technology*. 243: 273-283 (D1)
8. Aguilar-Reynosa, A., Romaní, A., Rodríguez-Jasso, R.M., Aguilar, C.N., Garrote, G., Ruiz, H.A. (2017). Microwave heating processing as alternative of pretreatment in second-



- generation biorefinery: An overview. *Energy Conversion and Management*. 136: 50-65 (Q1)
9. Domínguez, E., Romani, A., Domingues, L., Garrote, G. (2017). Evaluation of strategies for second generation bioethanol production from fast growing biomass *Paulownia* within a biorefinery scheme. *Applied Energy*. 187: 777-789 (D1)
 10. Vargas, F., Domínguez, E., Vila, C., Rodríguez, A., Garrote, G. (2016). Biorefinery Scheme for Residual Biomass Using Autohydrolysis and Organosolv Stages for Oligomers and Bioethanol Production. *Energy and Fuels*. 30: 8236-8245 (Q1)
 11. Romani, A., Tomaz, P.D., Garrote, G., Teixeira, J.A., Domingues, L. (2016). Combined alkali and hydrothermal pretreatments for oat straw valorization within a biorefinery concept. *Bioresource Technology*. 220: 323-332 (D1)
 12. Vargas, F., Domínguez, E., Vila, C., Rodríguez, A., Garrote, G. (2015). Agricultural residue valorization using a hydrothermal process for second generation bioethanol and oligosaccharides production. *Bioresource Technology*. 191: 263-270 (D1)

C.3. Research projects

Title: Avances hacia una biorrefinería sostenible basada en la valorización de especies invasoras

Financial entity: Ministerio de Economía y Competitividad (Code PID2019-110031RB-I00)

Dates: 2020-2022

Budget: 181500 €

Principal researcher: **Gil Garrote Velasco (IP1)** and **Beatriz Gullón Estévez (IP2)**

Title: Multistage processes for the integral benefit of macroalgal and vegetable biomass

Financial entity: Ministerio de Economía y Competitividad (Code CTM2015-68503-R)

Dates: 2016-2018

Budget: 204490 €

Principal researcher: **Gil Garrote Velasco (IP1)** and **Herminia Domínguez González (IP2)**

Title: Development of processes for the integral exploitation of fast-growing biomass via bioethanol and chemicals production.

Financial entity: Ministerio de Economía y Competitividad (Code CTQ2012-30855)

Dates: 2013-2015

Budget: 93600 €

Principal researcher: **Gil Garrote Velasco**

Title: Advanced processes for the production of second generation biofuels

Financial entity: Xunta de Galicia (Code EM2012/159)

Dates: 2012-2015

Budget: 95000 €

Principal researcher: **Gil Garrote Velasco**

Title: Pinosylvins as novel bioactive agents for food applications.

Financial entity: European Union

Participant entities: University of Vigo, University of Abo, University of Ljubljana, Latvian Institute of Wood Chemistry

Dates: 2011-2014

Budget: 810000 €

Principal researcher: Atte Von Wright (**Gil Garrote** as member of research team)

Title: **New prebiotics from industrial subproducts with high pectin content**

Financial entity: MICINN (Code CTQ2008-05322)

Dates: 2009-2011

Budget: 100400 €

Principal researcher: José Luis Alonso González (**Gil Garrote** as member of research team)

Title: Processing of forestall residues for biofuels production

Financial entity: Xunta de Galicia (Code 08REM002383PR)

Dates: 2008-2011

Budget: 98900 €

Principal researcher: **Gil Garrote Velasco**

Title: Consolidation and structuration of competitive research units: emerging groups promoted by young researchers.



Financial entity: Xunta de Galicia (Code 2007/34)
Dates: 2008-2010 Budget: 90000 €
Principal researcher: **Gil Garrote Velasco**

C.4. Technology/Knowledge transfer

Contracts

Title: O Dourado Verde (distillation and analysis of pine resins)
Financial entity: Xunta de Galicia, Resega Montes SL // Participant entities: University of Vigo
Dates: 2016-2017 Budget: 90022.74 € (10500 € for University of Vigo)
Principal researcher: **Gil Garrote Velasco**

Title: Research on the influence of genetic variability in the potential for bioethanol production from corn stover
Financial entity: Misión Biológica de Galicia (CSIC) // Participant entities: University of Vigo
Dates: 2012 Budget: 13000 €
Principal researcher: **Gil Garrote Velasco/J.C. Parajó**

Title: Pretreatment of lignocellulosic materials
Financial entity: Chemtex Italy Spa // Participant entities: University of Vigo
Dates: 2009 Budget: 15000 €
Principal researcher: **Gil Garrote Velasco/J.C. Parajó**

Title: Senifood (CENIT contract)
Financial entity: CDTI // Participant entities: University of Vigo (associated to Customdrinks SLU; main entity: Abengoa)
Dates: 2009-2011 Budget: 75000 €
Principal researcher: José Luis Alonso González (**Gil Garrote** as member of research team)

Title: BioSos (CENIT contract)
Financial entity: CDTI // Participant entities: University of Vigo (associated to Acciona; main entity: Abengoa)
Dates: 2009-2011 Budget: 102000 € (10500 € for University of Vigo)
Principal researcher: José Luis Alonso González (**Gil Garrote** as member of research team)

Patents

Inventors: **Garrote, G.**; Parajó, J.C.; Santos, V.; Peleteiro, S.; Alonso, J.L.
Title: Procedure for the production of hydroxymethylfurfural from hemicelluloses of pine or fir woods
No. of request: P201200549 Priority country: Spain Priority date: 24/05/2012
Main entity: University of Vigo

Inventors: Alonso, J.L.; Parajó, J.C.; Gullón, B.; Martínez, M.; **Garrote, G.**, Yáñez, R.
Title: Process based on ion exchange for the recovery in separate streams of lactic acid and oligomeric carbohydrates from fermentative media.
No. of request: P201200549 Priority country: Spain Priority date: 24/05/2012
Main entity: University of Vigo

Inventors: Alonso, J.L.; Parajó, J.C.; Gullón, B.; Martínez, M.; **Garrote, G.**, Yáñez, R.
Title: Process for obtaining products with prebiotic power from sugar beet pulp
No. of request: P201200549 Priority country: Spain Priority date: 24/05/2012
Main entity: University of Vigo