CURRICULUM VITAE ABREVIADO (CVA)

CV date	10/01/2025

Part A. PERSONAL INFORMATION José Luis Pinilla Ibarz

A.1. Current position

Position	Científico Titular/Senior Researcher		
Initial date	04/07/2018		
Institution	Consejo Superior de Investigaciones Científicas (CSIC)		
Departament/Center	Instituto de Carboquímica		
Country	Spain	Teleph. number	
Key words	Hydrogen, catalysts, carbon based materials, biorefineries, biofuels		

A.2. Previous positions (research activity interruptions, art. 45.2.c))

Period	Position/Institution/Country/Interruption cause
2015-2018	"Ramón y Cajal" researcher/ Instituto de Carboquímica-CSIC/ Spain
2012-2014	Postdoctoral researcher/ Instituto de Carboquímica-CSIC/ Spain
2010-2012	Postdoctoral researcher (MEC)/Imperial College London/ United Kingdom
2008-2010	Postdoctoral researcher/ Instituto de Carboquímica-CSIC/ Spain
2005-2008	PhD student/ Instituto de Carboquímica-CSIC/ Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Phd in Chemical Engineering	University of Zaragoza, Spain	2008
MSc. in Chemical Engineering	University of Zaragoza, Spain	2005
Graduate in Technical Engineering, major in Industrial Chemistry	University of Zaragoza, Spain	2002

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

José Luis Pinilla is Senior Researcher of the Institute of Carboquímica (ICB), which belongs to the Spanish National Research Council (CSIC). During his research career he has focused on the catalytic cracking of methane (CCM) containing hydrocarbons into turquoise H_2 and nanocarbons (carbon nanofilaments and graphene derivatives) and the use of nanocarbons in energy conversion and storage and as catalysts or catalyst supports for hydrocarbon (fossil and renewable origin) conversion. His main objective has been the development of more efficient and sustainable processes for the conversion of these resources into fuels, added value products and energy.

He obtained a MSc. and PhD degree in Chemical Engineering from the University of Zaragoza in 2005 and 2008, respectively. During his Doctoral Thesis, he focused on the study of the catalytic decomposition of methane, for which he received the IV Young Researchers Award of the Spanish Carbon Group. Afterwards he joined the Chemical Engineering Department at Imperial College London (UK) with a contract from the Mobility Program for Spanish Scientists (Ministry of Education) where he carried out a 2-year postdoctoral stay. During this period, he worked on the catalytic conversion of heavy oil residues through thermochemical routes. He rejoined the ICB-CSIC in 2012, where he collaborated in the development of a new route for the use of biogas through catalytic decomposition, as well as in obtaining graphene oxides materials from carbon nanofilaments. After being awarded with a “Ramón y Cajal” contract in 2014, he won the Tenured Researcher position in 2018 and recently has promoted to Scientific Researcher (Pending appointment).

Among his most remarkable research achievements, he has pioneered the development of catalysts and reactors configurations for the methane catalytic cracking and developed a new class of catalyst supported in carbon nanofibers (produced from CCM), which has been successfully applied to a number of catalytic processes. At present, his main research interests are focused on the synthesis of biofuels and bio-based products from renewable resources such as pyrolysis liquids, lignin, cellulose, waste oils and animal fats, algae and Fischer-

Tropsch products, through catalytic hydroprocessing, being responsible of this research line in the "Fuels Conversion Group" at ICB-CSIC.

Some of the most relevant contributions of Dr. Pinilla´s research career are summarized as follows:

- **Scientific contributions.** He is co-author of 94 publications in SCI-indexed journals with high impact factor, with ca. 3100 citations (h index: 35) and 5 book chapters.
- **Dissemination and communication activities.** He has contributed to more than 130 communications to congresses (13 oral presentations, 1 invited talk). He has also participated in different dissemination projects (Semana de la Ciencia-CSIC, “10alamenos9”) and in several articles of the “Boletín del Grupo Español del Carbón”.
- **Transfer activities.** He is co-author of 2 national patents and 2 international patents, one of them licensed to the Russian company UNICAT. He was founding partner of the technological company NANOGRAPHITE S.L., whose main mission was the commercialization of carbon nanofibers and graphite nanofibers obtained from biogas. He has been also responsible of several I+D projects with private companies (CEPSA, Fertinagro, Tolsa, , CIRCE Foundation) with ca. 0.5 M € secured funding.
- **Research projects.** He has participated in 26 research projects, 11 as PI, highlighting 4 awarded projects in the “PN-Retos de investigación/Generación de conocimiento” calls (ENE2014-52189-C2-1-R, ENE2017-83854-R and PID2020-115503RB-I00 and PID2023-147514OB-I00), the 2021 Ecological and Digital Transition call MICINN/AEI (TED2021-131416B-I00), the BIOCAF project of the CSIC international COOP+ call and the CSICBiorefina project funded by Next Generation EU, with more than 2.5 M€ secured funding in the last 10 years.
- **Teaching.** He has co-directed more than 25 Final Graduation/Master Projects and 3 Doctoral Theses (plus 3 in progress), and supervised several external practicums of bachelors and master students. He has also participated as teacher in various courses organized by the University of Zaragoza.
- **Reviewer.** He acts as reviewer for numerous SCI journals as well as project evaluator for the European Climate, Infrastructure and Environment Executive Agency (CINEA, EU), the Spanish National Research Agency (AEI), the National Center of Science and Technology Evaluation (Rep. of Kazakhstan) and Minciencias (Colombia).
- **Editor:** He is member of the Editorial Board of the MDPI journals Biomass and Energies, Editor-in-chief of “Boletín del Grupo Español del Carbón”, Review Editor of Carbon-based Materials section of Frontiers in Materials and Associate Editor of Catalytic Reactions and Chemistry section of Frontiers in Chemistry.
- **Societies membership.** He is a member of Spanish Carbon Group and the Spanish Society of Catalysis,
- **Management.** He is Vicedirector of the ICB-CSIC from 14/6/2023 and member of the board of the Spanish Carbon Group from 25/10/2023.

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

C.1. Publications *(*corresponding author)*

1. A. Ayala-Cortés, D. Torres, E. Frecha, P. Arcelus-Arrillaga, H.I. Villafán-Vidales, A. Longoria, J.L. Pinilla*, I. Suelves. Upgrading of biomass-derived solar hydrothermal bio-oils through catalytic hydrodeoxygenation in supercritical ethanol (2023) Journal of Environmental Chemical Engineering, 11 (6), art. no. 111395.

2. E. Frecha, J. Remón, A.P. Sulaeman, A.S. Matharu, I. Suelves, J.L. Pinilla*. Catalytic valorisation of the effluents generated during the defibrillation process of cellulose from almond hulls: A holistic zero-waste biorefinery approach (2023) Journal of Cleaner Production, 414, art. no. 137582.

3. J. Remón, F. Ravaglio-Pasquini, L. Pedraza-Segura, P. Arcelus-Arrillaga, I. Suelves, J.L. Pinilla*. Caffeinating the biofuels market: Effect of the processing conditions during the production of biofuels and high-value chemicals by hydrothermal treatment of residual coffee pulp (2021) Journal of Cleaner Production, 302, art. no. 127008.

4. J. Alves Silva, J.B. Oliveira Santos, D. Torres, J.L. Pinilla, I. Suelves. Natural Fe-based catalysts for the production of hydrogen and carbon nanomaterials via methane

decomposition (2021) International Journal of Hydrogen Energy, 46 (71), pp. 35137 – 35148.

5. E. Ochoa, D. Torres, R. Moreira, J.L. Pinilla*, I. Suelves. Carbon nanofiber supported Mo_2C catalysts for hydrodeoxygenation of guaiacol: The importance of the carburization process. (2018). Applied Catalysis B: Environmental, 239: 463-474.
6. A. Cardoso, T. Ramirez Reina, I. Suelves, J.L. Pinilla, M. Millan, K. Hellgardt. Effect of carbon-based materials and CeO_2 on Ni catalysts for Kraft lignin liquefaction in supercritical water. (2018). Green Chemistry, 20 (18): 4308-4318.
7. D. Torres, J.L. Pinilla, R. Moliner, I. Suelves. On the oxidation degree of few-layer graphene oxide sheets obtained from chemically oxidized multiwall carbon nanotubes. (2015). Carbon, 81: 405-417.
8. J.L. Pinilla*, H. Purón, D. Torres, S. de Llobet, R. Moliner, I. Suelves, M. Millan. Carbon nanofibres coated with Ni decorated MoS_2 nanosheets as catalyst for vacuum residue hydroprocessing. (2014). Applied Catalysis B: Environmental, 148-149: 357-365.
9. J.L. Pinilla*, D. Torres, M.J. Lázaro, …, D. Martínez (1/9). Metallic and carbonaceous - based catalysts performance in the solar catalytic decomposition of methane for hydrogen and carbon production. (2012) International Journal of Hydrogen Energy. 37 - 12, pp. 9645 - 9655.
10. J.L. Pinilla, R. Moliner, I. Suelves, M.J. Lázaro, Y. Echegoyen, J.M. Palacios. Production of hydrogen and carbon nanofibers by thermal decomposition of methane using metal catalysts in a fluidized bed reactor (2007) International Journal of Hydrogen Energy, 32 (18), pp. 4821-4829.

C.2. Congress

1. Valorización de residuos de la industria minera como catalizadores en reacciones de producción y uso de H_2. J. López de los Ríos, D. Torres, A. Ayala-Cortés, I. Suelves, J. L. Pinilla. Reunión Bienal de la Sociedad Española de Catálisis (SECAT 2023), Torremolinos, 20-23/6/2023. Oral communication.
2. Desarrollo de catalizadores basados en carburo de Molibdeno soportados en nanofibras de carbono para la HDO de bioaceites. J.L. Pinilla, J. Gracia, E. Ochoa, D. Torre, J. Remón, I. Suelves. Reunión Bienal de la Sociedad Española de Catálisis (SECAT 2021), Valencia,18-20/10/2021. Oral communication.
3. Ru, Pd, Pt as dopants of carbon nanofibers-supported Ni catalysts for one-pot cellobiose conversion. E. Frecha, A. Pueyo, D. Torres, I. Suelves, J.L. Pinilla. 8th International Conference on Carbon for Energy Storage and Environment Protection. Alicante, España. 20-24/10/2019. Oral communication.
4. Nanofibras de carbono como soporte catalítico en procesos de biorefinería. J.L. Pinilla; E. Ochoa; E. Frecha; J. Gracia; J. Remón; D. Torres; I. Suelves. XXXVI Jornadas Nacionales de Ingeniería Química (XXXVI JNIQ). Zaragoza, España. 04-06/09/2019. Oral communication.
5. One-pot cellulose catalytic conversion into valuable products using nickel supported on carbon nanofibers. E. Frecha, I. Suelves, J.L.Pinilla. EUROPACAT2017. Florencia, Italia, 27- 31/08/2017. Oral communication.

C.3. Research projects

1. **WASTH2nFUEL**. Holistic utilization of wastes through catalytic processes for low-emission hydrogen and biofuel production. PID2023-147514OB-I00. Fundig: 242.500 €; Funding entity: Ministerio de Ciencia e Innovación. Duration: 9/2024-10/2027. Principal Investigators: Isabel Suelves, José Luis Pinilla
2. **RESCRAQ.** Valorization of waste as catalysts for low-emission H2 production and carbon nanostructures via methane cracking.. CSIC Intramural Project 202380E196. Funding: 52.000 €. Funding entity: CSIC. Duration: 01-11-2023 to 31-12-2024. Principal Investigator: José Luis Pinilla.
3. **SUSJETFUEL**. Sustainable production of biofuels for aviation through catalytic processes. TED2021-131416B-I00. Funding: 149.500 €. Funding entity: Ministerio de Ciencia e Innovación. Duration: 01-12-2022 to 30-11-2024. Principal Investigators: Isabel Suelves and José Luis Pinilla.

4. **CSICBiorrefina:** Demonstration of Agricultural Waste Biorefinery. Unit 9. Refining (Upgrading) of Syncrude. Principal Investigators ICB-CSIC: Isabel Suelves, José Luis Pinilla. Next Generation EU: (Green Hydrogen and Energy Program) PTI+ TRASENER. Duration: 18/11/2021 - 17/11/2024. Funding ICB: 1.136.184 €.
5. **WOFTOFUEL**: Production of biofuels from waste oils and fats through advanced catalytic processes.. Principal Investigators: I. Suelves, J.L. Pinilla. Proyectos I+D+i 2020 Retos Investigación, PID2020-115503RB-I00. Duration: 01/09/2021 - 31/12/2024. Funding: 217.800 €.
6. **BIOCAF**: Design and evaluation of a biorefinery based on the hydrothermal treatment of coffee industry waste. (COOPB20367). CSIC Program I-COOP+2018. Principal Investigator: José Luis Pinilla. 04/2019-09/2021. Funding: 26.075 €.
7. **CATBIOREF**: Development of catalytic processes in biorefinery based on renewable carbon nanomaterials for the production of biofuels. (ENE2017-83854-R). Ministerio de Economia y Competitividad. Plan Nacional 2013-2016. Principal Investigators: Isabel Suelves, Jose Luis Pinilla. 01/01/2018-31/12/2020. Funding: 189.244 €.
8. **BIOCAR**: Production of biofuels with enhanced properties using advanced catalytic systems based on carbon nanomaterials.. (ENE2014-52189-C2-1-R). Ministerio de Economía y Competitividad. Plan Nacional 2008-2011. Principal investigators: Isabel Suelves and Jose Luis Pinilla (Coordinators) 1/01/2015-31/12/2017. Funding: 158.510 €.

C.4. Contracts, technological or transfer merits

1. Analysis of catalytic processes for ammonia synthesis and decomposition.. Technical Support contract. Responsible Researchers: Isabel Suelves, José Luis Pinilla. FERTINAGRO BIOTECH S.L. Duration: 11/10/2023-10/011/2023. Funding: 9.922 €.
2. Characterization of supports and catalysts and their evaluation in industrially relevant reactionsTechnical Support contract. Responsible Researchers: Isabel Suelves, José Luis Pinilla. TOLSA S.A. Duration: 27/10/2023-26/06/2024. Funding: 35.864 €.
3. Evaluation of supported catalysts on NFC in the synthesis of alpha olefins. R&D Project. Responsible Researchers: Isabel Suelves, José Luis Pinilla. Compañía Española de Petróleos, S.A. Duration: 01/07/2023-30/06/2024. Fundig:112.530 €.
4. Evaluation of carbon nanofibers in catalytic processes.R+D contract. Responsible Researchers: Isabel Suelves, José Luis Pinilla. Compañía Española de Petróleos, S.A. 01/06/2021-28/02/2022. 82.280 €.
5. Preparation of carbon nanofibers and graphite nanofibers. Material Transfer Agreement. Responsible Researchers: Isabel Suelves, José Luis Pinilla. Compañía Española de Petróleos, S.A. 16/05/2020-15/05/2021. 24.042,7 €.
6. Evaluation of activated carbons derived from wheat biomass and corn cobs for supercapacitors.Research Contract. Responsible Researchers. Isabel Suelves, José Luis Pinilla. Fundación CIRCE (Centro de Investigación de Recursos y Consumos Energéticos). 16/09/2019-15/12/2019. 15.000 €.
7. Founding partner of the company NANOGRAPHITE S.L., member of its Scientific Advisory Committeee (2016-2018).
8. Catalyst for processing heavy oils and its preparation method. M. Millan; T. Ramirez-Reina; J. Bermudez; H. Purón; J.L. Pinilla. 02.02.2017. WO2017/018905. Patent licended to **UniCat** (Rusia).
9. Method for preparing graphite nanofibers from biogas. I. Cameán; N. Cuesta; S. de Llobet; A.B. García; R. Moliner; J.L. Pinilla; A. Ramos; I. Suelves. 15/01/2015; WO 2015/004295 A1. Entity h