

**Part A. PERSONAL INFORMATION**

<b>CV date</b>	17/06/2021
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First and Family name	M <sup>a</sup> del Pilar Dorado Pérez		
Researcher codes	WoS Researcher ID (*)	K-7733-2017	
	SCOPUS Author ID(*)	56243813900	
	Open Researcher and Contributor ID (ORCID) **	0000-0002-9508-6657	

(\*) At least one of these is mandatory

(\*\*) Mandatory

**A.1. Current position**

Name of University/Institution	Universidad de Córdoba		
Department	Physical Chemistry and Applied Thermodynamics		
Address and Country	EPS, ed Leonardo da Vinci, campus Rabanales, Córdoba, Spain		
Phone number	957218332	E-mail	<a href="mailto:pilar.dorado@uco.es">pilar.dorado@uco.es</a>
Current position	Professor (Catedrática de universidad)	From	2012
Keywords	Biofuels, biodiesel, biorefinery, diesel engines		

**A.2. Education**

PhD	University	Year
Agricultural engineering	Universidad de Córdoba	2001

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

3 “sexenios de investigación” (out of 3 applied), last one granted in 2015 and 1 “sexenio de transferencia”.

Supervised thesis since 2011: 10 (currently supervising 7 PhD students)

Total citations: 3,179 (without self-citing)

Average citation per item: 47.26; cites/year in the last 5-year period (2016-2020): 328.2 (1641 cites in those 5 years)

Publications in Q1: 68 (out of 78 in Web of Knowledge, plus 5 publications in press, Q1)

h-index=30

Most-cited paper (473 cites): Dorado et al. Exhaust emissions from a diesel engine fueled with transesterified waste olive oil. 2003. Fuel 82(11): 1311-1315.

4 papers placed on top 1% of most cited papers in their field (Energy&Fuels).

Among 2% most cited researchers (2021 Stanford U classification. Ioannidis JPA, Boyack KW, Baas J (2020). Updated science-wide author databases of standardized citation indicators. PLoSBiol 18(10): e3000918.)

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

Professor Dorado is the head of the research group BIOSAHE since 2002. She graduated from the University of Cordoba, Spain, in Agriculture Engineering. She followed this with an International master in irrigation and drainage (MAPA, Spain), and a PhD in Agriculture Engineering. She was appointed Lecturer in the Dep. of Mechanical and Mining Engineering at the University of Jaen, and she passed the tenure to become permanent staff (profesor titular de escuela universitaria) at the University of Jaen. In 2005 she moved to the University of Cordoba and in 2008 she was appointed “profesor titular de universidad” and later, in 2012, she was appointed Professor “catedrático de universidad” in the same university. She has been heavily involved with several academic organizations, i.e. the University of Jaen Council (1999-2001), the Association of Researchers and Professors of the University of Jaen (2000-2005), and the Spanish Association of Agricultural Engineers (since 2003). In 2008 she took over as Director of the master in industrial process control, where the universities of Cordoba and Jaen were involved. Her personal research group comprises the University of Cordoba and Jaen, and involves 25 academic staff and more than ten research students. She is responsible for more than 100 research and teaching publications, including national and international contributions, several book chapters, editor of several books and two patent applications (one under evaluation since 2018). She has supervised 10 PhD students in the last 7 years and is currently supervising 7 PhD students. The group collaborates with some



international research institutions and universities, i.e. the Satake Center for Grain Process Engineering (the University of Manchester, UK), Laser-Laboratorium of Göttingen (Germany), Agricultural University of Athens (Greece), Naples Industrial Chemistry Laboratory (Università degli Studi Federico II di Napoli, Italy), Vehicle Technology Research Group (the University of Birmingham, UK), Austrian Biofuels Institute, among many others.

During her career, Professor Dorado has been a regular contributor to major national and international conferences. She has also acted as consultant to the CEN (the European Committee for Standardization) where she participated on the Spanish proposal to the European Standard of Biodiesel (EN 14214) in 1998, and as independent expert for the EC, ANEP, FONDECYT-CHILE, the Romanian National Council for Research, Colombian COLCIENCIAS, BBVA Foundation, among many others. She has led/participated in a number of Spanish Ministry funded projects and four European funded projects. She has been member of the Organizing and Scientific Committees of several national and international conferences and was appointed Vicechancellor of the University of Cordoba from 2010 to 2012. In 2018, she has been awarded with the distinction “Medalla de oro al mérito profesional con distintivo rojo”, by CGRICT.

Activities of the research group have been directed towards the application of process engineering concepts to new renewable alternative fuels for internal combustion engines and energy efficiency. Much of this work is being undertaken to investigate new raw materials to produce 2<sup>nd</sup> generation biofuels and additives, transesterification monitoring and optimization, glycerol recycling, biorefinery technologies, bioplastics, exhaust emissions (including noise) and engine performance working on biofuels.

## **Part C. RELEVANT MERITS (last five years)**

### **C.1. Selected publications (including books)**

-Pinzi S, Redel-Macías MD, Carmona-Cabello M, Cubero AJ, Herreros JM, Dorado MP. 2021. Influence of 1-butanol and 1-pentanol addition to diesel fuel on exhaust and noise emissions under stationary and transient conditions. *Fuel* 301: 12104.

-Martos FJ, Soriano JA, Dorado MP, Soto F, Armas O. 2020. Modelling of particle size distributions produced by a diesel engine fueled with different fossil and renewable fuels under like urban and extra-urban operating conditions. *Fuel*: 116730.

-Carmona-Cabello M, Garcia IL, Saez-Bastante J, Pinzi S, Koutinas AA, Dorado MP. 2020. Food waste from restaurant sector - Characterization for biorefinery approach. *Bioresource Technology* 301: 122779

-Carmona-Cabello M, Sáez-Bastante J, Pinzi S, Dorado MP. 2019. Optimization of solid food waste oil biodiesel by ultrasound-assisted transesterification. *Fuel*: 115817.

-Chebbi H, Leiva-Candia D, Carmona M, Jahouani A, Dorado MP. 2019. Biodiesel production from microbial oil provided by oleaginous yeasts from olive oil mill wastewater growing on industrial glycerol. *Industrial Crops and Products* (invited paper) 139: 111535.

-Pinzi, S; Lopez, I; Leiva, DE; Redel, MD; Herreros, M; Cubero, A; Dorado, MP. 2018. Castor oil enhanced effect on fuel ethanol-diesel fuel blend properties. *Applied energy* 224: 409-416.

-Carmona, M; Leiva, D; Castro, JL; Pinzi, S; Dorado, MP. 2018. Valorization of food waste from restaurants by transesterification of the lipid fraction. *Fuel* 215: 492-498.

-Redel, MD; Hervás, C; Gutiérrez, P; Pinzi, S; Cubero, A; Dorado, MP. 2018. Computational models to predict noise emissions of a diesel engine fueled with saturated and monounsaturated fatty acid methyl esters. *Energy*. 144: 110-119.

-Perea-Moreno AJ, Perea-Moreno MA, Dorado MP, Manzano-Agugliario F. 2018. Biofuel properties of mango seed. *Journal of Cleaner Production* 190: 53-62.

-López, I; Pinzi, S; Leiva, D; Dorado, MP. 2016. Multiple response optimization to reduce exhaust emissions and fuel consumption of a diesel engine fueled with olive pomace oil methyl ester/diesel fuel blends. *Energy*. 117: 398-404.



## C.2. Research projects and grants

-Ref.: PID2019-105936RB-C21. Producción y análisis de biocombustibles y biolubricantes derivados de microalgas. Ministerio de Ciencia e Investigación. 2020-2024. PI: MD Dorado & MD Redel. Budget: 145,200 €.

-Ref: INMUNOWASTE. Emisiones contaminantes producidas por eco-combustibles obtenidos a partir de residuos y sus efectos sobre los procesos alérgicos. PROGRAMA OPERATIVO FEDER ANDALUCÍA 2014-2020. 2020-2021. PI: Sara Pinzi & MP Dorado. Budget: 40,204 €. Main researcher.

-Ref.: 1511. Desarrollo y transferencia a las empresas bioenergéticas de una tecnología innovadora NIR (Near-Infrared Spectroscopy) para el análisis rápido y económico de la calidad de biomasa autóctona del área transfronteriza. UE (program EP - INTERREG V A Spain Portugal (POCTEP)). PI: MP Dorado (UCO). 2017-2020. Budget: 639,72.95 €. Coordinator.

-Ref: ENE2013-47769R. Biorefinery design based on the valorization of food industry wastes. Ministerio de Economía y Competitividad (Plan estatal de investigación, desarrollo e innovación orientada a los retos de la sociedad). PI: MP Dorado & S Pinzi (UCO). 2014-2017. Budget: 158,510.00 €. Main researcher.

-Ref: EUBis TD1203. Food waste valorisation for sustainable chemicals, materials and fuels. UE (EU RTD FRAMEWORK PROGRAM). Coordinator: James Clark (UK). 2013-2016. Budget: 703,000 €. Researcher.

-Ref: ENE2010-15159/ALT. Second generation biofuels from microbial oil. MICINN (Plan Nacional). PI: MP Dorado (UCO). 2011-2013. Budget: 83,480 €. Main Researcher.

-Ref: TEP-4994M. Optimización integral del proceso de producción en biodiésel. CICE, Junta de Andalucía (convocatoria de proyectos de excelencia, motriz). PI: MP Dorado (UCO). 2010-2014. Budget: 311,167.68 €. Main Researcher.

-Ref: TEP-4830M. Aprovechamiento de la glicerina por vía fermentativa: alternativa de viabilidad para la industria del biodiésel. CICE, Junta de Andalucía (convocatoria de proyectos de excelencia, motriz). PI: JM Gómez (UCA). 2010-2014. Budget: 343,939.68 €. Researcher.

-Ref: ENE200607495/ALT. Desarrollo de biocombustibles que disminuyan las emisiones contaminantes en motores diesel. Idoneidad de los aceites vegetales españoles para producir biodiésel. MICYT (Programa Plan Nacional de Energía). PI: MP Dorado (UCO). 2007-2010. Budget: 102,850 €. Main researcher.

## C.3. Contracts

-Reingeniería del Equipo ES2606774. (Clean\_AgroBiomass\_Tech). Ref.: AEI-010500-2020-148. Entidad financiadora: Ministerio de Industria, Comercio y Turismo (programa de apoyo a agrupaciones empresariales innovadoras). IP: Dorado, MP. 01/06/2020-31/05/2021. Budget: 319.936 €.

-Desarrollo e implementación de una metodología basada en NIRS para la caracterización de biomasa de especies herbáceas. Company: Acciona. 11/2020-12/2021. PI with Miguel Carmona. Budget: 40.000 € plus VAT.

-Desarrollo e implementación de una metodología basada en NIRS para la caracterización de biomasa de especies leñosas. Company: Acciona. 11/2020-12/2021. PI with Miguel Carmona. Budget: 40.000 € plus VAT.

-Desarrollo de métodos de caracterización de los principios activos extraídos de la Cúrcuma y el Cannabis, así como la determinación de la riqueza de los productos obtenidos a partir de sus extractos. Funding body: Phytoplant research. PI: Dorado, MP. Duration: 10/2015-01/2016.

-Nuevos desarrollos tecnológicos para la caracterización aceites y derivados (título antiguo: de la fracción terpénica y cannabiótica de la planta y sus extractos). Funding body: Phytoplant research. PI: Dorado, MP. Duration: 20/02/2015-20/02/2016.



-Nuevos desarrollos tecnológicos para el aceite de oliva y otras grasas saludable. Funding body: Phytoplant research. PI: Dorado, MP. Duration: 09/05/2014-26/09/2014.

#### **C.4. Patents** (Patents previous to 2015 not listed).

Costarrosa, L; Dorado, MP. Procedimiento para la obtención de biodiésel sin producción de glicerina. 2018. University of Cordoba, Spain. Patent pending.

#### **C.5, C.6, C.7... (e. g., Institutional responsibilities, memberships of scientific societies...)**

##### **C.5. Supervised PhD thesis:**

-Ensayo de nuevos biocombustibles derivados de la biomasa en motores de combustión interna. Eloísa Torres. 27/04/2011. *cum laude* (European recognition). 4 papers Q1.

-Biocombustibles para motores diésel a partir de diversas grasas vegetales. Sara Pinzi. 28/06/2011. *cum laude* (European recognition). Extraordinary prize 2013. 8 papers Q1.

-Biocombustibles y ruido en motores de tractores. M. Dolores Redel. 13/04/2012. *cum laude* (international recognition). Extraordinary prize 2014. 5 papers Q1.

-Obtención de productos de alto valor añadido a partir de la glicerina generada en la producción de biodiésel. Isabel López. 18/09/2012. *cum laude* (international recognition). 3 Q1.

-Biorrefinería para la producción de biodiésel de segunda generación a partir de aceite microbiano. David Leiva. 14/04/2014. *cum laude* (international recognition). 7 papers Q1.

-Utilización de biocombustibles en motores de combustión interna de encendido por compresión. losvani López. 16/07/2014. *cum laude*. 2 papers Q1.

-Modelado y optimización del proceso de producción y uso del biodiésel. Antonio Alcántara. 17/10/2014. *cum laude*. 2 papers Q2.

-Producción de biodiésel asistida por ultrasonidos. Javier Sáez. 29/04/2015. *cum laude*. 5 papers Q1.

-Análisis del comportamiento de mezclas de alcoholes superiores con gasóleo en motores diésel. Javier Campos. 4/02/2016. *cum laude*. 3 papers Q1.

-Catalizadores heterogéneos para obtener biodiésel. Laureano Costarrosa. 3/02/2016. *cum laude*. 1 paper Q2.

-Biorefinery design for the production of microbial oil based on the valorization of food industry wastes. Miguel Carmona. 24/01/2020. *Cum laude*. 5 papers Q1.

##### **C.6. International expert and evaluator of the following programs and institutions:**

- Call FP7-ENERGY-2007-2-TREN, Area Energy (DG TREN). 2007-2012

- Partnership Programme - Joint Applied Research Projects - PCCA 2011. Romanian National Council for Research and Development. 2011-date

-2014 Biobased Industries Joint Undertaking. Partnership between EU and Bio-based Industries Consortium. Evaluation of proposals-call H2020. 2014-date

-National Center of Science and Technology Evaluation. Ministry of Education and Science, Republic of Kazakistan. 2014-date

##### **C.7. Research recognitions and prizes:**

••Cover page of issue August (volume 190, 2015) journal Bioresource Technology (Figure 3).

••2<sup>nd</sup> prize in I Premio Emilio Botín del III Concurso de ideas y proyectos de empresa con base agroalimentaria A3BT!, ceiA3. June 2015.

••Prize of the Academy of Sciences of Cuba 2015. March 2016.

••“Poster Award Breakthrough Initiative”, presented by PhD student Miguel Carmona, in 6<sup>th</sup> WasteEng2016, Albi, France. May, 2016.

••Award “Medalla de Oro al Mérito Profesional de las RICT con Distintivo Rojo, en virtud de los méritos contraídos en el ámbito de actuación”, granted by CGRICT, Bilbao, 2019.