MINISTERIO DE CIENCIA E INNOVACIÓN

CURRICULUM VITAE (maximum 4 pages)

AGENCIA ESTATAL DE INVESTIGACIÓN

CV date	6-12-2020

Part A. PERSONAL INFORMATION

First and Family name	Dania Olmos Díaz

Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0002-0419-301X
	SCOPUS Author ID (*)	6602328354
	WoS Researcher ID (*)	Y-3836-2019

(*) Optional
(**) Mandatory

A.1. Current position

Name of University/Institution	University Carlos III of Madrid |Universidad Carlos III de Madrid			
Department	Ciencia e Ingeniería de Materiales e Ingeniería Química			
Address and Country	Avda. Universidad, 30 28911 Leganés (Madrid)			
Phone number	(+34) 91 624 6048	E-mail	dolmos@ing.uc3m.es	
Current position	Associate Professor | Profesora Titular		From	2018
Key words	Polymer matrix composite materials; thermoplastic polymers; characterization of materials; characterization of interfaces; spectroscopy; atomic force microscopy (AFM)			

A.2. Education

PhD, Licensed, Graduate	University	Year
Bachelor Degree in Chemistry	Universidad Complutense de Madrid (UCM)	2000
Doctorate in Materials Science and Engineering	University Carlos III of Madrid	2003

A.3. General indicators of quality of scientific production *(see instructions)*

Number of six-year terms: 3 (Last one until 2018).
Number of doctoral theses supervised since January 1, 2010: 2 (2010 and 2016) plus two on-going theses.
Total cites: *Scopus*: 736; *Web of Science (WoS)*: 668 (Without self-citations: 568).
Average citations/year (last 5 years 2016-2020): 63.6 (WoS)
Number of total publications: 50 (Scopus); 50 (WoS).
h-Indices: 16 (Scopus); 15 (Web of Science) and 18 (Google Scholar)

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

Dania Olmos Díaz holds a Degree in Chemistry from the Complutense University of Madrid (UCM) in the specialty of Fundamental Chemistry since 2000 and PhD from the Carlos III University of Madrid (UC3M) in Materials Science and Engineering Program (2003). Dania Olmos became Associate Professor in the Department of Materials Science and Engineering and Chemical Engineering at UC3M in year 2018. Dania Olmos has been carrying out her teaching and research work in the same department which she belongs to since year 2000.

As for her teaching activity, Dania Olmos has participated in the teaching of subjects taught in Industrial Engineering and in the Degrees related to the branches of Industrial Engineering. Mainly, she has been teaching in subjects related to Chemistry and Materials Science and Engineering. She has also supervised a total of 22 projects to undergraduate/engineering students and 12 projects to predoctoral students. She has participated in the co-direction of 2 doctoral theses (2010 and 2016) and she is currently also co-directing 2 other doctoral theses.

Dr Dania Olmos' research career has focused on the study of **multifunctional polymer matrix composite materials**, within the framework of the Group of Polymer Composite Materials and Interphases (GMCPI) research lines. This activity has been addressed from two main research lines. One with a more basic nature, focused on the study of interphases of composite materials of polymer matrix and another of a more applied character, in which we have worked with different kind of functional materials, among others, materials with antibacterial properties oriented to its application in the agricultural, food and health industry. In this frame, Dania Olmos has experience in the preparation and characterization of polymer matrix composite materials of both thermostable matrix and thermoplastic matrix.

In recent years, it is worth highlighting the complementary training in the technique of Atomic Force Microscopy (AFM) to the knowledge acquired during the postdoctoral stays carried out in prestigious centers such as the Materials Research Laboratory (MRL) at the University of California, Santa Barbara (UCSB) and Veeco (nowadays Bruker), thanks to the scholarship funded by the Community of Madrid and another one from the UC3M mobility Program. These postdoctoral research stays were key in the formation as a researcher with a profile oriented to the application of atomic force microscopy to the study of polymers in general and to the study of interfaces in polymer matrix composite materials which allowed her to actively participate in other research topics. The theoretical-practical knowledge acquired during the stays has been completed with a more theoretical training that resulted in the preparation of a postgraduate subject of Atomic Force Microscopy that has been taught during several academic courses in the Master in Materials Science and Engineering of the Carlos III University of Madrid. We have recently applied this technique for the characterization and study of the growth of different microorganisms (mainly bacteria) on the surfaces of polymeric materials, to study the effect of the introduction of nanoparticles with antimicrobial properties on bacterial growth, as shown in some of the latest published research articles.

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

C.1. Publications *(max. 10 pubications)*

1. D. Harandi, D.Olmos, J. González-Benito. *"Consolidation of Fir Wood by Poly(vinyl butyral-co-vinyl alcohol-co-vinyl acetate) Treatment: Study of Surface and Mechanical Characteristics",* ***Polymers****, 12(5), 1039, 1-16,* ***2020****.*
2. E.A. Segura-González, D. Olmos, M.A. Lorente, I. Vélaz, J. González-Benito. *"Preparation and Characterization of Polymer Composite Materials Based on PLA/TiO_2 for Antibacterial Packaging".* ***Polymers****, 10(12), 1365,* ***2018****.*
3. P.D. Castrillo, D. Olmos, H.J. Sue, J. González-Benito. *"Mechanical characterization and fractographic study of epoxy-kaolin polymer nanocomposites".* ***Composite Structures****, 133, 70-76,* ***2015****.*
4. J.M. Arroyo, D. Olmos, B.Orgaz, C.H.Puga, C.S. José, J. González-Benito*. "Effect of the presence of titania nanoparticles in the development of Pseudomonas fluorescens biofilms on LDPE",* ***RSC Advances****, 4, 51451-51458,* ***2014****.*
5. D. Olmos, E.V. Martín, J. González-Benito*. "New molecular-scale information on polystyrene dynamics in PS and PS-$BaTiO_3$ composites from FTIR spectroscopy",* ***Physical Chemistry Chemical Physics****, 16, 24339-24349,* ***2014****.*
6. I. Nieto Pozo, D. Olmos, B.Orgaz, D.K. Bozanic, J. González-Benito*. "Titania nanoparticles prevent development of Pseudomonas fluorescens biofilms on polystyrene surfaces",* ***Materials Letters****, 127, 1-3,* ***2014****.*
7. D. Olmos, A. García-López, J. González-Benito*. "Detection in a single experiment of thermal transitions of the constituents in PS/$BaTiO_3$ composites",* ***Materials letters****, 97, 8-10,* ***2013****.*
8. D. Olmos, E. Rodríguez-Gutiérrez, J. González-Benito*. "Polymer structure and morphology of low density polyethylene filled with silica nanoparticles".* ***Polymer Composites****, 33(11), 2009 – 2021,* ***2012****.*
9. D. Olmos, J.M. Arroyo, J. González-Benito*. "Interphase morphology in glass fiber/PMMA modified epoxy matrix composites. Effect of molecular weight of PMMA",* ***Polymer Testing****, 31(6), 785-791,* ***2012****.*

10. D. Olmos, F. Martínez, G. González-Gaitano, J. González-Benito*. "Effect of the presence of silica nanoparticles in the coefficient of thermal expansion of LDPE",* ***European Polymer Journal****, 47(8), 1495-1502,* ***2011.***

C.2. Research projects

1. *Materiales nanocompuestos, termoplásticos antimicrobianos con potenciales aplicaciones en la industria agroalimentaria*. Funding source: Ministerio de Economía, Industria y Competitividad; Principal Investigator: Dr. Fco. Javier González Benito; Dates: **2015-2018**. Budget: 54450 euros.

2. *Prevención de enfermedades con materiales antimicrobianos.* Funding source: FUNDACIÓN GOTEO (Ref.: P-362-11022015); Principal Investigator: Dania Olmos Díaz Dates: **2016–2017**. Budget: 2430 euros (Proyecto crowd-funding).

3. *Nuevos Materiales Nanocompuestos con Propiedades Eléctricas Especiales y Desarrollo de Nuevos Métodos de Caracterización: Nanopiezodeformación y Nanotermmodeformación*. Funding source: Ministerio de Ciencia e Innovación (MAT2010-16815); Principal Investigator: Dr. Javier González Benito. Dates: **2011 -2014.**

4. *New nanocomposite materials with special electromechanical properties*. Funding source: Ministerio de Ciencia e Innovación (AIB2010PT-00267); Principal Investigator: Fco. Javier González Benito; Dates: **2011-2012**.

5. *Nuevos materiales nanocompuestos basados en la dispersión, mediante molienda mecánica de alta energía, de nanopartículas en plásticos, valorización material, interfases y caracterización (MAT2007-61607).* Funding source: Ministerio de Ciencia e Innovación; Principal Investigator: Dr. Fco. Javier González Benito; Dates: **2007-2010**. Budget: 60500 euros

C.3. Contracts, technological or transfer merits

1. Estudio y caracterización de un material termoplástico cargado con nanofibras de carbono para procesos de moldeo rotacional con aplicaciones para la industria aeronáutica. Funding Entity: Martín Acedo Manufacturing, S.A. (Grupo TAM). Project number: 2010/00380/001. IP: Fco. Javier González Benito; Año: 2010.

2. Estudio de cargas soportadas por pieza obtenida por moldeo rotacional. Funding source: Martín Acedo Manufacturing, S.A. (Grupo TAM); Project number: 2010/00526/001; IP: Fco. Javier González Benito; Año: 2010.

3. Determinación de fracción cristalina y caracterización en muestras de POM para una función de deslizamiento entre ejes de dirección en automóviles. Funding source: Castellón S.A. IP: Fco. Javier González Benito. Año 2010.

C.5. Research Stays

1. Center: Universidad del País Vasco (UPV/EHU). Dpto. Ingeniería Química y Medio Ambiente de la UPV/EHU. City: Santa Bárbara; Country: USA; Dates: 1/9/02-1/11/02; 8 semanas. Topic: Study of polymer matrix composite materials (PSF-Sílice, epoxi-sílice) por microscopía de fuerza atómica (AFM).
2. Center: Materials Research Laboratory (MRL), University of California, Santa Bárbara, UCSB. Digital Instruments/Veeco Metrology Group.
   City:Santa Bárbara; Country: USA; Dates: 8/2/04-8/8/04; 24 weeks. Topic: Study of Polymers and Polymer Matrix Composite Materials by Atomic Force Microscopy (AFM).

3. Center: University of California, Los Angeles, UCLA. Digital Instruments/Veeco Metrology Group.
   City:Santa Bárbara; Country: EEUU; Dates: 05/07/05-05/09/05; 8 weeks. Topic: Study of block copolymers and polymer matrix composite materials reinforced with fiberglass by atomic force microscopy (AFM).

C.6. Other merits

- Supervision of research works to undergraduate and master students (32).
- Co-supervision of two PhD thesis:
  - Danial Harandi. *Preparation of new polymer nanocomposites with potential use in restorative applications for the consolidation of historical wooden works.* Supervisors: Javier González Benito and Dania Olmos Díaz (2017-2021). International Doctorate.
  - Monire Moradienayat. *Polysulfone based materials for the consolidation of ancient bones*. Supervisors: Javier González Benito and Dania Olmos Díaz (2017-2021).
- Participation in 46 conferences (mainly international) with oral presentations or posters.
- Reviewer in different journals (Polymer Composites, Nanomaterials, Polymers, Materials Research Bulletin, Journal of Industrial and Engineering Chemistry, Journal of Materials Processing and Technology, J. of Photochemistry and Photobiology A: Chemistry…).
- Collaboration as *Guest Editor* in MDPI journals in two Special Issues in ***Nanomaterials*** and in ***Polymers***.
  https://www.mdpi.com/journal/nanomaterials/special_issues/poly_nanocomposite
  https://www.mdpi.com/journal/polymers/special_issues/electrical_magnetic_polymer_composites
- Collaboration in Shadowing sessions with students to promote the studies in science and technological degrees (STEM, STEM4Girls – STG project).
- Collaboration in tutoring programs at UC3M (Programa Compañeros).
- Collaboration in promotion activities and events with students Science week such as Madrid Science week.
  - Title: “Un viaje al mundo microscópico”; Curso: 2019/2020; Fecha: 7 de noviembre de 2019. https://www.madrimasd.org/semanacienciaeinnovacion/actividad/un-viaje-al-mundomicroscopico
  - Title: “Programa de Tutorización a Estudiantes de Secundaria (Programa 4º ESO + EMPRESA)”; Curso: 2018/2019; Fecha: 8 y 9 de mayo de 2019
  - Title: “IX Feria Madrid es Ciencia”; Curso: 2007/2008; Fecha: 24-04-2008 al 27-04-2008;
  - Title: “VIII Feria Madrid es Ciencia”; Curso: 2006/2007; Fecha: 12-04-2007 al 15-04-2007
  - Title: “VII Jornada de Materiales. Los nuevos Materiales y su aplicación Industrial”; Curso: 2004/2005; Fecha: 29-03-2005