MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE ABREVIADO (CVA)

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

Part A. PERSONAL INFORMATION

First name	ANTONIA		
Family name	JIMENEZ-MORALES		
e-mail	toni@ing.uc3m.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-9861-2309		
Web of Science ResearcherID	C-3913-2013		
Scopus Author ID	6602626595		

(*) Mandatory

A.1. Current position

Position	Full Professor		
Initial date	16/12/2019		
Institution	Universidad Carlos III de Madrid		
Department/Center	Ciencia e Ingeniería de Materiales e Ingeniería Química		
Country	Spain	Teleph. number	+34916249936
Key words	sol-gel coatings; thin films; electrochemistry; corrosion protection; materials sciences; metal inyection moulding; powder metallurgy;		

A.2. Previous positions (without research activity interruptions)

Period	*Position/Institution/Country*
2009/2019	Profesora Titular de Universidad (UC3M, Spain)
2004/2009	Profesora Contratado Doctor (UC3M, Spain)
2004/1999	Profesora Ayudante de Universidad (Doctor) (UC3M, Spain)
1998/1998	Profesora Ayudante de Universidad (UC3M, Spain)
1994/1998	Profesora Ayudante de Escuela Universitaria (UC3M, Spain)
1994/1994	Personal Investigador Contratado (ICMM, CSIC, Spain)
1992/1993	Becario honorífico (CNIM, CSIC, Spain)

A.3. Education

PhD, Licensed, Graduate	*University/Country*	*Year*
PhD in Industrial Technologies	Universidad Carlos III de Madrid	1999
BSc in Chemistry (Licenciado con Grado)	Universidad Autónoma de Madrid	1993

(Include all the necessary rows)

Number of six-year periods: (Last one in 2017; 4 research and 1 transfer)
Number of five-year periods: (Last one in 2019)
Principal Investigator of 19 I+D Project: 1 European Project (Clean Sky), 7 of the National Investigation Agency Plan, 1 of the Community of Madrid, and 10 Projects with private companies (one European)
Number of PhD Thesis supervised: 13 (2 in progress)
Number of papers indexed in the Web of Science: 67 (41 Q1); Citations: 1089; h-index:19
Citations/year ratio for the last 5 years in WoS: 118
Number of papers indexed in Scopus: 99 (41 Q1); Citations: 1209; h-index: 20
Citations/year ratio for the last 5 years in Scopus: 133

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

PhD in Industrial Technologies (1999) from UC3M, Full Professor (2019), has more than 28 years of experience in the Area of Materials Science and Metallurgical Engineering. Since the beginning of her research career in 1992, her scientific activity has focused on this area, covering a field of research that encompasses different specialties. such as coatings with different functionalities, electrochemistry, solid state chemistry, the electrical behaviour of solid and the analysis of the electrochemical phenomena that take place at the interfaces between solid materials and the environment that surrounds them (corrosion and degradation, etc.). These activities have been very useful for transferring her knowledge to the field of powder metallurgical materials (PM), the main thematic of the research group to which she has

belonged since 1996, and to the field of sol-gel coatings, the thematic of the innovative research line which began with the development of her Doctoral Thesis and has maintained funding up to the present. Accordingly, the direct responsibility of Antonia Jiménez within her Research Group is to lead the following research lines: (1) COATINGS: - Treatments of metallic surfaces with nanocomposite sol-gel films of a hybrid organo-inorganic nature for advanced technological applications: aeronautics, biomaterials (release of antibiotics and antifungals). - Smart coatings modified with nano- and micro-containers capable of controlled and sustained release of corrosion inhibitors and self-healing species or molecules with antifungal properties when faced with external stimuli (patented). (2) POWDER TECHNOLOGY: - Development of ceramic or metallic materials through powder injection moulding: design and characterization of "feedstocks" (physical and rheological); injection optimization of the formulations obtained; optimization of binder removal processes and the sintering process. - Development of new binder systems or ecological binder (patented). - Design and preparation of powder metallurgical materials: (i) aluminium base with high performance against electrochemical corrosion in aggressive environments, (ii) copper base to obtain inductors, (iii) MAX phases for applications in energy or use in extreme condition. (3) ELECTROCHEMISTRY OF MATERIALS: - Advanced electrochemical techniques (global and localized electrochemical impedance spectroscopy).
Additionally, she combines this activity with the Technical Management of the Laboratory of Scientific and Technical Support for the Company (L.A.C.T.E.-nº 61 REDLAB) belonging to the Network of Laboratories of the Community of Madrid.
The applicant has 141 publications (in WoS: 67 (41 Q1); non-WoS: 12; Book Chapters: 3; Peer-reviewed Proceedings: 56 (with ISBN), 3 (without ISBN). The applicant research work has been developed, thanks to her participation in 75 research projects of different natures, being the IP of 19 of them (9 in public call (1 European Clean Sky; 6 Innpacto/Retos-Colaboración; 1 Plan Nacional and 1 Community of Madrid); 10 in collaboration with companies (1 European)).
Member of the CIBERINFEC Network Biomedical Research Center (Instituto Sanitario Carlos III), 4 six-year research periods (1994/1999, 2000/2005, 2006/2011, 2012/2017), 1 six-year transfer period (2005/2010) and 13 supervised PhD Theses (+2 in process): 4 with International Mention; 2 International Double Diploma between the Carlos III University of Madrid (Doctor in Materials Science and Engineering) and the École Nationale Supérieure de Mécanique et des Microtechniques from the Franche Comté University, France (Doctor in Research Engineering).
Technology transfers: (1) Co-inventor of 4 patents (1 in the internationalization stage); (2) Collaboration and start-up of the spin-off company MedCo; (3) Realization of 104 technical assistance (71 to companies; 8 to Technological Centers/CSIC; 25 to university departments).
She has participated in different committees of international and national congresses, such as the Organizing Committee of the International Conference on Advanced Materials Processing Technologies (AMPT'15), the VII Spanish Congress of Powder Metallurgy and the II Ibero-American Congress of Powder Metallurgy (CEIPM2019) and AETOC 2019. She is a member of the "Electrochemical Society (ECS), USA" (since 2009), of the European Internet Center for Impedance Spectroscopy (since 2002), and Partner and Founding Member of the Spanish Materials Society SEMAT (since 1997).
She has been Granting of one of the annual awards of the year 2018 by the Academy of Sciences of Cuba for his results of the scientific research in Bioactive Coatings of Hydroxyapatite Base on Ti And its Alloys for Biomedical Applications (http://www.revistaccuba.sld.cu/index.php/revacc/issue/view/31).
She has been the 2015 Young Researcher Excellence Award, granted by: uc3m Social Council, Airbus and Banco Santander.

Part C. RELEVANT MERITS

C.1. Publications *(10 relevant contributions: papers Q1)*

1. J.Ureña; S.Tsipas; **A.Jimenez-Morales**; E.Gordo Oderiz; R.Detsch; A.Boccaccini. 2018. Cellular behaviour of bone marrow stromal cells on modified Ti-Nb surfaces. Materials&Design, 140, pp.452-259. https://doi.org/10.1016/j.matdes.2017.12.006: Cited to times in WoS: 18; JIF: 5.770 (2018); Ranking: 50/293 in Materials Science, Multidisciplinary (Q1).

2. J.Ureña; S.Tsipas; A.M.Pinto; E.Toptan; E.Gordo; **A.Jiménez-Morales**. 2018. Corrosion and tribocorrosion behaviour of β-type Ti-Nb and Ti-Mo surfaces designed by diffusion treatments for biomedical applications. Corrosion Science, 140, pp. 51-60. https://doi.org/10.1016/j.corsci.2018.06.024 Cited to times in WoS: 43; JIF: 6.355 (2018); Ranking: 2/76 in Metallurgy&Metallurgical Engineering (Q1, D1).

3. J.Ureña; S.Tsipas; **A.Jimenez-Morales**; E.Gordo; R.Detsch; A.Boccaccini. 2018. In-vitro study of the bioactivity and cytotoxicity response of Ti surfaces modified by Nb and Mo diffusion treatments. Surface & Coatings Technology, 355, pp.148-158, https://doi.org/10.1016/j.surfcoat.2017.12.009. Cited to times in WoS: 17; JIF: 4.192 (2018); Ranking: 3/20 in Materials Science, Coatings & Films (Q1).

4. A.Garcia-Casas; J.J.Aguilera-Correa; A.Mediero; J.Esteban; **A.Jimenez-Morales**. 2019. Functionalization of sol-gel coatings with organophosphorus compounds for prosthetic devices. Colloids and Surfaces B-Biointerfaces. 181, pp.973-980. https://doi.org/10.1016/j.colsurfb.2019.06.0424. Cited to times in WoS: 11; JIF: 3.748 (2021); Ranking: 18/79 in Metallurgy&Metallurgical Engineering (Q1).

5. J.J.Aguilera-Correa, A.Garcia-Casas, A.Mediero, D.Romera, F.Mulero, I.Cuevas-López, **A.Jiménez-Morales**, J.Esteban. 2020. A New Antibiotic-Loaded Sol-Gel Can Prevent Bacterial Prosthetic Joint Infection: From in vitro Studies to an in vivo Model. Frontiers in Microbiology. 10-2935. https://doi.org/10.3389/fmicb.2019.02935. Cited to times in WoS: 17; JIF: 5.640 (2020); Ranking: 28/136 in Microbiology (Q1).

6. J.J.Aguilera-Correa (CA); R.Vidal-Laso; R.A. arias-Cálix; last autor: J.Esteban; **A.Jiménez-Morales (8/9).** 2020. A New Antibiotic-Loaded Sol-Gel can Prevent Bacterial Intravenous Catheter-Related Infections. Materials, 13 (13)-2946. https://doi.org/10.3390/ma13132946. Cited to times in WoS: 3; JIF: 3.623 (2020); Ranking: 17/80 in Metallurgy&Metallurgical Engineering (Q1).

7. D.Romera; B.Toirac; JJ.Aguilera-Correa; A.Garcia-Casas; A.Mediero; **A Jimenez-Morales**; J. Esteban. 2020. A Biodegradable Antifungal-Loaded Sol–Gel Coating for the Prevention and Local Treatment of Yeast Prosthetic-Joint Infections. Materials, vol. 13 (14), 3141. https://doi.org/10.3390/ma13143144. Cited to times in WoS: 4; JIF: 3.623 (2020); Ranking: 17/80 in Metallurgy&Metallurgical Engineering (Q1).

8. **A.Jiménez-Morales**; A.Mediero; J.Esteban; JJ.Aguilera-Correa; SS.Cifuentes; A.Garcia-Casas; B.Toirac. 2020. Electrochemical characterization of coatings for local prevention of Candida infections on titanium-based biomaterials. Progress in Organic Coatings. 146-105681. https://doi.org/10.1016/j.porgcoat.2020.105681. Cited to times in WoS: 9; JIF: 5.161 (2020); Ranking: 2/21 in Materials Science, Coatings & Films (Q1, D1)

9. H.Garlito-Díaz; J.Esteban; A.Mediero; last autor: J.J.Aguilera-Correa (CA); **A.Jiménez-Morales** (8/10). 2021. A New Antifungal-Loaded Sol-Gel can Prevent Candida albicans. Prosthetic Joint Infection. Antibiotics. 10(6)-711, pp.1-16, https://doi.org/10.3390/antibiotics10060711. Cited to times in WoS: 3; JIF: 5.222 (2021); Ranking: 68/279 in Pharmacology&Pharmacy (Q1).

10. B.Toirac; A.Garcia-Casas; M.A.Monclús; J.J.Aguilera-Correa; J.Esteban; **A.Jiménez-Morales**. 2022. Influence of Addition of Antibiotics on Chemical and Surface Properties of Sol-Gel Coatings. Materials, 15(14), 4752, https://doi.org/10.3390/ma15144752. JIF: 3.748 (2021); Ranking: 18/79 in Metallurgy&Metallurgical Engineering (Q1).

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

1. J.J.Aguilera-Correa; A.García-Casas; **A.Jimenez-Morales**; J.Esteban. Bacterial biofilm development decrease on moxifloxacin-loaded hybrid organo-inorganic sol-gel coating. 25th Annual Meeting of the European Orthopaedic Research Society. Society for Biomaterials. 2017.

2. **A.Jiménez-Morales**; SC.Cifuentes Cuellar; A.Garcia-Casas; B.Toirac. Electrochemical characterization of coatings for local treatment of fungus infections on titanium-based biomaterials. 11th International workshop on Application of electrochemical techniques to organic coatings. Universidad Jaime I. 2019. España. Oral presentation.

3. J.J.Aguilera-Correa; A.Garcia-Casas; D.Romera; **A.Jimenez-Morales**; J.Esteban. Erradication of bacterial biofilm treated with moxifloxacin-loaded hybrid organo-inorganic sol-gel coating. 28th European Congress of Clinical Microbiology and Infectious Diseases. ESCMD. 2019. España. Oral presentation.

4. B.Toirac; A.Garcia-Casas; SC.Cifuentes Cuellar; **A.Jiménez-Morales**. Novel sol-gel coating for local treatment of fungal infections associated with biomaterials. Workshop for Young Researchers in Ceramics and Glasses for Medical Applications. SECV. 2019. España. Oral presentation.

5. H.Garlito Díaz; E.Calvo; J.Esteban; **A.Jiménez Morales**; B.Toirac. Prevención de la Infección Protésica por Levaduras usando un sol-gel órgano-inorgánico cargado con Anidulafungina: Evaluación

en un modelo experimental in-vivo. 57 Congreso Nacional de la Sociedad Española de Cirugía Ortopédica y Traumatología. SECOT. 2020. España. Oral presentation.

6. B.Toirac; A Garcia-Casas; S.C.Cifuentes; J.J.Aguilera-Correa; J.Esteban; **A.Jiménez-Morales**. Recubrimientos sol-gel cargados con linezolid y cefoxitina para la prevención local de infecciones de prótesis osteoarticulares. LVII Congreso Nacional de la Sociedad Española de Cerámica y Vidrio. SECV. 2020. España. Oral presentation.

7. B. Toirac, JJ. Aguilera-Correa, A. Mediero, J. Esteban, **A. Jiménez-Morales**. Biodegradable bilayer sol-gel coating can prevent prosthetic joint infections while promoting bone mineralization. 32nd European Congress of Clinical Microbiology & Infectious Diseases. ESCMID. 2022. Portugal. Poster with oral presentation.

C.3. Research projects (European, national and regional)

- CIT-020000-2008-27. Nanomateriales híbridos sol-gel para el desarrollo de nuevos tratamientos auto-reparantes de superficies metálicas para la protección activa de la corrosión electroquímica. Ministerio Eduación y Ciencia. Dir. Gral. Investigación. **IP: A.Jimenez-Morales (UC3M).** 01/01/2008-20/05/2009. 7.070 €.

- IPT-020000-2010-0001. Desarrollo de nuevos recubrimientos en polvo monocapa autorreparantes de altas prestaciones anticorrosivas (REPARA). Ministerio de Ciencia e Innovación. IP: **A.Jimenez-Morales (UC3M).** 22/06/2010-31/12/2013. 237.267,74 €.

- FP7-CS-JU-620136. Application of a new "green" sol-gel product using an original, versatile, accurate and in-line mixing device that improves the adhesion of paint on aeronautical sector products (GreenGELAIR). EUROPEAN COMMISSION RESEARCH EXECUTIVE AGENCY. 7th Framework Programme for Research. **IP: A.Jimenez-Morales (UC3M).** 01/10/2013-30/09/2015. 65.331 €.

- S2013/MIT-2862. Materiales Multifuncionales para los Retos de la Sociedad. (CAM-Consejería Educación, Dirección General de Universidades e Investigación. 01/01/2014-30/09/2018. 130.256 €. Contribution: *Design and characterization of different materials by solgel technology for biomedical applications.*

- RTC-2015-3513-5. Desarrollo de recubrimientos de altas prestaciones anti-corrosivas de nueva generación (RECORD). Ministerio de Economía y Competitividad. IP: **A.Jimenez-Morales (UC3M)**. 01/09/2015-31/12/2018. 155,280 €.

- PID2019-106631GB-C43. Procesado de materiales compuestos inorgánicos por técnicas de manufactura aditiva basada en enlaces. Agencia Estatal de Investigación (AEI). IP: **A.Jimenez-Morales (UC3M)**. 01/06/2020-31/05/2023. 96.800 €.

C.4. Contracts, technological or transfer merits

- Desarrollo de nanomateriales híbridos sol-gel para la protección activa frente a la corrosión electroquímica de superficies metálicas. MEDICIONES Y CORROSION S.L. **IP: A.Jimenez-Morales (UC3M).** 15/04/2009-14/07/2009. 5.175 €.

- Estudio y desarrollo para recubrimientos de superficies en paneles de material compuesto con partículas metálicas (REMACO). FUNDACIÓN PARA LA INVESTIGACIÓN, DESARROLLO Y APLICACIÓN DE MATERIALES COMPUESTOS (FIDAMC). **IP: A.Jimenez-Morales (UC3M).** 11/11/2015-11/11/2018. 24.380 €.

- Diseño de recubrimientos biodegradables tipo sol-gel con propiedades antimicrobianas para la prevención y el tratamiento local de infecciones sobre biomateriales de uso clínico (BIBAC). FUNDACIÓN JIMENEZ DIAZ. **IP: A.Jimenez-Morales (UC3M).** 29/09/2017-29/09/2020. 15.750 €.

- Estudio de nuevos materiales con bajo impacto medioambiental para impresion 3D. MIM TECH ALFA, S.L. **IP: A.Jimenez-Morales (UC3M)**. 20/06/2022-20/12/2022. 10.050 €.

-PATENT: **A.Jiménez Morale**s; A.García Casas; J.Esteban Moreno; J.J.Aguilera Correa. P201730628. Procedimiento para la obtención de un recubrimiento sol-gel, composición de recubrimiento y uso de la misma. España. 19/04/2017. Universidad Carlos III de Madrid.