

**Part A. PERSONAL INFORMATION**

<b>CV date</b>	08/12/2020
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First and Family name	María Jesús Mosquera Díaz		
Social Security, Passport, ID number	32774067X	Age	53
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0002-4632-0195	
	SCOPUS Author ID (*)	7005915333	
	WoS Researcher ID (*)	L-6219-2017	

(\*) *Optional*

(\*\*) *Mandatory*

**A.1. Current position**

Name of University/Institution	Universidad de Cádiz		
Department	Química-Física		
Address and Country	Facultad de Ciencias. Campus Universitario Río San Pedro. 11510 Puerto Real, Cádiz		
Phone number	+34670380425	E-mail	<a href="mailto:mariajesus.mosquera@uca.es">mariajesus.mosquera@uca.es</a>
Current position	Full Professor (Catedrática Universidad)	From	1/4/2016
Key words	Smart surfaces, nanomaterials, wetting, photoactivity, biocides		

**A.2. Education**

PhD, Licensed, Graduate	University	Year
Graduated in Pharmacy	Universidad de Santiago de Compostela	1989
PhD in Pharmacy	Universidad de Santiago de Compostela	1994

**A.3. General indicators of quality of scientific production**

- **Number of 6 years on research work** (sexenios investigación): 3 (last period: 2010-2015)
- **Number of 6 years on knowledge transfer work:** (sexenios transferencia): 1
- **Supervisor of Doctoral Thesis (last 10 years):** 8 (+3 on going)
- **Total Citations:** 2308 (google scholar); 1788 (scopus); 1639 (web of science)
- **Citations Average/year (last 5 years):** 279 (google scholar); 230 (scopus); 211 (web science)
- **Number of Papers in Q1:** 40 (34 of them with a relevant position, first or corresponding author)
- **h-Index:** 26 (google scholar); 23 (web of science); 24 (scopus); **i10-index**=36
- **Number of Competitive Projects as Principal Investigator:** 14 (1 H2020 European project, 10 National projects and 3 Regional projects).
- **Number of relevant contracts with companies as Principal Investigator:** 12
- **Number of Patents:** 14 (6 under exploitation)

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

Nowadays, I am a Full-Professor at the Physical-Chemistry department and the Vice-Rector for Science and Technology Policy at the University of Cadiz. I also lead the research group TEP-243 focused on developing smart materials with application on construction, Cultural Heritage elements, textiles.. for 20 years. During this period, I have leaded 14 funded research projects (1 H2020 European project, 10 Spanish projects and 3 Andalusian projects). Regarding to the European project, I am the coordinator of this multidisciplinary project, entitled *Innovative Materials and Techniques for the Conservation of the 20<sup>th</sup> Century Concrete-based Cultural Heritage (InnovaConcrete)*, funded by the H2020 programme, with a budget of 7 million €. 29 partners from 11 different countries take part in the consortium.

Regarding to my transfer merits, I have closely worked with different building companies, giving rise to 12 relevant contracts with important multinational in the building sector. I am also author of 14 patents, 6 of them under exploitation. The total funding associated to these activities ia above 500.000€. I have received 3 prizes for my transference activities. In addition, I have collaborated with different



restauration and conservation companies, providing new materials for applying in restoration of significant monuments. I also collaborate with different public institutions, such as Alhambra foundation, developing consulting services.

As results of my research activities, I am author of 80 publications in research journals, 70 of which are included in the JCR-ISI listings of indexed journals (Web of Science, Thomson Reuters), being relevant author (first or corresponding author) in 90% of these papers.

I have supervised 8 doctoral theses (+3 on going). I have been a lecturer in the International Master “Nanotechnology and Cultural Heritage”, organized by University of Palermo and other international and national courses. I have been invited speaker for most 30 international conferences. In 2017, I was the Chair of the international conference TechnoHeritage, held in Cádiz, with over 200 participants from 10 different countries. Nowadays, I am a member of the Editorial Committee of two JCR Journals: “Coatings” and “Journal of Cultural Heritage”

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

### C.1. Publications (MJ Mosquera is the corresponding author and impact factor > 4)

1. Carrascosa, L.A.M., Zarzuela, R., Badreldin, N., **Mosquera, M.J.\***. *A Simple, Long-Lasting Treatment for Concrete by Combining Hydrophobic Performance with a Photoinduced Superhydrophilic Surface for Easy Removal of Oil Pollutants*. ACS Applied Materials and Interfaces (2020) 12, 19974-19987. IF: 8,758
2. Zarzuela, R., Luna, M., Carrascosa, L.M., **Mosquera, M.J.\*** *Producing C-S-H gel by reaction between silica oligomers and portlandite: A promising approach to repair cementitious materials*. Cement and Concrete Research (2020) 130, 106008. IF: 8,328
3. Luna, M., Gatica, J.M., Vidal, H., **Mosquera, M.J.\***. *Use of Au/N-TiO<sub>2</sub>/SiO<sub>2</sub> photocatalysts in building materials with NO depolluting activity*. Journal of Cleaner Production (2020) 243, 118633. IF: 7,246.
4. Luna, M., **Mosquera, M.J.\***, Vidal, H., Gatica, J.M. *Au-TiO<sub>2</sub>/SiO<sub>2</sub> photocatalysts for building materials: Self-cleaning and de-polluting performance*. Building and Environment (2019) 164, 106347. IF: 8,4.
5. Luna, M., Gatica, J.M., Vidal, H., **Mosquera, M.J.\*** *Au-TiO<sub>2</sub>/SiO<sub>2</sub> photocatalysts with NO<sub>x</sub> depolluting activity: Influence of gold particle size and loading*. Chemical Engineering Journal (2019) 368, 417-427. IF: 10,652.
6. Luna, M., Gatica, J.M., Vidal, H., **Mosquera, M.J.\*** *One-pot synthesis of Au/N-TiO<sub>2</sub> photocatalysts for environmental applications: Enhancement of dyes and NO<sub>x</sub> photodegradation*. Powder Technology (2019) 355 793-807. IF: 4,14.
8. Zarzuela, R., Carbú, M., Gil, M.L.A., Cantoral, J.M., **Mosquera, M.J.\***. *CuO/SiO<sub>2</sub> nanocomposites: A multifunctional coating for application on building stone*. Materials and Design (2017) 364-372. IF: 4,525.
9. L. Pinho, M. Rojas, **M.J. Mosquera\***. *Ag-SiO<sub>2</sub>-TiO<sub>2</sub> nanocomposite coatings with enhanced photoactivity for self-cleaning application on building materials*. Applied Catalysis B: Environmental. (2015) 178, 144-154. IF: 8,328.
10. C. Kapridaki, L. Pinho, **M.J. Mosquera\***, P. Maravelaki-Kalaitzaki\*. *Producing photoactive, transparent and hydrophobic SiO<sub>2</sub>-crystallineTiO<sub>2</sub> nanocomposites at ambient conditions with application as self-cleaning coatings*. Applied Catalysis B: Environmental (2014) 156-157, 416-417. IF: 7,435.
11. D.S. Facio, **M.J. Mosquera\***. *A simple strategy for producing superhydrophobic nanocomposite coatings on building materials*. ACS Applied Materials and Interfaces. (2013) 5, 7517-7526. IF: 5,9.
12. L. Pinho, **M.J. Mosquera\***. *Photocatalytic activity of TiO<sub>2</sub>-SiO<sub>2</sub> nanocomposites applied to buildings: influence of particle size and loading*. Applied Catalysis B: Environmental (2013) 134-135, 205-221. IF: 6,007.
13. J.F. Illescas, **M.J. Mosquera\***. *Producing surfactant-synthesized nanomaterials in situ on a building substrate, without volatile organic compounds*. ACS Applied Materials & Interfaces (2012) 4, 4259-4269. IF: 5,008



14. **M.J. Mosquera\***, D.M. de los Santos, T. Rivas. *Surfactant Synthesized Ormosils with Application to Stone Restoration*. *Langmuir* (2010) 26, 6737-6745. IF: 4,268.

## C.2. Research projects

### European Calls:

1. **Reference:** 760858. **Title:** Innovative Materials and Techniques for the Conservation of 20th Century Concrete-based Cultural Heritage (InnovaConcrete).  
**Financing Entity:** European Commission. H2020 Programme. **Coordinator** (29 partners): M.J. Mosquera.  
**Call:** Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing (NMBP)  
**Topic:** Innovative solutions for the conservation of 20th century cultural heritage  
**Duration:** 01/01/2018-30/06/2021. **Funding:** 6.882.086,75 €.

### National Projects:

2. **Reference:** MAT2017-84228R. **Title:** Innovative Concrete and other Building Materials for their Self-Cleaning, De-Pollutant, Repellent and Biocide Performance (SMARTerials).  
**Financing Entity:** Science and Innovation Ministry. **Principal Investigator:** M.J. Mosquera.  
**Call:** 2018. I+D+I Projects. **Duration:** 01/01/2018-31/12/2020 (+7 months extension). **Funding:** 6.882.086,75 € + FPI grant.
3. **Reference:** MAT2013-42934-R. **Title:** Eco-Sustainable Building Materials for their Superhydrophobic, Self-Cleaning, De-Pollutant and Biocide Performance (MATECO).  
**Financing Entity:** Economy and Competitiveness Ministry. **Principal Investigator:** M.J. Mosquera.  
**Call:** 2013. I+D+I Projects  
**Duration:** 01/01/2014-31/12/2017. **Funding:** 184.463,27 € + FPI grant.
4. **Reference:** IPT-2012-0959-310000. **Title:** Innovative Stone (GEOPETRA)  
**Financing Entity:** Economy and Competitiveness Ministry. **Call:** National Programme of Public-Private Enterprises Cooperation. Suprogramme INNPACTO. **Partners:** Mármoles Gutiérrez Mena (Coordinator), Fundación Centro Andaluz de la Piedra & Universidad Cádiz.  
**Principal Investigator UCA:** M.J. Mosquera.  
**Duration:** 01/09/2012-31/12/2015. **Funding:** 1.053.994,09 € (UCA: 100.875 €).
5. **Reference:** IPT-2011-1685-020000. **Title:** Platform for Knowledge Generation on Innovative Stone Materials (REGENERA)  
**Financing Entity:** Economy and Competitiveness Ministry. **Call:** National Programme of Public-Private Enterprises Cooperation. Suprogramme INNPACTO.  
**Partners:** TINO STONE (Coordinador), Fundación Centro Andaluz de la Piedra y Universidad de Cádiz. **Principal Investigator UCA:** M.J. Mosquera.  
**Duration:** 04/05/2011-31/12/2013. **Funding:** 740.682,46 € (UCA: 52.811 €)
6. **Reference:** MAT2010-16206. **Title:** Conservating Heritage Stone: New Consolidants, Hydrophobic and Self-Cleaning Materials.  
**Financing Entity:** Economy and Competitiveness Ministry. **Principal Investigator:** M.J. Mosquera.  
**Call:** 2010. I+D+I Projects  
**Duration:** 01/01/2011-31/12/2013. **Funding:** 112.530 € + FPI grant.

### Regional Calls:

7. **Reference:** FEDER-UCA18-106613. **Title:** Advancing Building Materials: Future Stone (STONENEXT).  
**Financing Entity:** Andalusian Government. **Principal Investigator:** M.J. Mosquera. **Call:** PAIDI Projects.  
**Duration:** 01/04/2020-30/03/2022. **Funding:** 100.000€.
8. **Reference:** P10-TEP-6386. **Title:** New Materials for Conservation of Andalusian Cultural Heritage.  
**Financing Entity:** Andalusian Government.  
**Principal Investigator:** M.J. Mosquera. **Call:** PAIDI Projects.  
**Duration:** 06/07/2011-05/07/2015. **Funding:** 145.902,25 € + Ph.D. Grant.



### C.3. Contracts, technological or transfer merits

1. **Reference:** OT2017/059. **Principal Investigator:** M.J. Mosquera.  
**Title:** Consolidation and Protection of Natural STRATUM Stone.  
**Company:** NATURAL STONE TINO. **Duration:** 01/06/2017-30/05/2018.  
**Funding:** 48.400 € + **Patents Exploitation Contract** with initial franchise fee: 20.000 € and regalia charge: 0,2 €/m<sup>2</sup> of treated Stone.
2. **Reference:** OT2015/056. **Principal Investigator:** M.J. Mosquera.  
**Title:** Research and Development of New Technologies for Quartz Agglomerates.  
**Company:** COSENTINO. **Duration:** 04/03/2015-03/09/2016.  
**Funding:** 91.476 € + **Patents Exploitation Contract** with initial franchise fee: 6.000 € and regalia charge: 0,1 €/m<sup>2</sup> of treated Stone.
3. **Reference:** OT2011/130. **Principal Investigator:** M.J. Mosquera.  
**Title:** Optimization of Hydrophobic Products with Application on Artificial Stone.  
**Company:** SILICALIA S.L. **Duration:** 01/11/2011-31/01/2012. **Funding:** 10.620 €.
4. **Reference:** OT2010/085. **Principal Investigator:** M.J. Mosquera.  
**Title:** Optimization of Protection Materials for Stones.  
**Company:** TINO STONE GROUP. **Duration:** 01/08/2010-21/11/2011.  
**Funding:** 95.120 €.

### C.4. Patents

1. **Inventors:** M. luna, R. Zarzuela & M.J. Mosquera  
**Title:** Product for Concrete and other Building Materials Protection  
**N°:** P20100145. **Priority Date:** 01/10/2020. **Country:** Spain
2. **Inventors:** M. luna, M.J. Mosquera & M.L.A. Gil  
**Title:** Self-Cleaning, Anti-Pollutant and Consolidant Product for Building Materials  
**N°:** 201500772. **Priority Date:** 28/10/2015. **Country:** Spain  
**Exploitation Contract:** NATURAL STONE TINO (see information C.3 section)
3. **Inventors:** M.J. Mosquera, J. Illescas & D.S. Facio  
**Title:** Product for Stones and other Building Materials Protection and Conservation  
**N°:** ES2423356. **Granted Date:** 01/10/2014. **Country:** Spain  
**Extension:** PCT/ES2013/000034. Publication: WO 2013/000034  
**Exploitation Contract:** COSENTINO RESEARCH & DEVELOPMENT, NATURAL STONE TINO (see information C.3 section)
4. **Inventors:** M.J. Mosquera & L. Pinho  
**Title:** Self-Cleaning and Consolidant Product for Stone and other Building Materials  
**N°:** ES2394933. **Granted Date:** 08/04/2014. **Country:** Spain  
**Extension:** PCT/ES2012/000164. Publication: WO 2012/175764  
**Exploitation Contract:** SILICALIA S.L. & NATURAL STONE TINO (see C.3 section)
5. **Inventors:** M.J. Mosquera & J. Illescas  
**Title:** Consolidant, Hydrophobic and Stain-repellent Product for Carbonated Stones  
**N°:** ES2388843. **Granted Date:** 23/04/2014. **Country:** Spain  
**Extension:** PCT/ES2012/000067. Publication: WO 2012/127079  
**Exploitation Contract:** COSENTINO RESEARCH & Development y SILICALIA S.L. (see C.3 section)

### C.5. PhD Supervisor (last 10 years) (see details in section 3 of the project report)

1. Luis A. Martínez Carrascosa. **Date:** February 2020.
2. Manuel Luna Aguilera. **Date:** October 2019.
3. Rafael Zarzuela Sánchez. **Date:** July 2019.
4. Ivan de Rosario Amado. **Date:** July 2017.
5. Darío Sebastián Facio Silva. **Date:** February 2016.
6. Alina Hereira Díaz. **Date:** June 2013.
7. Luis Pinho. **Date:** November 2012.
8. Juan Illescas Salinas. **Date:** July 2012.