

## CURRICULUM VITAE

### Part A. PERSONAL INFORMATION

|  |  |   |            |
|--|--|---|------------|
|  |  | <b>CV date</b>  | 14/03/2025 |
| First name                                     | Teresa   |   |            |
| Family name                                    | Palomar  |   |            |
| Gender (*)                                     | Female   | Birth date  | 10/12/1985 |
| ID number                                      | 70062819N  |   |            |
| e-mail   | <a href="mailto:t.palomar@csic.es">t.palomar@csic.es</a> |   |            |
| Open Researcher and Contributor ID (ORCID) (*) |  | <a href="https://orcid.org/0000-0002-3762-8788">0000-0002-3762-8788</a> |            |

#### A.1. Current position

|                   |  |
|-------------------|--|
| Position          | Ramon y Cajal fellow (approved for tenured scientist position) |
| Initial date      | 01/01/2025   |
| Institution       | Spanish National Research Council (CSIC)                       |
| Department/Center | Glass department, Institute of Ceramic and Glass (ICV)         |
| Country           | Spain  |
| Key words         | Cultural Heritage; Historical Glass; Conservation Science      |

#### A.2. Previous positions

|              | Period      | Position/Institution/Country/Interruption cause  |
|--------------|-------------|--|
| Predoctoral  | 09/07-12/07 | Fellowship Introduction for Research (JAE intro)<br>Institute of Ceramic and Glass (ICV-CSIC), Spain       |
|              | 03/08-08/08 | Contracted researcher<br>Institute of History (IH-CSIC), Spain   |
|              | 11/08-12/08 | Fellowship Starting in Postgraduated Programs<br>Autonoma University of Madrid (UAM), Spain                |
|              | 01/09-12/12 | Spanish FPU Research fellowship<br>Institute of History (IH-CSIC), Spain                                   |
| Postdoctoral | 10/13-07/15 | Associate professor of the Higher Education Institution of Glass<br>Spanish Glass Foundation (FCNV), Spain |
|              | 10/13-12/15 | Contracted researcher<br>National Centre for Metallurgical Research (CENIM-CSIC), Spain                    |
|              | 02/16-08/18 | FCT Postdoctoral Fellowship<br>NOVA University of Lisbon, <a href="#">Portugal</a>                         |
|              | 09/18-10/21 | ComFuturo Research Project<br>Institute of Ceramic and Glass (ICV-CSIC), Spain                             |
|              | 04/22-07/22 | <i>Maternity leave</i>   |
|              | 07/22-12/24 | Assistant researcher<br>NOVA University of Lisbon, <a href="#">Portugal</a>                                |

#### A.3. Education

| PhD, Licensed, Graduate  | University/Country                  | Year |
|--|-------------------------------------|------|
| Degree in Chemistry  | Autonoma University of Madrid (UAM) | 2007 |
| PhD. Chemistry as Multidisciplinary Science                        | Autonoma University of Madrid (UAM) | 2013 |
| MSc. Diagnosis of the State of Preservation of Historical Heritage | Pablo de Olavide University (UPO)   | 2016 |

### Part B. CV SUMMARY

My research is focused on the HISTORY AND CONSERVATION OF GLASS HERITAGE.

**My scientific contributions** are the study of:

- *ARCHAEOOMETRY AND TECHNICAL ART HISTORY* (FPU, MSc projects, RyC contract, 12 papers) to understand the evolution of glass in the Iberian Peninsula and the glassmaking technology in each historical period.
- *THE ALTERATION OF HISTORICAL GLASS IN NATURAL AND EXTREME ENVIRONMENTS*, such as marine and tropical atmospheres, seabed, and burials (FPU, FCT and ComFuturo projects, 19 papers). Results are very important for conservators and historians who have to deal with altered glass heritage, and also in architecture and industry.

- *THE IMPROVEMENT OF HERITAGE CONSERVATION PROCEDURES* (MOLAB, FIXLAB, National projects, RyC contract, 25 papers) to optimize the non-destructive methods for the analysis and preservation of cultural heritage.

The results of my scientific contributions have been disseminated through national and international conferences (> 70 contributions), and published in scientific journals (54 papers, >540 citations, H-index 15, 95% Q1+Q2). The research has been produced thanks to 21 research projects. I have been Researcher responsible in 6 projects and Principal Investigator in other 5. I have obtained funding for 4 R&I projects, 3 international mobility projects, 3 projects in singular institutions, 3 R&D contracts, 2 personnel training projects, and a course (> 740 m€ since 2016). I maintain close collaboration with national and international cultural institutions, mainly from Europe and America (64.3% International collaboration, [SciVal](#)). My leadership is proven through my scientific relevance in Scopus in the period (2008-2024), being the 4<sup>th</sup> /10.657 author with more publications in “Conservation Glass” and the 3<sup>rd</sup> /5.087 author in “Historical Glass”. Additionally, my Field-Weighted Citation Impact (FWCI) of the last-5-year papers is 2.82.

My **contributions to society** are the understanding of the impact of cultural, political, technological, and industrial developments on the production and commerce of glass in the history; and the improvement of their non-destructive analysis and conservation. The close collaboration with different cultural institutions has allowed me to work with historical samples from the National Museum of Roman Art (Merida), the Great Mosque of Cordoba, the Cathedral of León, Batalha Monastery (Portugal), Uppsala Cathedral (Sweden), or different buildings from Belém do Pará (Brazil), among others. I have signed 1 agreement with a public administration (Andalusian Institute of Historical Heritage, IAPH) and 2 collaboration agreements with cultural institutions (Spanish Royal Crown and Spanish Royal Glass Factory). The research results have been communicated to end users (cultural institutions, museums, etc.) through scientific seminars and several dissemination activities as seminars at colleges, universities and prisons, YouTube webinars, workshops (Science Week, European Researchers' Night, 11F, etc.), newspaper news, social media (content creator [@icvcsic](#)), etc.

My **contributions to the training of young researchers** are the supervision of 2 students of BSc. Chemistry + 3 students for MSc. Chemistry (UAM), 1 student for MSc. Conservation and Restoration + 1 student PhD Conservation and Restoration (UNL, Portugal), 1 student PhD Fine Arts (UCM), 1 student of Research Fellowship JAE-Intro (ICV-CSIC), and 3 Erasmus students from France and Turkey. Nowadays, graduated students are working in top worldwide research centers (Cultural Heritage Agency of the Netherlands), recognized companies (EQA Spain, La Paz University Hospital, Optimal Care S.A., ECP Project Management) and academy (NOVA University Lisbon). Teaching activities (> 170h). During my postdoctoral stay in VICARTE, I was the leader of the research line “Alteration of historical glass”; and in the ICV-CSIC, I consolidated the line of “Cultural Heritage”. I am co-editor of “Arcove. La Revista” and of the special number “*New Advances in Stained Glass Research: Materials, Production Techniques and Conservation*” in Heritage (ScimagoJR: Q1 (Conservation)), reviewer in > 20 WoS journals, evaluator of ANECA and [E-RIHS](#) projects, and Jury for the Young Researcher on Conservation Science Award (GE-IIC) 2020-2024.

**Other relevant contributions** are my participation as leader of the ICV-CSIC group “Conservation of Glass and Ceramic Heritage” in the [TechnoHeritage Network](#), associated researcher in the Interdisciplinary Thematic Platform 'Patrimonio Abierto, Investigación y Sociedad' ([PTI-PAIS](#), CSIC) being part of the Executive Committee, external member of the [Research group CEI UAM+CSIC](#) “Science, Technology and Heritage Conservation”, Board Member of the “Specialized group for the Study and Conservation of Cultural Heritage” in the [RSEQ](#), and Member of the Equality, Communication and Dissemination Committee of the [ICV-CSIC](#). I am also member of 5 scientific societies, including ICOM and Corpus Vitrearum. I formed part of the International Steering Committee to promote the [International Year of Glass 2022](#), being the Spanish representative in the Art, Architecture and Culture group.

I have obtained the **R3 accreditation** (2024) and a special mention in the **Young Researcher on Conservation Science Award** (2018) given by the GE-IIC.

## Part C. RELEVANT MERITS

### C.1. Publications (CA: Corresponding author, (n. position / n. total authors) Citations in Scopus)

1. L. Maestro-Guijarro *et al.* (2025) [Determination of boron content in surface paintings from historical stained-glass windows](#). *Chem. Methods* 11, n. 85. DOI: 10.1002/cmtd.202400057 **CA** (7/7)
2. C. Machado *et al.* (2023) [Laser-based techniques for the non-invasive characterisation of grisaille paints on stained-glass windows](#). *Herit. Sci.* 11, n. 85. DOI: 10.1186/s40494-023-00917-4 (9/9) **3 cit.**
3. T. Palomar, P. Pastor (eds.) (2022). [Las colecciones de vidrio en España: del pequeño coleccionista al gran museo](#). Madrid: Consejo Superior de Investigaciones Científicas. ISBN: 978-84-00-10996-7. **CA**
4. T. Palomar, N. García-Patrón, P. Pastor (2021). [Spanish Royal glasses with crizzling in historical buildings. The importance of environmental monitoring for their conservation](#). *Build. Environ.*, n. 108054. DOI: 10.1016/j.buildenv.2021.108054 **CA** (1/3) **8 cit.**
5. T. Palomar *et al.* (2021). [Christian-Muslim contacts across the Mediterranean: Byzantine glass mosaics in the Great Umayyad Mosque of Córdoba \(Spain\)](#). *J. Archaeol. Sci.*, 129, n. 105370. DOI: 10.1016/j.jas.2021.105370 **CA** (1/6) **11 cit.**
6. T. Palomar, M. Silva, M. Vilarigues, I.P. Cardoso, D. Giovannacci (2019). [Impact of solar radiation and environmental temperature on Art Nouveau glass windows](#). *Herit. Sci.*, 7(1), 1-11. DOI: 10.1186/s40494-019-0325-3 **CA** (1/5) **20 cit.**
7. T. Palomar, R.J. Díaz, M. Vilarigues (2018) [Pigments, vinegar, and blood: Interpretation and reproduction of glassy materials from the medieval manuscript H-490](#). *Int. J. Appl. Glass Sci.*, 9 (4), 555-565. DOI: 10.1111/ijag.12354 **CA** (1/3) **6 cit.**
8. T. Palomar (2018). [Chemical composition and alteration processes of glasses from the Cathedral of León \(Spain\)](#). *Bol. Soc. Esp. Ceram. V.*, 57(3), 101-111. DOI: 10.1016/j.bsecv.2017.10.001 **CA** (1/1) **22 cit.**
9. T. Palomar *et al.* (2017) [Effect of marine aerosols on the alteration of silicate glasses](#). *J. Non-Cryst. Solids*, 471, 328-337. DOI: 10.1016/j.jnoncrysol.2017.06.013 **CA** (1/5) **26 cit.**
10. T. Palomar *et al.* (2013) [Laser induced breakdown spectroscopy for analysis and characterization of degradation pathologies of Roman glasses](#). *Spectrochim. Acta B*, 87, 114-120. DOI: 10.1016/j.sab.2013.05.004 **CA** (1/5) **25 cit.**

### C.2. Congress

#### Invited communications

1. T. Palomar "Technological evolution of glass and its artistic implications". Symposium ASIERI 2022. Escuela Española de Historia y Arqueología en Roma. 4 October **2022**, Rome (Italy). <https://www.youtube.com/watch?v=7q-lppbviAw> (min. 6:32:44).
2. T. Palomar, M.A. Gomez Moron "Mosaics, Study of glass tesserae". Congreso Arq.Osio. Arqueología y arquitectura en el conjunto monumental Mezquita-Catedral. Del complejo episcopal a la Macsura. 6-8 November **2019**, Cordoba (Spain).
3. T. Palomar, M. Vilarigues, M. Silva, I.P. Cardoso, M.T. Marques, A. Mantua "Assessment of the conservation state and analysis of chromophores of two Art Nouveau glass windows". IPERION CH 3rd Transnational Access Users meeting. 12 February **2019**, Paris (France).
4. T. Palomar, D. de la Fuente, M. Morcillo, M. Alvarez del Buero, M. Vilarigues "Early stages of environmental glass alteration in the Atlantic coast of the Iberian Peninsula". International Symposium on glass degradation in atmosphere. 15-17 November **2017**, Paris (France).
5. B. Ramirez Barat, T. Palomar, E. Cano "The Observatory for Conservation Research: a tool for professionals of conservation in Cultural Heritage". Science and Art V. Sciences and technologies applied to Heritage Conservation. 5 June **2014**, Madrid (Spain).

#### The most relevant oral communications from the 5 last years

6. T. Palomar, N. Schibille, E. Rodríguez González, S. Celestino, J. Barrio "Shattered glass - an unusual alteration pathology in a 5th century BC archaeological glass". 6th Interim Meeting of ICOM-CC Glass and Ceramics. 8-11 November **2022**, Lisbon (Portugal)
7. T. Palomar, R. Arévalo, R. Cid, E. Laso "Vidrios y VOCs: qué esperar y cómo prevenirlo" Ciencia y Arte (IX edition). 17-19 October **2022**, Madrid (Spain)
8. C. Machado, M. Vilarigues, T. Palomar "Grisaille's recipes: raw materials and their influence in the paint stability". 22nd Congress of the Association International pour l'Histoire du Verre & ICOM Glass Annual Meeting 2021. 13-17 September **2021**, Lisbon (Portugal)

9. T. Palomar, P. Pastor, N. García-Patrón “Crizzling in Spanish Royal glasses, how to preserve them in historical buildings?”. Indoor Air Quality in Heritage and Historic Environments - IAQ 2020. 30 March – 1 April **2020**, Antwerp (Belgium)
10. T. Palomar, D. Giovannacci, M. Silva, M. Vilarigues, I. Pombo Cardoso “Monitoring the natural heating of two Art Nouveau glass windows by IR-thermography” 5th Interim Meeting of ICOM-CC Glass and Ceramics. 5-7 September **2019**, London (UK)

### C.3. Research projects (*PI: Principal Investigator*)

#### **Scientific projects**

1. “COlouring the GLASS”. Ref. 2023.05135.RESTART. Funded by the Portuguese Science and Technology Foundation (FCT), Call RESTART Programme 2023 (Portugal). **PI**, Universidade Nova de Lisboa (Portugal). 12/2023-06/2025. **36.129,00 €**
2. “Characterization and conservation of historical paintings on glasses and stained-glass windows” Ref. 2021.02249.CEECIND/CP1657/CT0040. Funded by the Portuguese Science and Technology Foundation (FCT), Call CEEC IND4ed (Portugal). **PI**, Universidade Nova de Lisboa (Portugal). 07/2022-07/2028. **232.575,12 €**
3. “Láseres para la Conservación del Patrimonio (LACOHE)” Ref. PID2022-137017OB-I00. Funded by the Ministry of Science, Innovation and Universities, Call Proyectos de Generación de Conocimiento 2022 (Spain). **Researcher responsible of glass tasks**. IP: Mohamed Oujja and Marta Castillejo, IQF-CSIC (Spain). 08/2023-08/2026. **143.750,00 €**
4. “Estudio y Conservación del Patrimonio Cultural con Láseres (SCOCHLAS)” Ref. PID2019-104124RB-I00. Funded by the Ministry of Science, Innovation and Universities, Call Retos Investigación 2019 (Spain). **Researcher responsible of glass tasks**. IP: Marta Castillejo and Mohamed Oujja, IQFR-CSIC (Spain). 06/2020-05/2023. **133.100,00 €**
5. “La enfermedad del vidrio: Causas, Efectos y Tratamientos/ Glass disease: Causes, Effects and Treatments (EnViCET)”. Funded by CSIC Foundation, Call ComFuturo Program 2018 (Spain). **PI**, ICV-CSIC (Spain). 09/2018-08/2021. **159.000 €**
6. “Influence of marine environment on stained-glass windows”. Ref. SFRH/BPD/108403/2015. Funded by the Portuguese Science and Technology Foundation (FCT), Call Post-doctoral Research Fellowship 2015 (Portugal). **PI**, Universidade Nova de Lisboa. 02/2016-08/2018. **47.000 €**

#### **International mobility projects**

7. “Documentation of artistic production patterns and alteration pathologies in glass and glazes through  $\mu$ -CT”. Ref. fix\_144. Funded by Access to Research Infrastructures activity in the Horizon 2020 Programme (IPERION HS Grant Agreement n.871034), Call FIXLAB, 6<sup>th</sup> call (H2020). **PI**, Universidade Nova de Lisboa (Portugal). 11/2023. **~ 5.400 €**
8. “Historical evolution of high-quality glass pieces from the Spanish Royal Glass Factory ‘La Granja’”. Ref. mol\_2. Funded by Access to Research Infrastructures activity in the Horizon 2020 Programme (IPERION HS Grant Agreement n.871034), Call MOLAB, 4<sup>th</sup> call (H2020). **PI**, ICV-CSIC (Spain). 02/2022. **~ 15.000 €**

#### **Projects in singular institutions**

9. “The role of marine aerosols in the alteration of stained-glass windows”. Ref. 2021095427. Funded by ALBA Synchrotron, Call 2021-II. **PI**, ICV-CSIC (Spain). 02/2022. **~ 15.700 €**
10. “A study by EXAFS of the role of cobalt, chromium and manganese additions in 19th and 20th century grisailles”. Ref. 2020094563. Funded by ALBA Synchrotron, Call 2020-II. **PI**, ICV-CSIC (Spain). 04/2021. **~ 77.000 €**

### C.4. Contracts, technological or transfer merits

1. “Assessment of methods for the measurement of the transparency of glass sheets with a high surface area”. Funded by CIMNE+Apple. **Main researcher**. IP: M. Aparicio (ICV-CSIC). 2023. **5.000 €**
2. “Feasibility study of the use of biomass slag as raw material for glass”. Funded by Acciona. **Main researcher**. IP: M. Aparicio (ICV-CSIC). 2021. **12.820 €**
3. “Estudios científico-técnicos para el conocimiento, diagnóstico y conservación de la Maqsura de la Mezquita-Catedral de Córdoba”. Funded by IAPH. **Main researcher**. IP: M.A. Gómez Morón (IAPH). 2016-17. **Institutional agreement**
4. “Analytical study of corrosion layers from samples of stained glasses from the Cathedral of Leon”. Funded by ESOCA s.l. **Main researcher**. IP: M.A. Villegas (IH-CSIC) 2009. **~500 €**