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| Fecha del CVA | 22/06/2023 |
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Parte A. DATOS PERSONALES

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|--|----------------------------|---------------------|--|
| Nombre | M. Pilar | | |
| Apellidos | García Armada | | |
| Sexo | | Fecha de Nacimiento | |
| DNI/NIE/Pasaporte | | | |
| URL Web | | | |
| Dirección Email | pilar.garcia.armada@upm.es | | |
| Open Researcher and Contributor ID (ORCID) | 0000-0003-2410-3365 | | |

A.1. Situación profesional actual

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|-------------------------|---|----------|--|
| Puesto | Catedrática de Universidad | | |
| Fecha inicio | 2022 | | |
| Organismo / Institución | Universidad Politécnica de Madrid | | |
| Departamento / Centro | Ingeniería Química y Medio Ambiente / Escuela Técnica Superior de Ingenieros Industriales | | |
| País | | Teléfono | |
| Palabras clave | 230100 - Química analítica; 230700 - Química física; 239900 - Otras especialidades químicas | | |

A.3. Formación académica

| Grado/Master/Tesis | Universidad / País | Año |
|--------------------|---|------|
| Ciencias Químicas | Universidad Nacional de Educación a Distancia | 1994 |

Parte B. RESUMEN DEL CV

PhD in Chemistry from 1994 and associate professor since 1999 and Full Professor since 2022. The evaluation of the quality and dissemination of my research work has been done by the Comisión Nacional Evaluadora de la Actividad Investigadora, obtaining positive evaluation for 4 research steps (sexenios), the last obtained in 2019. My research activity has been continued in the time from 1999. I have worked in the field of electrochemistry and on developing electrochemical sensors and biosensors. Over the years, I have expanded this research field to complete electrochemical and kinetic studies of macromolecules prepared under the collaboration with the Department of Inorganic Chemistry of the UAM. In the last 16 years, I have developed a new line in which we combine different macromolecules with metallic nanoparticles and several enzymes to prepare new surfaces with improved catalytic properties as sensors or biosensors of molecules with biological interest to be applied in the diagnostics field. I have participated in 2 competitive projects in the community of Madrid, and 11 research national competitive projects, (in the penultimate of them, CTQ2009-12332-C02-02, as IP, with a production of 19 relevant JCR articles). I have supervised 30 PFC, TFM and TFG, whose results have produced publications of high impact, one doctoral thesis, which has produced four published works in journals Q1 and Q2, and I am currently supervising a second doctoral thesis, which has already produced two publications (Q1 and open access) and has another two in preparation. My scientific production is of 46 articles published in scientific JCR journals, 27 in Q1, 12 in Q2, 3 in Q3 and 1 in an open access journal. I have also participated in the preparation of two research book chapters and I have presented communications in 64 conferences. With regard to collaborations with other universities and companies, I am working in collaboration with the Department of Inorganic Chemistry of the UAM since 2001 in coordinated projects and with exchange of PhD students for periods of three or six months for complete their education. Together with the Department of the UAM, I have collaborated with Professor Holger Frey (Mainz, Germany), within the framework of the integrated action HA2003-0053. I have also maintained cooperation with the Institute of Catalysis and petrochemistry of the CSIC (project GR/MAT/0694/2004).

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con “peer review” y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

- 1 **Artículo científico.** Marta Ruiz Bermejo; M. Pilar García Armada; Eva Mateo Martí; José Luis de la Fuente. 2022. HCN-derived polymers from thermally induced polymerization of diaminomaleonitrile: A non-enzymatic peroxide sensor based on prebiotic chemistry. *European Polymer Journal*. Elsevier. 162-110897, pp.1-14. <https://doi.org/10.1016/j.eurpolymj.2021.110897>
- 2 **Artículo científico.** Marta Ruiz Bermejo; Pilar García Armada; Pilar Valles; José L. de la Fuente. 2022. Semiconducting Soft Submicron Particles from the Microwave-Driven Polymerization of Diaminomaleonitrile. *Polymers*. MDPI. 14-3460, pp.1-20.
- 3 **Artículo científico.** Alvaro; Carmen M.; Beatriz; M. Pilar. 2021. Efficient Oxidase Biosensors Based on Bioelectrocatalytic Surfaces of Electrodeposited Ferrocenyl Polycyclosiloxanes-Pt Nanoparticles. *CHEMOSENSORS*. MDPI. 9-4, pp.1-19. WOS (3) <https://doi.org/10.3390/chemosensors9040081>
- 4 **Artículo científico.** Andrés Arroquia; Irene Acosta; Maria Pilar García Armada. 2020. Self-assembled gold decorated polydopamine nanospheres as electrochemical sensor for simultaneous determination of ascorbic acid, dopamine, uric acid and tryptophan. *Materials Science & Engineering C*. Elsevier. 109-110602. SCOPUS (34) <https://doi.org/10.1016/j.msec.2019.110602>
- 5 **Artículo científico.** Maria Hernáiz Izquierdo; P. Galindo Iranzo; Maria Pilar García Armada; A. Saiz López; B. Gómara; Jesús E. Quintanilla López; Rosa Lebrón Aguilar. 2019. Direct quantification of inorganic iodine in seawater by mixed-mode liquid chromatography-electrospray ionization-mass spectrometry. *Journal of Chromatography A*. Elsevier. 1588, pp.99-107. WOS (1) <https://doi.org/10.1016/j.chroma.2018.12.046>
- 6 **Artículo científico.** Raquel Sevilla; Marta Herrero; Beatriz Alonso; M. Pilar García Armada; Manuel Algarra; Carmen M. Casado. 2019. Synthesis, characterization and electrochemical behaviour of dimethyleneamine-bridged methylated and non-methylated biferrocenyl derivatives. *Journal of Organometallic Chemistry*. Elsevier. 896, pp.183-187. <https://doi.org/10.1016/j.jorganchem.2019.06.014>
- 7 **Artículo científico.** Evelyn Ospina Carvajal; Beatriz Alonso Garrido; Carmen M. Casado Santana; M. Pilar García Armada. 2019. Thiolated DAB Dendrimer-Gold Nanoparticles Self-Assembled Monolayer as Covalent Support for Direct Electrochemistry of HRP and Sensing Applications. *Biomedical Journal of Scientific & Technical Research*. 13-4, pp.1-5. <https://doi.org/10.26717/BJSTR.2019.13.002442>
- 8 **Artículo científico.** Evelyn Ospina; Carmen M. Casado; Beatriz Alonso; Maria Pilar García Armada. 2019. Thiolated DAB Dendrimers-Gold Nanoparticles as Self-Assembled Layers for the Direct Electrochemistry of HRP. *Journal of The Electrochemical Society*. ECS. 166, pp.B1434-B1440. WOS (4) <https://doi.org/10.1149/2.0411915jes>
- 9 **Artículo científico.** Lorena Fernandez; Marta Herrero; Beatriz Alonso; Carmen M. Casado; Maria Pilar García Armada. 2019. Three-dimensional electrocatalytic surface based on an octasilsesquioxane dendrimer for sensing applications. *Journal of Electroanalytical Chemistry*. Elsevier. 839, pp.16-24. WOS (3) <https://doi.org/10.1016/j.jelechem.2019.03.010>
- 10 **Artículo científico.** Carlos Villena; Divesh Punjabi; Carmen M. Casado; Beatriz Alonso; José Losada; M. Pilar García Armada. 2018. Monodispersed Size-Controlled Gold Nanoparticles from Electrodeposited Aminoferrocenyl Dendrimer-Templates and Their Application as Efficient Hydrogen Peroxide Electrocatalyst. *Journal of The Electrochemical Society*. ECS. 165, pp.B310-B322. WOS (5) <https://doi.org/10.1149/2.1301807jes>

- 11 **Artículo científico.** Carlos Villena Morales; José Losada del Barrio; Beatriz Alonso Garrido; Carmen M. Casado Santana; M. Pilar García Armada. 2017. Easy Preparation of Electrode Surfaces with Dispersed Size-Controlled Au Nanoparticles by Electrodeposited PPI-Dendrimers as Templates. *Journal of Electrochemical Society*. ECS. 164-6, pp.H396-H406. WOS (4) <https://doi.org/10.1149/2.1611706jes>
- 12 **Artículo científico.** José Losada del Barrio; M. Pilar García Armada; Esther García; Carmen M. Casado Santana; Beatriz Alonso Garrido. 2017. Electrochemical preparation of gold nanoparticles on ferrocenyldendrimer film modified electrodes and their application for the electrocatalytic oxidation and amperometric detection of nitrite. *Journal of Electroanalytical chemistry*. Elsevier. WOS (32) <https://doi.org/10.1016/j.jelechem.2017.01.066>
- 13 **Artículo científico.** Carlos Villena Morales; Marta Bravo Toyos; Beatriz Alonso Garrido; Carmen M. Casado Santana; José Losada del Barrio; M. Pilar García Armada. 2017. Size-controlled gold nanoparticles obtained from electrodeposited amidoferrocenylpoly(propyleneimine) dendrimer-templates for the electrochemical sensing of dopamine. *Applied Surface Science*. Elsevier. 420, pp.651-660. WOS (6) <https://doi.org/10.1016/j.apsusc.2017.05.098>
- 14 **Artículo científico.** M. Pilar García Armada; Eduardo Vallejo; Carlos Villena; José Losada; Carmen M. Casado; Beatriz Alonso. 2016. New acetaminophen amperometric sensor based on ferrocenyl dendrimers deposited onto Pt nanoparticles. *Journal of Solid State Electrochemistry*. Springer-Verlag. 20, pp.1551-1563. SCOPUS (10) <https://doi.org/10.1007/s10008.016.3160.4>
- 15 **Artículo científico.** Evelyn Ospina; M. Pilar García Armada; José Losada; Beatriz Alonso. 2016. Polyferrocenyl Polycyclosiloxane/Gold Nanoparticles: An Efficient Electrocatalytic Platform for Immobilization and Direct Electrochemistry of HRP. *Journal of The Electrochemical Society*. ECS. 63-9, pp.H826-H833. WOS (7) <https://doi.org/DOI:10.1149/2.1141609jes>
- 16 **Artículo científico.** Almudena Jiménez Montero; M. Pilar García Armada; José Losada del Barrio; Carlos Villena Morales; Beatriz Alonso Garrido; Carmen M. Casado Santana. 2014. Amperometric biosensors for NADH based on hyperbranched dendritic ferrocene polymers and Pt nanoparticles. *Sensors and Actuators B: Chemical*. Elsevier. 190, pp.111-119. WOS (59) <https://doi.org/10.1016/j.snb.2013.08.072>
- 17 **Artículo científico.** Gonzalo de la Cruz Crevillén; Hanna Schüle; José Losada del Barrio; M. Pilar García Armada; Holger Frey; Beatriz Alonso Garrido; Carmen M. Casado Santana. 2013. Electrocatalytic Properties of Carbosilane-Based Hyperbranched Polymers Functionalized with Interacting Ferrocenyl Units. *European Journal Inorganic Chemistry*. pp.44-53. WOS (11) <https://doi.org/10.1002/EJIC.201201018>
- 18 **Artículo científico.** Marta Herrero; Raquel Sevilla; Carmen M. Casado Santana; José Losada del Barrio; M. Pilar García Armada; Antonio Rodríguez-Dieguez; David Briones; Beatriz Alonso Garrido. 2013. Synthesis and Electrochemistry of Di- and Triferrocenylsilylpropyltriethoxysilanes. *Organometallics*. 32, pp.5826-5833. WOS (4) <https://doi.org/10.1021/OM400387C>
- 19 **Artículo científico.** Marta Herrero; Beatriz Alonso Garrido; José Losada del Barrio; M. Pilar García Armada; Carmen M. Casado Santana. 2012. Ferrocenyl Dendrimers Based on Octasilsesquioxane Cores. *Organometallics*. 31, pp.6344-6350. WOS (18) <https://doi.org/10.1021/OM300591P>
- 20 **Artículo científico.** M. Pilar García Armada; Almudena Jiménez Montero; José Losada del Barrio; Beatriz Alonso Garrido; Carmen M. Casado Santana. 2012. New Carbosilane Polymers with Interacting Ferrocenes as Support and Bioelectrocatalysts of Oxidases to Develop Versatile and Specific Amperometric Biodevice. *Applied Biochemistry and Biotechnology*. 168, pp.1778-1791. WOS (6) <https://doi.org/10.1007/S12010.012.9896.0>
- 21 **Artículo científico.** Carlos Villena Morales; José Losada del Barrio; M. Pilar García Armada; Carmen M. Casado Santana; Beatriz Alonso Garrido. 2012. Synthesis and Electrochemical Anion Sensing Properties of a Biferrocenyl-Functionalized Dendrimer. *Organometallics*. 31, pp.3284-3291. WOS (25) <https://doi.org/10.1021/OM3001185>

22 Capítulo de libro. 2021. Ferrocenes and Other Sandwich Complexes of Iron. Comprehensive Organometallic Chemistry IV. Elsevier. pp.1-44. ISBN 9780124095472. <https://doi.org/10.1016/B978-0-12-820206-7.00083-4>

C.3. Proyectos o líneas de investigación

- 1 Proyecto.** MAT2016-77608-C3-1-P, MATERIALES BIDIMENSIONALES CON PROPIEDADES MODULABLES II. Felix Zamora Abanades. (Universidad Autónoma de Madrid). 30/12/2016-29/12/2019. 181.500 €. Miembro de equipo. Desarrollo de materiales electroactivos o soporte de los mismos y desarrollo de electrodos modificados con propiedades electrocatalíticas
- 2 Proyecto.** CTQ2009-12332-C02-02, Propiedades Electrocatalíticas y Bioelectrocatalíticas de Nanoestructuras basadas en Dendrímeros Organometálicos. Dirección General de Proyectos de Investigación. M.C. I.. M^a Pilar García Armada. (Universidad Politécnica de Madrid (UPM)). 01/01/2010-31/12/2012. 21.000 €. Investigador principal. Investigadora principal del proyecto y responsable y directora de la tesis doctoral del becario FPI concedido asociado al proyecto