



CURRICULUM VITAE (CVA)

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

Part A. PERSONAL INFORMATION		CV date	1/2025
First name	Elvira		
Family name	Gómez Valentín		
Gender (*)	Female	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	e.gomez@ub.edu	URL Web	
Open Research and Contributor ID (ORCID)(*)	0000-0002-9223-6357		

(*) Mandatory

A.1. Current position

Position	Profesora Catedrática de Universidad		
Initial date	13/06/2019		
Institution	Universidad de Barcelona		
Departament/Center	Ciència dels Materials i Química Física		
Country	Spain	Teleph. number	934021234
Key words	Electrochemistry, micro-nanostructures, electrodeposition, catalysis		

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Bachelor Degree in Chemistry	Barcelona/Spain	1978
PhD in Chemistry	Barcelona/Spain	1983

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

Received Ph D (1983) in the field of chemical kinetics using stop-flow techniques, my research activity was focused on the electrochemistry field. The research work that I have developed is framed, for the most part, within the study and design of electrodeposition processes and characterization of new materials with high added value and applicable in microelectromechanical devices, sensors, actuators, energy, biomedicine and recently, photocatalysis and synthesis.

Firstly, my research was addressed to the fundamental study of the electrodeposition processes of metals and alloys, analyzing the nucleation and growth mechanism, to control their properties adequate for their subsequent application. Initially, the work was carried out mainly in aqueous media, preparing and characterizing structures of Co/Ni-based magnetic alloys, applicable both for magnetic devices and for electrocatalysts in fuel cells. In collaboration with the Micro and Nanotools group of the CNM-IMB-CSIC, magnetic sheets and microstructures were electrodeposited in prototypes of microvalves and digital flow regulators. Magnetic materials were also developed on silicon-based substrates, in collaboration with the Polytechnic of Milano (HI2008-0058). The experience gained allowed to participate in a Consolider-Ingenio project (Nanotechnology in Biomedicine (CSD2006-00012) in which 2D coils were designed and manufactured electrochemically for the detection of functionalizable magnetic particles. Progressively, our research work was oriented to the field of Nanoscience and Nanotechnology, since the miniaturization of metals and alloys was a challenge in which

electrochemical techniques have proven to be able to contribute successfully, allowing the synthesis of thin sheets, composites, multilayers, nanowires or nanoparticles. Using hard templates, we have been able to synthesize from micrometric-sized structures on photolithographed substrates, to nanoparticles of modulable size and composition, and nanowires, using porous membranes.

In the last ten years, our interest has also focused on proposing innovative strategies for the preparation of new micro-nanostructures, incorporating creative reaction media such as microemulsions, ionic liquids and, recently, block copolymers as soft templates. Well-ordered mesoporous nanostructures with exquisitely defined geometry, controlled surface chemistry, and tunable physical properties intended for use as catalysts in reactions, effective photocatalysts in the water decontamination or dispensers of drugs, focusing interest in their activity and durability. These multidisciplinary projects have been carried out in collaboration with groups of different expertise, projects in which we have contributed with our know-how in the electrochemical preparation of materials, their morphological, compositional and structural characterization, and the kinetic monitoring of the chemical reactions involved. For the new applications, some circular processes have been designed to achieve sustainability. The high productivity was validated with 6 research 6-year terms.

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

C.1. Recent Publications

All publications included in this section are peer-reviewed and correspond to journals well-positioned).

Mohandes, F.; Gómez, E.; Serrà, A. Effect of preparation conditions on electrochemical formation of hydroxyapatite. En *Electrochimica Acta*. ISSN: 0013-4686, 1873-3859 Volum 509 (01/01/2025).

Huidobro, L.; Bautista, Q.; Alinezhadfar, M.; Góm... Enhanced visible-light-driven peroxymonosulfate activation for antibiotic mineralization using electrosynthesized nanostructured bismuth oxyiodides thin films. En *Journal of Environmental Chemical Engineering*. ISSN: 2213-2929, 2213-3437 Volum 12 (19/03/2024).

Bujaldón, R.; Benamara, M.; Dhahri, R.; Gómez, E... Attuning doped ZnO-based composites for an effective light-driven mineralization of pharmaceuticals via PMS activation. En *Chemosphere*. ISSN: 0045-6535, 1879-1298 Volum 357 (04/2024).

Huidobro, L.; Domingo, A.; Gómez, E.; Serrà, A. Bismuth oxyiodide-based composites for advanced visible-light activation of peroxymonosulfate in pharmaceutical mineralization. *Chemosphere*. ISSN: 0045-6535, 1879-1298 Volum 366 (12/10/2024)

Hjiri, M.; Bujaldón, R.; Lloreda, J.; Gómez, E.;... Advanced degradation of organic pollutants using sonophotocatalytic peroxymonosulfate activation with CoFe₂O₄/Cu- and Ce-doped SnO₂ composites. En *Chemosphere*. ISSN: 0045-6535, 1879-1298 Volum 354 (01/04/2024).

Bujaldón, R.; Garcia-Amorós, J.; Gómez, E.; Ser... Revalorització de la biomassa mitjançant fonts d'hidrogen alternatives: síntesi de la γ -valerolactona. En *Revista de la Societat Catalana de Química*. ISSN: 1576-8961, 2013-9853 Volum 23 (18/12/2024).

Ortiz, M.; Gómez, E.; Serrà, A. Recyclable biomimetic Sunflower pollen-based photocatalyst for enhanced degradation of pharmaceuticals . En *Small*. ISSN: 1613-6829, 1613-6810 (26/07/2024).

Serrà, A.; Gómez, E.; Al Hoda al Bast, N.; Zhang... Wireless pulsed nanophotocatalytic cell for the ultrafast degradation of organic pollutants. En Chemical Engineering Journal. ISSN: 1873-3212, 1385-8947 Volum 487 (26/03/2024)

Gómez, E.; Sousa, C.; Serrà, A. Colloidal Cards: Effects of Game-Based Learning on Student's Achievements in Colloidal Science. En Journal of Chemical Education. ISSN: 0021-9584, 1938-1328 Volum 101 (11/11/2024).

Mohandes, F.; Gómez, E.; Serrà, A. Surface modification of hierarchical hydroxyapatite fabricated via hydrothermal method. En Ceramics International. ISSN: 1873-3956, 0272-8842 Volum 50 (01/06/2024).

C.2. Congress

In the last 10 years, a total of **80** communications have been presented at conferences, 56 at international meetings and 24 at the national level.

C.3. Recent research projects

DESARROLLO DE TÉCNICAS ANALÍTICAS IN-SITU Y EN CONDICIONES OPERANDO PARA EL ESTUDIO DE ELECTROCATALIZADORES PARA LA CONVERSIÓN ELECTROQUÍMICA DE NITRATO A AMONIACO Investigador/s responsable/s ARANZAZU HERAS VIDAURRE Codi Oficial BU036P23 Tipus Projecte Període 30/10/2023 - 30/04/2027

Explorant noves cadenes de valor per al desenvolupament sostenible del món rural: Transformació dels residus forestals en productes d'alt valor afegit (BOSC2VAL) Investigador/s responsable/s Albert Serra Ramos Codi Oficial 2023 CLIMA 00009 Tipus Projecte Programa CTQ - PN de Ciències i Tecnologies Químiques Període 29/01/2024 - 28/01/2026

Valorización de células nanofotocatalíticas inalámbricas para la degradación ultrarrápida de contaminantes orgánicos Investigador/s responsable/s Elvira Gomez Valentin Codi Oficial PDC2023-145821-C22 Tipus Projecte Programa NTIC - Programa Nacional de Tecnologías de la Información y las Comunicaciones Període 01/01/2024 - 31/12/2025

Bio-funcionalización de Chips en Suspensión para Nanobiotecnología y Nanomedicina a Escala Celular Investigador/s responsable/s M. Luisa Perez Garcia / Elvira Gomez Valentin Codi Oficial PID2023-146658NB-C32 Tipus Projecte Programa NTIC - Programa Nacional de Tecnologías de la Información y las Comunicaciones Període 01/09/2024 - 31/08/2027

Micro/Nano-reactores foto-termo-catalíticos escalables para la síntesis de compuestos químicos verdes con luz solar a través de biomasa lignocelulósica Investigador/s responsable/s Elvira Gomez Valentin / Albert Serra Ramos Codi Oficial TED2021-129898B-C22 Tipus Projecte Programa NNMA - Programa Nacional de Materiales Període 01/12/2022 - 31/08/2025

Computational Materials Science Laboratory (CMSL) / Laboratori de Ciència de Materials Computacional Investigador/s responsable/s Francesc Illas Riera Codi Oficial 2021 SGR 00079 Tipus Grup Programa SGRC - Ajuts de Suport als Grups de Recerca de Catalunya (SGR) Període 01/01/2022 - 30/06/2025

Doctorat Industrial 'Obtenció foto-termocatalítica d' hidrogen verd a partir de biogàs i biometà. Disseny i preparació sostenible dels substrats'. Empresa: Consorci per a la Gestió dels Residus del Vallès Oriental Investigador/s responsable/s Elvira Gomez Valentin / Albert Serra Ramos Codi Oficial 2022 DI 0035 Tipus Projecte Període 26/07/2022 - 25/07/2025C.4. Contracts, technological or transfer merits

Bio)funcionalización de Suspensiones de Micro- y Nanoherramientas Avanzadas para Aplicaciones Intra- y Extracelulares Investigador/s responsable/s M. Luisa Perez Garcia / Elvira Gomez Valentin Codi Oficial TEC2017-85059-C3-2-R Tipus Projecte Programa NTEC - Programa Nacional de tecnología electrónica y de comunicaciones Període 01/01/2018 - 30/09/2021

Fusión de técnicas espectroelectroquímicas avanzadas Investigador/s responsable/s ARANZAZU HERAS VIDAURRE Codi Oficial BU297P18 Tipus Projecte Programa 0000 - Sense especificar Període 01/01/2019 - 30/06/2021

Bio-funcionalización de chips en suspensión innovadores para estudios químicos, bioelectrónicos y mecánicos en células vivas Investigador/s responsable/s M. Luisa Perez Garcia / Elvira Gomez Valentin Codi Oficial PID2020-115663GB-C32 Tipus Projecte Programa CTQ - PN de Ciencias y Tecnologías Químicas Període 01/09/2021 - 31/08/2025