

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			
Family name			
Gender (*)	MALE	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail			
Open Researcher and Contributor ID (ORCID) (*)			

(*) Mandatory

A.1. Current position

Position	Full Professor		
Initial date	09/11/2017		
Institution	Universidad Miguel Hernandez		
Department/Center	IDiBE	Instituto de Investigación, Desarrollo e Innovación en Biotecnología Sanitaria de Elche	
Country	Spain	Teleph. number	
Key words	Biopolymers, Nanofibers, Characterization, Conjugated Polymers		

A.2. Previous positions (research activity interruptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
Ene-1990 / Dic-1993	FPI Grant / C.S.I.C. / Spain
Mar-1994 / Sep-1994	Independent contracted researcher/ C.S.I.C./ Spain
Oct-1994 / Oct-1996	Quality Manager /ALMUs.a. (private company) / Spain
Nov-1996 / Ago-1997	Research assistant (GIII) / Universidad Alicante / Spain
Oct-1997 / Feb-2002	Assistant professor / Universidad Miguel Hernandez / Spain
Mar-2002 / Dic-2006	Ramon y Cajal Researcher / Universidad Miguel Hernandez / Spain
Ene-2007 / Sep-2009	Contrated Professor Doctor / Universidad Miguel Hernandez / Spain
Oct-2009 / Oct-2017	Tenured Professor / Universidad Miguel Hernandez / Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed in Chemistry Science	Universidad Autónoma de Madrid	1988
Graduate in Chemistry Science	Universidad Autónoma de Madrid	1989
Diplomate in Plastics & Rubbers	Instituto de Ciencia y Tecnología de Polímeros	1991
PhD in Chemistry Science	Universidad Autónoma de Madrid	1994

(Include all the necessary rows)

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

I'm a chemist and a polymer specialist. He is currently a professor at the Miguel Hernandez University of Elche (UMH, Spain) and member of the Spanish Chemical Society (RSEQ), sections of Polymers (POL) and Nanoscience and Molecular Materials (MAM). He has participated in more than 10 research projects in the past 10 years; five of them as principal investigator. He completed two stays as visiting professor at the University of California in Santa Barbara, in 2002 (Prof. B. Chmelka) and 2013 (Prof. G. Bazan). He has co-authored around a hundred

of articles ($h = 29$). His research activity has been mainly focused in polymer science, mostly in the synthesis and characterization of conjugated polyfluorenes with special interest for potential biomedical and biotechnological applications. Recently, prepare nanostructures, particularly nanofibers, based on green polymeric biomaterials. Dr. Mallavia has maintained a work line based on polymer science and technology. At the end of his thesis (1994), based on the synthesis and characterization of new polymerization photoinitiators, published a letter paper in *Macromolecules* about the synthesis of a combined system of photoinitiators in the same molecule. Later, several works were published on the holographic application of these photoinitiators where the participation of Dr. Mallavia allowed the achievement of publishing another letter paper in *Appl. Phys. Letters* (1998) about the development of a new holographic material that was highly cost-effective and thus very competitive in comparison to the commercially existing ones. As R&C researcher, he presented the research line that has consolidated recently based on the synthesis, characterization and application of polyfluorenes, addressing the transformations of both the side chain to improve the water solubility of polymers as well as the main chain to achieve fluorescent emissions at different wavelengths. Thus, the three basic colours (red, green, and blue) were obtained for technological applications. Some of his most cited works are the first *Macromolecules* (2005) and other ones in collaboration with other groups addressing development specific applications. The first *Macromolecules* published marks an ascending line of synthesis works that have concluded with the preparation of these polymers by non-conventional methods via microwaves in *Polymers* (2020). In this interval, two works carried out with two collaborators: 1) F. Montilla (Juan de la Cierva at that time, and currently full professor at the University of Alicante) consisted of answering the question of why polyfluorenes emitting blue light show easy degradation in electronic devices. In this regard, we suggested the formation of new structures that we demonstrated by infrared spectroscopy and a new combined technique of emission spectra-electrochemistry. It was published in *Adv. Funct. Mat.* in 2007, being his most cited work so far. 2) In 2010, A. Salinas (University of Granada; tenure professor), cross-linked polymethacrylic acid microspheres were prepared containing polyfluorenes conjugated with imidazol groups as active copper sensors, with the possibility of reversibility and good reproducibility and in aqueous continuous phase. It was published in *Chem. Comm.* In the last five years (2016-2021), a development of biopolymer research more applied towards the biotechnological and medical sector has started in an attempt to apply new materials in healthcare application. In this sense, new protocols and processing techniques for polymeric materials have been developed to take advantage of the benefits of obtaining nanostructures. During this period, we have supervised final degree projects in biotechnology and pharmacy, master's degree projects and doctoral theses, some of which are in progress in this moment, as well as contracts with companies to transfer our know-how in some specific aspects. Dr. A. Falcó, who recently obtained the JIN project (RTI2018-101969-J-I00), participates actively and decisively in this line. Prof. Mallavia is reviewer in the area of Materials and Polymer Science and national (ANEP and FONDECYT) and regional agencies. Professor Mallavia's laboratory has trained students in practices of the degree of Pharmacy and Biotechnology, as well as from other provinces, Barcelona, Madrid, Burgos, Castilla la Mancha and even from different countries Portugal (Coimbra), Chile (Santiago), as a result of collaboration with other research groups, with which he has collaborated and published the outcomes of such collaborative works. He has participated as a member evaluator of several doctoral theses in Spain and Portugal. He has being the Coordinator of the PhD program in Molecular and Cellular Biology at the Institute for Research, Development and Innovation in Health Biotechnology of Elche of the Miguel Hernández University (IDiBE-UMH), during the five-year period from 2015 to 2019. Finally, in October 2023 he was the president of the XI Congress of Young Polymer Researchers (JIP 2023) 'Científicas & Polímeros' held in Alicante.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

1. R. Díaz-Puertas, E. Rodríguez-Cañas, M.J. Lozoya-Agulló, P.V. Badia-Hernández, F.J. Álvarez-Martínez, A. Falcó y R. Mallavia (7/7), **2024**. Bovine serum albumin and lysozyme nanofibers as versatile platforms for preserving loaded bioactive compounds. *International Journal Biological Macromolecules*. 280, 136019. Q1. [10.1016/j.ijbiomac.2024.136019](https://doi.org/10.1016/j.ijbiomac.2024.136019)

2. R. Díaz-Puertas, M. Adamek, R. Mallavia y A. Falcó (4/5), **2023**. Fish Skin Mucus Extracts: An Underexplored Source of Antimicrobial Agents. *Marine Drugs*. 21(6) 350. Q1. [10.3390/md21060350](https://doi.org/10.3390/md21060350)
3. R. Díaz-Puertas, E. Rodríguez-Cañas, M. Bello-Pérez, M. Fernández-Oliver, R. Mallavia and A. Falcó (5/6). **2023**. Viricidal Activity of Thermoplastic Polyurethane Materials with Silver Nanoparticles. *Nanomaterials* 13 (9) 1467. Q1/Q2. [10.3390/nano13091467](https://doi.org/10.3390/nano13091467)
4. S. Araujo-Abad, A. Manresa-Manresa, E. Rodríguez-Cañas, M. Fuentes-Baile, P. García-Morales, y C. de Juan Romero (6/8). **2023**. New therapy for pancreatic cancer based on extracellular vesicles. *Biomedicine&Pharmacotherapy* 162, 114657. Q1.[10.1016/j.biopha.2023.114657](https://doi.org/10.1016/j.biopha.2023.114657)
5. S. Araujo-Abad, A. Manresa-Manresa, E. Rodríguez-Cañas, M. Fuentes-Baile, P. García-Morales, R. M. Saceda y C. de Juan Romero (6/8). **2023**. Glioblastoma derived small extracellular vesicles: Nanoparticles for glioma treatment. *Int. J. Mol. Sci.* 24(6) 5910. Q1 [10.3390/ijms24065910](https://doi.org/10.3390/ijms24065910)
6. R. Díaz-Puertas, F.J. Álvarez-Martínez, A. Falcó, E. Barrajon-Catalán and R. Mallavia (5/5). **2023**. Phytochemical-Based Nanomaterials against Antibiotic-Resistant Bacteria: An Updated Review. *Polymers* 15: 1392. Q1 [10.3390/polym15061392](https://doi.org/10.3390/polym15061392)
7. A. Falcó, M. Adamek, P. Pereiro, D. Hoole, J.A. Encinar, B. Novoa y R. Mallavia (7/7). **2022**: The Immune System of Marine Organisms as Source for Drugs against Infectious Diseases. *Marine Drugs*. 20: 363. Q1
8. A. Mira, M. Rubio-Camacho, D. Alarcón, E. Rodríguez-Cañas, A. Fernández-Carvajal, A. Falcó y R. Mallavia (7/7). **2021**. L-Menthol-loadable electrospun fibres of PMVEMA anhydride for topical administration. *Pharmaceutics* 13(11) 1845. Q1 [10.3390/pharmaceutics13111845](https://doi.org/10.3390/pharmaceutics13111845)
9. M. Rubio-Camacho, M^a. J. Martínez-Tomé, A. Mira, R. Mallavia y C.R. Mateo (4/5). **2021**. Formation of multicolor nanogels based on cationic polyfluorene and Poly(methyl vinyl ether-alt-maleic monoethyl ester): Potential use as pH-responsive fluorescent drug carriers. *Int. J. Mol. Sci.*, 22(17) 9607. Q1 [10.3390/ijms22179607](https://doi.org/10.3390/ijms22179607)
10. I. Torres-Moya, R. Vázquez-Guilló, S. Fernández-Palacios, J.R. Carrillo, A. Díaz-Ortiz, J.T.L. Navarrete, R.P. Ortiz, M. C. Delgado, R. Mallavia and P. Prieto (9/10). **2020**. Fluorene-Based Donor-Acceptor Copolymers Containing Functionalized Benzotriazole Units: Tunable Emission and their Electrical Properties, *Polymers* 2(2), 256. Q1, [10.3390/polym12020256](https://doi.org/10.3390/polym12020256)

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

- ✓ R. Díaz Puertas, E. Rodríguez-Cañas, P.V. Badía Hernández, F.J. Álvarez Martínez, A. Falcó, Poster. 9th International conference on bio-based and biodegradable polymers /BIOPOL 2024. Jul **2024** Coimbra (Portugal)
- ✓ R. Díaz Puertas, P.V. Badía Hernández, J. Miró, D. Murtinho, A.J.M. Valente and R. Mallavia. Poster. 9th International conference on bio-based and biodegradable polymers / BIOPOL 2024. Jul **2024** Coimbra (Portugal)
- ✓ P.V. Badía Hernández, M. Fuentes Baile, R. Díaz Puertas, M. Saceda, P. García-Morales and R. Mallavia. Poster. Polymer 2024 International Conference. Mar **2024** Sevilla (Spain)
- ✓ P.V. Badía Hernández, R. Díaz Puertas, M. Fuentes Baile, M. Saceda, P. García-Morales and R. Mallavia. Poster. XVII Reunión GEP. Sep **2024** Madrid (Spain)
- ✓ F. Montilla, R. Mallavia, S. Hafed-Khatiri, F. Huerta, A.F. Quintero-Jaime, D. Salinas-Torre. Oral, 74th Annual Meeting of the International Society of Electrochemistry. Sep **2023**. Lyon (France)

CI.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

1. **MAT-2002-03515; Diseño, síntesis y caracterización de polímeros híbridos luminiscentes en dispositivos nanosensoriales: determinación de metales pesados en muestras biológicas**” Ministerio de Ciencia y Tecnología (MyCT); Universidad Miguel Hernández, IBMC. Fecha: 2003 / 2005 Cuantía: 51.750 €; IP: Ricardo Mallavia
2. **GV-04B640; Evaluación y fabricación de un sensor selectivo de zinc utilizando como detector un polímero fluorescente y como ligando un péptido**; Generalitat Valenciana; Universidad Miguel

Hernández, Fecha: 2004 / 2005. Cuantía: 10.175 €. IP: Ricardo Mallavia.

3. MAT-2005-01004, Desarrollo de nuevos sensores fluorescentes basados en proteínas y polímeros conjugados: diseño, caracterización fisicoquímica y aplicaciones, Ministerio de Educación y Ciencia; Universidad Miguel Hernández, Fecha: 2006 / 2008. Cuantía: 92.000 €. IP: Ricardo Mallavia.

4. MAT-2008-05670, Nuevos materiales híbridos basados en sistemas moleculares complejos: aplicación como dispositivos nanosensoriales. Ministerio de Ciencia e Innovación, Universidad Miguel Hernández. Fecha: 2009 / 2011. Cuantía: 80.000 €. IP: C. Reyes Mateo Martínez, (R. Mallavia CoIP).

5. PT2009-0002, Blend films of fluorene copolymers for optoelectronic and sensing applications, Ministerio de Ciencia e Innovación, Universidad Miguel Hernández y Universidad de Coimbra. Fecha: 2010/2012. Cuantía: 8.000 €. IP: Ricardo Mallavia.

6. MAT-2011-23007, Polielectrolitos conjugados multifuncionales y nanoestructurados como plataformas terapéuticas, Ministerio de Ciencia e Innovación; Universidad Miguel Hernández, Fecha: 20012 / 2014. Cuantía: 64.000 €. IP: Ricardo Mallavia

7. MAT-2014-53282R; Desarrollo de nanoestructuras basada en polielectrolitos para su aplicación como herramientas de diagnóstico, transporte de fármacos y diseño de biosensores, Ministerio de Economía, industria y Competitividad; Universidad Miguel Hernández, IBMC. Fecha: 2015 / 2017. Cuantía: 50.000 €; IP: Ricardo Mallavia.

8. MAT-2017-86805R Diseño de nanomateriales fluoresecetes para el desarrollo de nuevas formulaciones terapéuticas y descubrimiento de nuevos fármacos. Ministerio de Economía, industria y Competitividad, Universidad Miguel Hernández. Fecha: 2018 / Sep2021. Cuantía: 70.000 €. IP: C. Reyes Mateo Martínez, (R. Mallavia CoIP).

9. Met-DisFish. Terapias metabólicas para el tratamiento de enfermedades infecciosas en peces de cultivo Ministerio de Agricultura, Pesca y Alimentación. CSIC y Universidad Miguel Hernández. Fecha: 12-2021 / 10-2023. Cuantía: 515.099,44 € (UMH 176.164,01€). (IP-UMH: R. Mallavia).

10. PDI-2021-12353OB-C21. Biopolymers for delivery of glioblastoma treatments Ministerio de Ciencia e Innovación. Universidad Miguel Hernández. Fecha: 11/2022 / 12/2025. Cuantía: 181.500€ (UMH 96.800€). IP Coordinador: R. Mallavia).

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any.

1. Vehiculización de compuestos naturales antiinflamatorios en liposomas Monteloeder SA. IP: R. Mallavia Universidad Miguel Hernández. Enero-Abr/2006, 2500€.

2. Separación cromatográfica e identificación de compuestos orgánicos procedentes de distintos extractos naturales. Monteloeder SA. IP: R. Mallavia Universidad Miguel Hernández. Jun-Dic/2006, 2500€.

3. Preparación y análisis de cinco muestras en la identificación de sustancia clave e informe técnico. Samuel Sánchez; IP: R. Mallavia Universidad Miguel Hernández. Nov-2017 y Feb 2018, 5000€.

4. Determinación de la actividad virucida de materiales plásticos experimentales. CyT SL (Tecnioa); IP: R. Mallavia Universidad Miguel Hernández. Dic-2020 / Sep-2021, 5000€.

5. Patent Antonio Figueras Huerta, Maria Gasset Vega, Beatriz Novoa García, Magalí Rey Campos, Ricardo Mallavia Marin, Regla Maria Medina Gali, Alicia Martínez López. **"Péptido de miticina y su uso en regeneración celular"** Nº. de solicitud: P201831154. Fecha de prioridad: 28 noviembre 2018. País de prioridad: ES (ES2763349A1). Entidades titulares: Consejo Superior de Investigaciones Científicas y Universidad Miguel Hernández.