



## 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	06/06/2023
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First name	Juan Manuel		
Family name	Fernández Romero		
Gender (*)	Male	Birth date	
Social Security, Passport, ID number			
e-mail	<a href="mailto:ga1feroj@uco.es">ga1feroj@uco.es</a>	URL Web:	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-8443-1358		

(\*) Mandatory

#### A.1. Current position

Position	Full Professor in Analytical Chemistry		
Initial date	19/12/2013		
Institution	Córdoba University		
Department/Center	Analytical Chemistry	Faculty of Sciences	
Country	Spain	Teleph. Number	957218645
Key words	Nanotechnology (nanoparticles and liposomes), Microfluidic systems, (bio)sensors, Bioanalytical Application, Luminescent analysis, Chromatographic and non-chromatographic separation /determination systems		

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

Period	Position/Institution/Country/Interruption cause
12/05/2000 – 18/12/2013	Associate Professor/University of Córdoba/Spain
19/12/2013 – until today	Full Professor/University of Córdoba/Spain

#### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
MsC in Pharmacy	Seville, Spain	1981
Clinical Analysis Specialist	Granada (R.D. 27708/82), Spain	1989
PhD in Chemistry	Córdoba, Spain	1991

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

Juan Manuel Fernández Romero is Full Professor at the Department of Analytical Chemistry (University of Córdoba), since 19/12/2013. He obtained her Degree in Pharmacy (Seville University, 1981), Specialist in Clinical Analysis (Granada University, R.D. 27708/82, 1989) and PhD in Chemistry (Córdoba University, 1991). He has also been assistant (1993-1999) and associated professor (2000-2013). Six-year research periods (CNEAI): 6 (2017-2022, 05/05/2023). He has co-authored 118 research articles (106 in JCR journals, 1501 citations), h-index 21 (WoS, 2023). He has published eight book chapters in international and national publishers. He has presented over 88 communications in national and international scientific meetings under different formats, and 4 National and International research stays. He has collaborated as researcher in 28 European, National, and Regional research projects, international integrated actions, and infrastructure aids. Participate as principal investigator of two research project developments in the framework of FEDER/UCO/JJAA program.

- Respect to education, he has taught in the Fine Chemistry Doctoral Program with quality mention (MCD2003-0028) and excellence distinction (MEE2011-0109) since the academic year of 1999, also in the Master of Advanced Fine Chemistry, with excellence distinction (MCD2006-00377) since

the academic year 1999-2013, and in the Inter-University Master of Chemistry since 2013. He has also taught in the Erasmus Mundus in Forensic Sciences from the academic years between 2011-2014. He has co-supervised 7 Doctoral Thesis (3 with the European/International mention) and other in actual execution, also has supervised 10 Final Master Thesis, and 15 Final Undergraduates Thesis. In the context of transference of knowledge, he has participated as researcher in the transference of knowledge to External Institutions. Also, has co-authored two invention patents (without exploiting).

- Concerning assessment activities, he has participated in the follow commissions: Doctoral Program Evaluation (2000-2007), Academic and Quality assurance in the Master "Erasmus Mundus" in Forensic Sciences (2000-2007). He also has participated as External Evaluator for proposals submitted to 2017 to the FONDECYT of the Chilean CONICYT. He has a member of the Evaluation Commission of Experimental Sciences in the DOCENTIA-UCO program since 2017. He also participates in the "EEES adaptation pilot programs" in the UCO-Science Commission (2007-2009). He is a member of the commissions of biochemistry (since 2009) and biotechnology (since 2022). Since 19<sup>th</sup> April 2021 is member of the A3-Chemistry Accreditation Commission of the Academia Programs (ANECA) of the Spanish University Ministry.

During his research activity, he has been a member of three research groups. He is responsible for the Research Group FQM-303 since 2016. The research activity supposed the development and creation of different research lines. Some of these are: "Development of automatic analytical methodologies", "Design of (bio) catalytic sensors and immunosensors" "Analytical Applicability of the Laser ", "Advanced luminescent techniques coupled with continuous analysis systems, and rapid kinetics", "Nanotechnological applications in analytical chemistry, concerning the synthesis and uses of hybrid nanoparticles and liposomes in dynamic (conventional and microfluidics) systems" and "Development of separative/determinative analytical microfluidic systems". The participation in these research lines has allowed integrated training in topics directly related to the current study aimed at a nanotechnological development using new techniques for the manufacture of nano/bio(materials) and analysis systems for the monitoring of problems in agri-food, environmental, biochemical, pharmaceutical, and forensic areas.

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

### **C.1. Publications** (*see instructions*)

#### Articles in journals (JCR):

- 1) Integrated microfluidic systems for fluorescence monitoring rapid kinetic reactions in bioanalysis. Écija-Arenas, Á., Zafra-Poyato, A. & Fernández-Romero, J.M. Integrated microfluidic systems for fluorescence monitoring rapid kinetic reactions in bioanalysis. *Microchim Acta* 190, 209 (2023). <https://doi.org/10.1007/s00604-023-05786-z>. (0 citation)
- 2) Study of the inhibition effects on glutathione peroxidase immobilized on MNPs using a stopped-flow microfluidic system. Román-Pizarro, V., Carrión-Escudero, A.M., Écija-Arenas, Á. *et al.* Study of the inhibition effects on glutathione peroxidase immobilized on MNPs using a stopped-flow microfluidic system. *Anal Bioanal Chem* **415**, 2091–2100 (2023). <https://doi.org/10.1007/s00216-023-04521-0>. (0 citation)
- 3) Development of an aptamer-based SPR-biosensor for the determination of kanamycin residues in foods. Écija-Arenas, Á., Kirchner, E.M., Hirsch, T., Fernández-Romero, J.M. (2021) *Analytica Chimica Acta*, 1169, 338631. <https://doi.org/10.1016/j.aca.2021.338631>. (17 citation).
- 4) Usefulness of Hybrid Magnetoliposomes for Aminoglycoside Antibiotic Residues Determination in Food Using an Integrated Microfluidic System with Fluorometric Detection. Écija-Arenas, Á., Román-Pizarro, V., Fernández-Romero, J.M. (2021). *Journal of Agricultural and Food Chemistry*, 69, 6888-6896. DOI: 10.1021/acs.jafc.1c01571. (6 citation).
- 5) Luminescence continuous flow system for monitoring the efficiency of hybrid liposomes separation using multiphase density gradient centrifugation, Écija-Arenas, Á., Román-Pizarro, V., Fernández-Romero, J.M. *Talanta*. 222 (2021)121532 DOI: 10.1016/j.talanta.2020.121532. (1 citation).
- 6) Integration of a microfluidic system into a conventional luminescence detector using a 3D printed alignment device, Écija-Arenas, Á., Román-Pizarro, V., Fernández-Romero, J.M, *Microchimica Acta*. 187 (2020) 620- 630 DOI: 10.1007/s00604-020-04597-w. (0 citation).
- 7) Separation and characterization of liposomes using asymmetric flow field-flow fractionation with online multi-angle light scattering detection. Écija-Arenas, Á., Román-Pizarro, V., Fernández-Romero, J.M. (2021) *Journal of Chromatography A*, 1636, 461798, 1-8. <https://doi.org/10.1016/j.chroma.2020.461798>. (6 citation)

- 8) Applicability of Fluorescent Hybrid Magnetoliposomes for the Determination of Reactive Oxygen Compounds in Food. Román-Pizarro, V., Gomez-Hens, A., Fernández-Romero, J.M. Food Analytical Methods. 11 (2018) 2376-2383 DOI: 10.1007/s12161-018-1220-3 (4 citation).
- 9) Automatic determination of coenzyme Q10 in food using cresyl violet encapsulated into magnetoliposomes. Román-Pizarro, V., Fernández-Romero, J.M., Gomez-Hens, A. Food Chemistry 221 (2017) 864-870 DOI: 10.1016/j.foodchem.2016.11.085 (10 citation).
- 10) Separation and purification of hydrophobic magnetite-gold hybrid nanoparticles by multiphase density gradient centrifugation, Écija-Arenas, Á., Román-Pizarro, V., Fernández-Romero, J.M., Gómez-Hens, A., (Microchimica Acta, 183 (2016) 2005-2012. DOI: 10.1007/s00604-016-1838-z (8 citation).
- 11) Fluorometric determination of alkaline phosphatase activity in food using magnetoliposomes as on-flow microcontainer devices. Román-Pizarro, V., Fernández-Romero, J.M., Gómez-Hens, A. Journal of Agricultural and Food Chemistry 62 (2014) 1819-1825 (11 citations)
- 12) Determination of fluoroquinolone antibiotics by microchip capillary electrophoresis along with time-resolved sensitized luminescence of their terbium(III) complexes. Sierra-Rodero, M., Fernández-Romero, J.M., Gómez-Hens, A. Microchimica Acta 181 (2014) 1897-1904 (16 citations)
- 13) Strategies to improve the analytical features of microfluidic methods using nanomaterials. Sierra-Rodero, M., Fernández-Romero, J.M., Gómez-Hens, A. Trends in Analytical Chemistry 57, (2014) 23-33 (11 citations)
- 14) Determination of aminoglycoside antibiotics using an on-chip microfluidic device with chemiluminescence detection. Sierra-Rodero, M., Fernández-Romero, J.M., Gómez-Hens, A. Microchimica Acta 179 (2012) 185-192. (10 citations)
- 15) Determination of antioxidant additives in foodstuffs by direct measurement of gold nanoparticle formation using resonance light scattering detection. Andreu-Navarro, A., Fernández-Romero, J.M., Gómez-Hens, A. Analytica Chimica Acta 695 (2012) 11-17. (45 citations)

#### Book chapters:

- 1) Fluorescence: Clinical and drug applications, Fernández-Romero, J.M., Aguilar-Caballos, M.P., Encyclopedia of Analytical Science pp. 233-238. Published: 2019. DOI: 10.1016/B978-0-12-409547-2.00152-9, Part of ISBN: 9780124095472.
- 2) Fluorescence | Food Applications, Fernández-Romero, J.M., Aguilar-Caballos, M.P., Fluorescence: Food applications pp. 281-291. Published: 2019 DOI: 10.1016/B978-0-12-409547-2.00156-6, Part of ISBN: 9780124095472.
- 3) Microfluidic Systems in Analytical Chemistry. Fernández-Romero, J.M., Gomez-Hens, A. Encyclopedia of Analytical Chemistry (on-line) first published in 2017 (RSC) <https://doi.org/10.1002/9780470027318.a9591>.

## **C.2. Congress**

- Integrated stopped-flow and microfluidic systems for monitoring rapid kinetic reactions in bioanalysis. Á. Écija-arenas, Ángela, A. Zafra-poyato, J.M. Fernández-Romero (Poster) X International Congress on Analytical Nanoscience & Nanotechnology (X NyNA 2022) International. Ciudad Real (Spain) 5-8 September 2022.
- Characterization of latent fingerprints using advanced luminescent techniques aided by protein-metallic nanocluster complexes. J.M. Fernández-Romero, C. Pulido-Reina, Á. Écija-arenas (Poster) X International Congress on Analytical Nanoscience & Nanotechnology (X NyNA 2022) International. Ciudad Real (Spain) 5-8 September 2022.
- Determinación de colorantes en alimentos mediante la técnica de mezcla de flujo detenido utilizando nanopartículas magnéticas funcionalizadas con enzima lacasa. M. Naz Lucena, Á. Écija Arenas, J.M. Fernández Romero (Comunicación Oral). IX congreso final de proyectos science-ies de iniciación a la investigación e innovación en secundaria en andalucía (congreso final piiisa), Córdoba, 2 de mayo 2019.
- Determinación Fluorimétrica-enzimática de cafeína en bebidas refrescantes, M. Naz Lucena, V.Román Pizarro, J.M. Fernández Romero (Póster y Comunicación Oral). IX congreso final de proyectos science-ies de iniciación a la investigación e innovación en secundaria en andalucía (congreso final piiisa), Córdoba, 2 de mayo 2019.
- Desarrollo de un método rápido para la determinación de nanopartículas en plásticos. Á. Écija Arenas, V. Román-Pizarro, M. V. Zurita Lozano, M.P. Aguilar Caballos y J.M. Fernández Romero (Póster y Comunicación oral). X congreso final de proyectos science-ies de iniciación a la investigación e innovación en secundaria en andalucía (Congreso Final PIIISA), 23 abril 2020

## **C.3. Research projects**

- 1) Proyecto: Innovaciones en el diseño de sistemas miniaturizados y biosensores (INBIOMIN). UCO-FEDER-Andalucía ID: 1381000-F) Lead Researcher J.M. Fernández Romero, Participants: 10, Funding Entity: FEDER/UCO/JJAA), Period: 01/01/2022 – 31/12/2022 Funding: 24500,00 €.
- 2) Project: Innovaciones en el desarrollo de plataformas analíticas de respuesta rápida para la evaluación de la calidad y seguridad alimentaria FEDER/UCO/JJAA ID: 126367 MD B1). Lead Researcher: J.M. Fernández Romero, Participants: 10, Funding Entity: FEDER/UCO/JJAA), Period: 01/01/2020-31/12/2020, Funding: 10500.00 €
- 3) Project: Nanotechnological innovations for the quality and safety of meat and dairy foods (XXI P.P. Modality 4.1, Bridge aids for research project development). Lead Researcher: J.M. Fernández Romero, Participants: 8, Funding Entity: FEDER Funds (80%) - UCO (20%), Period: 06/01/2016 - 06/31/2018, Funding: 17100.00 €.
- 4) Project: Use of new nanomaterials for the development of rapid response analytical methods (CTQ-2012-32941/ BQU). Lead Researcher: A. Gómez Hens, Participants: 7. Financing entity: Ministerio de Economía y Competitividad (MICINN). Period: 01/01/2013 - 12/31/2015. Funding: 115830.00 €.
- 5) Project: Rapid methods of separation and determination in agrifood analysis (P09-FQM-4933). Lead Researcher: A. Gómez Hens, Participants: 4. Funding Entity: Junta de Andalucía (Excellence). Period: 01/01/2012 - 12/31/2014. Funding: € 261167.68.

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

Two Patents:

- 1) Method and installation for the quantitative determination of hydroxymetabolites of vitamin D3 continuously and automatically (P9702577). Organization: EPO / MTAP. Seekers: J.M. Quesada Gómez, M.D. Luque de Castro, J.M. Fernández Romero and F. Ortiz Boyer. Situation: Without exploitation.
- 2) Automatic enzymatic hydrolysis system by flow injection analysis and immobilized enzymes (P9200076). Organization: EPO / MTAP. Seekers: JM. Valcárcel Cases, M.D. Luque de Castro and J.M. Fernández Romero Situation: Without exploitation.

#### **C.5. International and National Research Stays.**

- 1) Center: Institut für Pharmazeutische Chemie (Karl-Franzens Universität Graz). Place: Graz (Austria). Development of Precipitation Flow Injection Immunoassay. Financing: Scientific Austria and Spain Technical Cooperation Program (Int. Actions, MEC). 1 month. Date: 1994
- 2) Higher Technical Institute of Structural Chemistry (Technical University of Lisbon). Location: Lisbon (Portugal). Objective: Development of sensors for analytical measurements in real time. Determinations in dynamic regime in situ. Financing: Integrated Hispano-Portuguesas 81-B, (MEC). 15 days. Date: 1995
- 3) Gesellschaft für Biotechnologische Forschung (GBF). Place: Braunschweig (Germany). Objective: Research tasks in the Department of enzymology on the development of amperometric immunosensors for the determination of atrazine. Financing: Assistant training room (JJAA and UCO). Duration: 3 months. Date: 1996
- 4) Laser Technology Service (University of Málaga). Place: Malaga (Spain). Objective: Research tasks related to optical emission spectroscopy of laser-induced plasmas (LIBS). Financing: Assistant training room (JJAA and UCO). Duration: 9 months. Date 1997-1998.