



CURRICULUM VITAE (CVA)

AVISO IMPORTANTE – El Curriculum Vitae no podrá exceder de 4 páginas. Para rellenar correctamente este documento, lea detenidamente las instrucciones disponibles en la web de la convocatoria.

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

Part A. PERSONAL INFORMATION

CV date

05/09/2023

First name	Encarnación		
Family name	Moyano Morcillo		
Gender (*)	Female	Birth date (dd/mm/yyyy)	16/04/1963
Social Security, Passport, ID number	33910054G		
e-mail	encarna.moyano@ub.edu	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-1233-8864	

(*) Mandatory

A.1. Current position

Position	Full Professor		
Initial date	16/07/2019		
Institution	University of Barcelona		
Department/Center	Chemical Engineering and Analytical Chemistry	Faculty of Chemistry	
Country	Barcelona	Teleph. number	934039277
Key words	Analytical Chemistry, Mass Spectrometry, Chromatography, Environmental analysis, Food analysis		

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

Period	Position/Institution/Country/Interruption cause
1988-1997	Assistant Professor (Profesor Ayudante)
1997-2019	Associate Professor (Profesor Titular)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed (Chemistry)	University of Barcelona /Spain	1986
Master (Analytical Chemistry)	University of Barcelona/Spain	1989
PhD (Chemistry)	University of Barcelona/Spain	1995

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

My **Scientific Contributions** has been focused on the development of new analytical methodologies based on both **Separation Techniques and Mass Spectrometry** and their application to the determination of Contaminants of Environmental and Food interest, solving problems and drawbacks in the analytical methodologies already available. I have developed analytical methods based on coupling both liquid chromatography (LC) and gas chromatography (GC) to mass spectrometry (MS) using atmospheric pressure ionization techniques (Electrospray, APCI, APPI in LC-MS, as well as APCI and APPI in GC-MS). Moreover, I have also studied and developed methods based on 'Ambient Ionization MS (AIMS)' (DESI, DART) for the direct analysis of samples by MS to improve the high throughput of control laboratories. I have also been working with low-resolution mass analyzers (quadrupoles, ion traps) for quantitative analysis and MS/MS and MSⁿ to propose fragmentation

pathways for different families of target compound. In the last decades my research has focused in the use of high-resolution mass analyzers (TOF, Orbitrap, ICR-FT) combined with API, Ambient MS techniques and tandem MS for the identification/characterization of non-target contaminants. More recently, I have started to work with ion mobility-mass spectrometry (IM-MS) to improve the analysis of more complex samples of closely related compounds (isobaric and isomeric compounds). In fact, I lead (IP) the project for the acquisition of a UHPLC-QTOF instrument equipped with ion mobility for the "Centros Científicos y Tecnológicos de la Universidad de Barcelona (CCiTUB) in the call for infrastructures for scientific-technic centers of the Spanish Ministry (Ref.: EQC2019-005533-P).

The experience accumulated in instrumental analysis allowed me to develop new methodologies for the analysis of a large number of compounds. I developed LC-MS/MS methods (HPLC and UHPLC) for the analysis of quaternary ammonium compounds (quats), veterinary drugs (antibiotics, coccidiostats, benzamidazols, oligosacarides, etc.), food packaging migrants (BPA, halogenated bisphenol A and F, diglycidylethers of BPA and BPF, photoinitiators, etc.), polyfluorinated compounds (PFASs), etc. and GC-MS methods for the determination of fluorinated compounds (neutral PFAS such as FTOs, FTOHs, FOSAs, FOSEs), furan and dioxins, short-chain chloroparaffins, etc. I also studied the separation of complex mixtures (environmental waters, vegetables, species, olive oil, etc.) and the identification/characterization of unknowns (transformation/fotodegradation products, metabolites, marine biotoxins, new emerging pollutants, etc.) **to generate new knowledge to solve analytical problems in the fields of environmental monitoring and food analysis.** The research results allow me to receive **5 six-year research period** from ANECA.

I have combined the research activity with the transfer of knowledge to the industry and society through more than 60 contracts with relevance companies. In fact, I received the **Transfer of Knowledge and Innovation** (six-year transfer period) from ANECA (2019).

I published **more than 120 publications in scientific journals** (more than 90% in Q1) in fields of Separation Sciences, Mass Spectrometry, Food analysis, Environmental Monitoring. Citation and IF of my publications allowed me to achieve a ***h-index* of 40** with more than 4100 citations. The results have been presented in more than **300 conferences and meetings at national and international level**. I have been supervisor of **12 Doctoral Thesis**.

Funding obtained: since 1987 I have been participating in R&D projects (> 35) of 'Plan Nacional' (Spanish Ministry) and Generalitat de Catalunya, and I was the **main researcher (IP)** in one project for Young Researchers (CIRIT, Generalitat de Catalunya), 3 projects of the 'Plan Nacional' (CTQ2012-30836; CTQ2015 -63968-C2-1-P; EQC2019-005533-P) and 1 project of Infrastructure (EQC2019-005533-P). In addition, I have participated in 8 international projects of the European Community (eg. PIAP-GA-2009-230676; FOOD-CT-2003-506820; QLK1-CT-1999-01197) and in one project of the University of Nuevo Leon (Mexico) (CE390-10).

On the other hand, the **postdoctoral stays** carried out in several **research centers of international relevance** in the field of mass spectrometry has allowed me to consolidate my knowledges in this field and to have relationship with worldwide well-recognized researchers in mass spectrometry. Thus, in 1995 I did a postdoctoral stay in the Mass Spectrometry Research Unit (Univ. Wales, Swansea, UK) to collaborate with Prof. D. Games in the evaluation of the CE-MS coupling. In 2009, I have been at Purdue University (Aston Lab, Chemistry Department, Indiana, USA) with Prof. R.G. Cooks to work with Ambient MS techniques. My dedication to the field of mass spectrometry and to the diffusion of this technique in our country has led me to be the **President of the Spanish Society of Mass Spectrometry (SEEM)** (2014-2021).

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

C.1. Publications (*see instructions*)

- 1) N.I. Medina-Pérez; E. Cerdán-García; F. Rubió; L. Viure; M. Estrada; E. Moyano; E. Berdalet (2023), *Progress on the Link between Nutrient Availability and Toxin Production by *Ostreopsis cf. ovata*: Field and Laboratory Experiments*, [Toxins](#), **15**(3), 188.
- 2) R. Seró, J.F. Ayala-Cabrera, F.J., Santos, E. Moyano (2022), *Paper spray-atmospheric pressure photoionization-high resolution mass spectrometry for the direct analysis of neutral fluorinated compounds in waterproof impregnation sprays*, [Analytica Chimica Acta](#), **1204**, 330720.

- 3) A. Arrizabalaga-Larrañaga, P. de Juan-de Juan, C. Bressan, M. Vázquez-Espinosa, A.V. González de Pedro, F.J. Santos, E. Moyano (2022), *Ultra-high-performance liquid chromatography-atmospheric pressure ionization-tandem mass spectrometry method for the migration studies of primary aromatic amines from food contact materials*, [Analytical and Bioanalytical Chemistry](#), 414 (9), 3137-3151.
- 4) J.F. Ayala-Cabrera, E. Moyano, F.J. Santos (2021), *Recent advances in analytical methodologies based on mass spectrometry for the environmental analysis of halogenated organic contaminants*, [Trends in Environmental Analytical Chemistry](#), 30, e00122 (pp. 1-17).
- 5) N.I. Medina-Pérez, M. Dall'Osto, S. Decesari, M. Paglione, E. Moyano, E. Berdalet (2021), *Aerosol Toxins Emitted by Harmful Algal Blooms Susceptible to Complex Air-Sea Interactions*, [Environmental Science and Technology](#) 55(1), pp. 468-477. [Open Access](#)
- 6) J.F. Ayala-Cabrera, M. Ábalos, E. Abad, E. Moyano, F.J. Santos (2020), *Feasibility of gas chromatography-atmospheric pressure photoionization-high-resolution mass spectrometry for the analysis of polychlorinated dibenzo-p-dioxins, dibenzofurans, and dioxin-like polychlorinated biphenyls in environmental and feed samples*, [Anal. Bioanal. Chem.](#) 412(15), pp. 3703-3716.
- 7) A. Rubirola, M.R. Boleda, M.T. Galceran, E. Moyano (2019). *Formation of new disinfection by-products of priority substances (Directive 2013/39/UE and Watch List) in drinking water treatment*. [Environmental Science and Pollution Research](#), 26, pp. 28270-28283.
- 8) R. Sero, M. Vidal, J. Bosch, P. Rodríguez, M.T. Galceran, E. Moyano (2019), *Desorption electrospray ionization-high resolution mass spectrometry for the analysis of unknown materials: The phytosanitary product case*, [Talanta](#), 194, pp. 350-356
- 9) J.F. Ayala-Cabrera, F.J. Santos, E. Moyano (2018). *Negative-ion atmospheric pressure ionisation of semi-volatile fluorinated compounds for ultra-high-performance liquid chromatography tandem mass spectrometry*. [Anal. Bioanal. Chem.](#), 410, pp. 4913-4924.
- 10) J. Jimenez-Villarin, A. Serra-Clusellas, C. Martinez, A. Conesa, J. Garcia-Montano, E. Moyano (2016) *Liquid chromatography coupled to tandem and high-resolution mass spectrometry for the characterisation of ofloxacin transformation products after titanium dioxide photocatalysis*, [J. Chromatog. A.](#), 1443, pp.201-210.

Book chapters: (DOI is available through the link of the publication)

- 1) A. Arrizabalaga-Larrañaga; F.J. Santos; E. Moyano (2021), *Liquid chromatography pigment profile for characterization and fraud detection in olive oils*, Book: [Chromatographic And Related Separation Techniques In Food Integrity And Authenticity](#), pp 21-41. ISBN: 978-178634992-7.
- 2) E. Moyano, M.T. Galceran (2017), *Direct Analysis of Pesticides by Stand-Alone Mass Spectrometry: Flow Injection and Ambient Ionization*, Book: [Applications in High Resolution Mass Spectrometry: Food Safety and Pesticide Residue Analysis](#), pp. 265-313. ISBN: 978-012809648-2.

C.2. Congress

Invited lectures

- 1) E. Moyano. *Mass Spectrometry for the Environmental Analysis of Halogenated Organic Pollutants*. XXVII Congreso Nazionale della Società Chimica Italiana (SCI2021). Italy (online). September 2021
- 2) E. Moyano. *Ambient Ionization-Mass Spectrometry: Making real the direct analysis by mass spectrometry*. XII Reunión SEQA. Valladolid (Spain). July 2019 .
- 3) E. Moyano, A. Arrizabalaga, J.F. Ayala-Cabrera, R. Seró, F.J. Santos, M.T. Galceran. *New approaches based on APPI: environmental and food analysis*. 14th Annual LC/MS/MS Workshop on environmental applications and food safety. Barcelona (Spain). June 2018
- 4) E. Moyano. *Multidimensionalidad de la Cromatografía de Líquidos acoplada a la Espectrometría de Masas*. Tercera Jornada Científica sobre Estrategias de Separación en Cromatografía (University of Valencia). Burjassot (Valencia). July 2018
- 5) E. Moyano. *Ambient Ionization Mass Spectrometry: fundamentals and applications for the analysis of organic compounds*. Ciclo de Conferencias del Instituto de Química Orgánica (IQOG-CSIC). Madrid (Spain). June 2018.

C.3. Research projects

- 1) **Ref.: 2021 SGR 00281**. Title: "Grup de Recerca en Cromatografia i Espectrometria de Masses: Química Analítica del Medi Ambient i de la Seguretat Alimentària (ChroMS-EnviFood)". Funding body: AGAUR (Generalitat de Catalunya). Call: "Suport als Grups de Recerca". **IP: F.J. Santos**. Dates: 01-2023/31-2025. Amount subsidy: - . Participation: researcher.

- 2) **Ref.: PID2021-122743NB-I00.** Title: "Contaminantes orgánicos emergentes, persistentes y móviles. Abordando nuevos retos analíticos en el control de entornos acuáticos usando enfoques dirigidos y no dirigidos". Funding body: Ministerio de Ciencia e Innovación. Call: Proyectos de Generación de Conocimiento (Plan Estatal de Investigación, Técnica y de Innovación 201-2023). **IP: F.J. Santos y E. Moyano.** Affiliation: University of Barcelona. Dates: 01/09/2022-31/08/2024. Amount subsidy: 121.000,00€. Participation: Main Researcher.
- 3) **Ref.: 2020-DI-079.** Title: "Nuevos ingredientes cosméticos para la prevención del cancer de piel y melisma" (Doctorados industriales 2020. Empresa: Roka Furadada". Funding body: AGAUR (Generalitat de Catalunya). Call: Doctorats Industrials. **IP: Encarnación Moyano.** Dates: 02-2021/02-2024. Amount subsidy: 27,360.00€. Participation: Researcher and Doctoral Thesis supervisor.
- 4) **Ref.: EQC2019-005533-P.** Title: "Equipo de espectrometría de masas de alta resolución Q-TOF con movilidad iónica y acoplado a un sistema de UHPLC (UHPLC-Q-TOF-IMS)". Funding body: Ministerio de Ciencia, Innovación y Universidades. Call: Programa Estatal de Generación del Conocimiento (Subprograma de Infraestructuras de Investigación y Equipamiento Científico-Técnico). **IP: Encarnación Moyano.** Affiliation: University of Barcelona. Dates: 01/01/2019-10/03/2022. Amount subsidy: 295,000.00€. Participation: Main Researcher.
- 5) **Ref.: PGC2018-095013-B-I00.** Title: "Metodologías recientes en espectrometría de masas para analisis de control y alto rendimiento". Funding body: Ministerio de Ciencia, Innovación y Universidades. Call: Programa Estatal de Generación del Conocimiento (Proyectos I+D+i). **IP: Encarnación Moyano.** Affiliation: University of Barcelona. Dates: 01/01/2019-31/12/2021. Amount subsidy: 79,860.00€. Participation: Researcher.
- 6) **Ref.: 2017SGR310.** Title: "Química Analítica. Análisis de Contaminantes". Funding body: AGAUR (Generalitat de Catalunya). Call: "Suport als Grups de Recerca". **IP: Encarnación Moyano.** Dates: 01-2017/10-2021. Amount subsidy: - . Participation: researcher.
- 7) **Ref.: CTQ2015-63968-C2-1-P.** Title: "Avances recientes en espectrometría de masas. Evaluación de su potencialidad para el análisis de compuestos orgánicos de bajo peso molecular". Funding body: MINECO. Call: Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia (Proyectos I+D+i). **IP: Encarnación Moyano.** Dates: 01-2015/12-2018. Amount subsidy: 76,400.00€. Participation: Researcher.
- 8) **Ref.: 2013-DI-044.** Title: "Estudio de la degradación de contaminantes emergentes en diferentes procesos de tractamiento de aguas (Doctorados industriales 2013. Empresa: Hidroquímica Tractaments i Química Industrial". Funding body: AGAUR (Generalitat de Catalunya). Call: Doctorats Industrials. **IP: Encarnación Moyano.** Dates: 02-2014/02-2017. Amount subsidy: 27,360.00€. Participation: Researcher and Doctoral Thesis supervisor.
- 9) **Ref.: CTQ2012-30836.** Title: "Nuevas Estrategias en Espectrometría de Masas. Aplicación al Análisis de Contaminantes Orgánicos". Funding body: MINECO. Call: Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia (Proyectos I+D+i). **IP: Encarnación Moyano.** Dates: 01-2013/12-2015. Amount subsidy: 90,000.00€. Participation: Researcher.

C.4. Contracts, technological or transfer merits

- 1) **Ref.: NET879010/1.** Title: "Servicio de determinaciones analíticas de Ovatoxinas en el laboratorio de control de la calidad ambiental en su unidad técnica de Palmones". Entity: CSIC- Junta de Andalucía. **IP: Encarnación Moyano.** Dates: 2018-2019. Amount of funding: 13,658.54€. Participation: Researcher.
- 2) **Ref.: 308539.** Title: "Servei d'anàlisi: Desenvolupament de mètodes d'anàlisi en el marc del projecte CTM2014-53818-R". Entity: CSIC. **IP: Encarnación Moyano.** Dates: 2015-2016. Amount of funding: 7,764.70€. Participación: Investigador.
- 3) **Ref.: 307739.** Title: "Implementación de métodos de análisis de compuestos orgánicos en bebidas refrescantes mediante SPME-GC-MS". Entity: TRIC - Cítricos y Refrescantes, S.A.U (CITRESA). **IP: Encarnación Moyano.** Dates: 2014-2015. Amount of funding: 9,337.24€. Participation: Researcher.
- 4) **Ref.: 304742.** Title: "Servicio de coaching sobre cromatografía líquida y de gases. Empresa: Novartis Farmacéutica, S.A." **IP: M^a Teresa Galceran** (Universidad de Barcelona). Dates: 2017. Amount of funding: 10,500.00 €. Participation: Researcher/Coach.
- 5) **Ref.: AGBAR-training:** Title: "LC-MS/MS avanzado vs LC-HRMS non-target. Formación/entrenamiento a personal técnico superior de AGBAR. Lab. Quím. Org. AGBAR. Barcelona (Spain). 2018.