

**Part A. PERSONAL INFORMATION**

		<b>CVA Date</b>	14-10-2019
Name and surname	M <sup>a</sup> Ángeles Molina Gómez		
DNI/NIE/Passport		Edad	65
Researcher's identification number	Researcher ID	H-4164-2017	
	Orcid	0000-0002-9661-1660	

**A.1. Current professional situation**

Organism	Universidad de Murcia		
Dpto./Center	Dpto. de Química Física / Facultad de Química		
Address	Campus de Espinardo, 30100 Espinardo Murcia		
Land line phone	868887524	Email	<a href="mailto:amolina@um.es">amolina@um.es</a>
Professional category	Full professor	Start date	1994
UNESCO code	221005-3		
Keywords	Electrochemistry, Physical Chemistry		

**A.2. University education (title, institution, date)**

BSc/Grade/MSc/Doctorate	University	Year
BSc in Chemical Sciences	University of Murcia	1975
Doctorate in Chemical Sciences	University of Murcia	1979

**A.3. General indicators of the quality of scientific production (see instructions)**

- Number of six-year research periods: 6 (the last one in 2011)
- Number of doctoral thesis directed: 14 (5, last 10 years)
- Total citations (Scopus, February 2019): 2972 (Scopus October 2019)
- Average number of citations/year during the period 2015-2019 (Scopus, October 2019): 200
- Total publications in the first quartile: 185.
- Total publications: 265 (250 Scopus 2019)
- h-index (Scopus, February 2019): 25

**Part B. FREE SUMMARY OF CV (maximum 3500 characters, including blank spaces)**
**Global merits:**

- **Fellow of the International Society of Electrochemistry** from 2017
- **Associate Editor** of the journal **Electrochimica Acta** (Impact factor: **5.383**, JCR 2018) from 2018
  - **Co-Editor** of the Vol I '**Fundamental and Theoretical Electrochemistry**' (2017) in **Current Opinion in Electrochemistry**
- **Member of the Editorial committee of the journals:**
  - Electrochemistry Communications** (Impact factor: 4.197, JCR 2018).
  - Journal of Electroanalytical Chemistry** (Impact factor: 3.218, JCR 2018).
  - International Journal of Electrochemical Science** (Impact factor: 1.284 JCR 2018).
  - The Open Electrochemistry Journal;**
  - International Journal of Electrochemistry.**
- **Full member of the Academy of Sciences of the Region of Murcia of Spanish Institute.**
- **270** publications, with a large number corresponding to journals within the **1st quartile and 1st third** of the areas of Physical Chemistry, Analytical Chemistry and Electrochemistry of JCR.
- Participation in **29 competitive research projects (24 as main researcher)**
- **1 book:** "Pulse Voltammetry in Physical Electrochemistry and Electroanalysis", Ed. Springer, 2016 (61 citations, WOS, October 2019)
- **6 book chapters**
- **14 Doctoral Thesis, 4 European Mention 2 international mention and 6 Extraordinary Doctorate Award.** 1 Thesis in advanced state of realization.
- Reviewer of the following journals: **Journal of Electroanalytical Chemistry** (T1, 102 articles (2019)); **Electrochimica Acta** (Q1, 102 articles (2019)); **Electrochemistry**

**Communications** (Q1, 14 articles (2019)); **Electroanalysis** (T1, 6 articles (2019)); **Journal of Physical Chemistry C** (Q1, 28 articles); **Sensors and Actuators B Chemical** (Q1, 5 articles); **Chemical Physics Letters** (T2, 5 articles). Since 2007.

- 11 Bachelor's Thesis directed. 2 TFG, 4 TFM and 4 DEAS.

- **Concession of all the research periods requested (6).**

**- Participation in the organization of congresses**

**Member of the Scientific Committee:**

- XXX Reunión del GE de la RSEQ / XI Encontro Ibérico de Electroquímica (Tenerife, 2009).
- XIX Congreso de la Sociedad Iberoamericana de Electroquímica / Reunión del GE de la RSEQ (Alcalá de Henares, 2010).
- XIV Iberic Meeting of Electrochemistry and XVII Meeting of the Portuguese Electrochemical Society (Madeira, 2012).
- XXXIV Reunión del GE de la RSEQ / XIV Encontro Ibérico de Electroquímica (Valencia 2013).
- XXXV Reunión del GE de la RSEQ (Burgos 2014)
- I Jornadas Doctorales de la Escuela Internacional de Doctorado de la U. Murcia

**Organizing committee:**

- President of the organizing committee of the “XXXII Reunión del GE de la RSEQ / XIII Encontro Ibérico de Electroquímica” (Murcia, 2009).
- XXXIII Reunión del GE de la RSEQ (Madrid, 2012).

**Research lines**

- 1.- Analytical and numerical resolution of diffusive and kinetic-diffusive differential equations for electrodes of different geometries and size and different boundary conditions.
- 2.- Charge transfer processes (ionic and electronic) at micro and nanosurfaces non-uniformly accessible.
- 3.- Study of charge transfer processes with pulse and scanning electrochemical techniques.
- 4.- Design of new chronopotentiometric and voltammetric techniques.
- 5.- Study of electrocatalysis of molecules and biomolecules confined in a surface.
- 6.- Study of homogeneous catalytic and multielectronic processes, as well as complicated with homogeneous kinetic charge transfer processes in macroelectrodes, microelectrodes and nanoelectrodes.
- 7.- Sensors and microsensors for the detection of electroactive pollutants in natural media.
- 8.- Nanoelectrocatalysis in metallic nanoparticles. Application to limiting reactions in fuel cells.
- 9.- Theoretical and experimental study of charge transfer at electrodes and liquid|liquid interfaces modified with nanoparticles. Detection of ionisable drugs.
- 10.- Coupling between ionic and electronic transfers.
- 11.- Charge transfer processes at semiconductors

**Part C. MOST RELEVANT MERITS** (classified by type)

**C.1. Publications** (10 of the most representative of the last 10 years)

**1. Authors:** A. MOLINA, J. GONZALEZ

**Title:** **Pulse Voltammetry in Physical Electrochemistry and Electroanalysis:** Theory and applications

**Reference:** Springer Monographs on Electrochemistry

**Type:** **Book.** N<sup>o</sup> of citations: 61

**ISBN:** 978-3-319-21250-0; doi: 10.1007/978-3-319-21251-7 (2016)

**Publishing (book):** Springer International Publishing. Place of publication: Cham

**2. AUTORES:** Y. VOGEL, A. MOLINA, J. GONZALEZ, S. CIAMPI

**Title:** Quantitative Analysis of Cyclic Voltammetry of Redox Monolayers Adsorbed on Semiconductors: Isolating Electrode Kinetics, Lateral Interactions and Diode Currents

**Reference:** Analytical Chemistry

**Ranking JCR:** Chemistry, Analytical. Impact factor (JCR 2018): 6.350

- Position: 4/80 (Q1) Type: Article N° of citations: 1 (Web of Science)  
Volume: 90 Pages initial, final: 2088-2094 Date: 2018.
- 3. Authors: E. LABORDA, A. MOLINA, V. FERNÁNDEZ ESPÍN, F. MARTÍNEZ-ORTIZ, J. GARCÍA DE LA TORRE, R. G. COMPTON**  
Title: Single Fusion Events at Polarized Liquid|Liquid Interfaces.  
Reference: Angewandte Chemie International Edition  
Ranking JCR: Chemistry, Multidisciplinary. Impact factor (JCR 2018): 12.257  
Position: 14/171(Q1) Type: Article N° of citations: 11 (Web of Science)  
Volume: 56 Pages initial, final: 782-785 Date: 2017.
- 4. Authors: A. MOLINA, E. LABORDA, J. GONZÁLEZ**  
Title: The reaction layer at microdiscs: a cornerstone for the analytical theoretical treatment of homogeneous chemical kinetics at non-uniformly accessible microelectrodes  
Reference: Electrochemistry Communications  
Ranking JCR: Electrochemistry. Impact factor (JCR 2018): 4.197  
Position: 6/28 (Q1) Type: Article N° of citations: 10 (Web of Science)  
Volume: 71 Pages initial, final: 18-22 Date: 2016.
- 5 A. MOLINA, E. LABORDA**  
Title: Detailed Theoretical Treatment of Homogeneous Chemical Reactions Coupled to Interfacial Charge Transfers  
Reference: Electrochimica Acta  
Ranking JCR: Electrochemistry. Impact factor (JCR 2018): 5.383  
Position: 5/26 (Q1) Type: Article (Review) N° of citations: 1 (Web of Science)  
Volume: 286 Pages initial, final: 374-396 Date: 2018.
- 6. Authors: A. MOLINA, J. GONZÁLEZ, E. O. BARNES, R. G. COMPTON**  
Title: Simple analytical equations for the current-potential curves at microelectrodes: A universal approach  
Reference: Journal: Journal of Physical Chemistry C  
Ranking JCR: Chemistry, Physical. Impact factor (JCR 2018): 4.309  
Position: 38/146 (T1) Type: Article. N° of citations: 15 (Web of Science)  
Volume: 118. Pages initial, final: 346-356. Date: 2014
- 7. A. MOLINA, E. LABORDA, F. MARTÍNEZ-ORTÍZ, E. TORRALBA, R. G. COMPTON**  
Title: Characterization of Follow-Up Chemical Reactions by Reverse Pulse Voltammetry. An Analytical Solution for Spherical Electrodes and Microelectrodes.  
Reference: Electrochimica Acta  
Ranking JCR: Electrochemistry. Impact factor (JCR 2018): 5.383  
Position: 5/26 (Q1) Type: Article N° of citations: 8 (Web of Science)  
Volume: 87 Pages initial, final: 416-424 Date: 2013.
- 8. Authors: A. MOLINA, C. SERNA, Q. LI, E. LABORDA, C. BATCHELOR-MCAULEY, R. G. COMPTON**  
Title: Analytical Solutions for the Study of Multielectron Transfer Processes by Staircase, Cyclic, and Differential Voltammetries at Disc Microelectrodes  
Reference: Journal of Physical Chemistry C  
Ranking JCR: Chemistry, Physical. Impact factor (JCR 2018): 4.309  
Position: 38/146 (T1) Type: Article. N° of citations: 18 (Web of Science)  
Volume: 116 Pages initial, final: 11470-11479. Date: 2012
- 9. Authors: A. MOLINA, J. GONZALEZ, M. HENSTRIDGE R. G. COMPTON**  
Title: Voltammetry of Electrochemically Reversible Systems at Electrodes of Any Geometry: A General, Explicit Analytical Characterization  
Reference: Journal of Physical Chemistry C  
Ranking JCR: Chemistry, Physical. Impact factor (JCR 2018): 4.309  
Position: 38/146 (T1) Type: Article. N° of citations: 47 (Web of Science)  
Volume: 115 Pages initial, final: 4054-4062. Date: 2011
- 10. Authors: A. MOLINA, J. GONZALEZ, E. LABORDA. F. M. ORTIZ, L. K. BIENIASZ**  
Title: Electrocatalysis at Modified Microelectrodes: A Theoretical Approach to Cyclic Voltammetry  
Reference: Journal of Physical Chemistry C  
Ranking JCR: Chemistry, Physical. Impact factor (JCR 2018): 4.309  
Position: 38/146 (T1) Type: Article. N° of citations: 11 (Web of Science)  
Volume: 114 Pages initial, final: 14452-14451. Date: 2010

## **C.2. Projects** (only the last 5 years)

1. Title of the project: Advances in the study of charge transfer processes at static and dynamic micro- and nano-interfaces (19887/Grupos de Excelencia de la Región de Murcia /15). Funding entity: Fundación Séneca de la Región de Murcia. Duration: 2016-2020. Total amount: 250.000 Euros. Principal investigator: Ángela Molina Gómez. Number of researchers: 5
2. Title of the project: Electrocatálisis molecular en diferentes interfaces: análisis de la respuesta electroquímica (CTQ2015-65243-P). Funding entity: Ministerio de Economía y competitividad. Duration: 2016-2018. Total amount: 46.000 Euros. Principal investigator: Joaquín González Sánchez. Number of researchers: 5
3. Title of the project: Red de Excelencia Sensores y Biosensores (CTQ2015-71955-REDT). Funding entity: Ministerio de Economía y competitividad. Duration: 2015-2016. Total amount: 40.000 Euros. Principal investigator: José Manuel Pingarrón Carrazón. Number of researchers: Ángela Molina Gómez.
4. Title of the project: Estudio de procesos de transferencia de carga y procesos electrocatalíticos en macro, micro y nano interfases (19456/PI/14). Funding entity: Fundación Séneca (Comunidad Autónoma de la Región de Murcia). Duration: 2015. Principal investigator: Ángela Molina Gómez.
5. Title of the project: Desarrollo de modelos para la caracterización de nanopartículas mediante técnicas electroquímicas (18968/JLI/13). Funding entity: Fundación Séneca de la Región de Murcia. Duration: 2014-2016. Total amount: 40.000 Euros. Principal investigator: Eduardo Laborda Ochando. Number of researchers: 7
6. Title of the project: Electroquímica dinámica en interfases convencionales, micrométricas y nanométricas (CTQ2012-36700). Funding entity: Ministerio de Economía y Competitividad. Duration: 2013-2015. Total amount: 90.090 Euros. Principal investigator: Ángela Molina Gómez. Number of researchers: 7
7. Title of the project: UMU incoming mobility programme action. Funding entity: Marie Curie Actions (Comisión de las Comunidades Europeas). Duration: 2011-2015. Total amount: 1.206.200,00 euros. Principal investigator: Antonio F. Gómez Skarmeta.

## **C.5 Other achievements**

- Research staff training fellowship (1976-1978).
- Extraordinary Doctorate Award (October-1979).
- President of the doctorate commission of the Area of Experimental Sciences (1991)
- Vice-dean of Cultural Activities and Study Plans of the Faculty of Chemistry of the University of Murcia (January 1992- May 1994).
- Member of the R.S.E.Q. and of the Iberoamerican Society of Electrochemistry.
- Member of the International Society of Electrochemistry (I. S. E.)
- Member of the research commission of the University of Murcia (1991-2010).
- Positive evaluation of 6 teaching periods.
- Collaboration with DGICYT by reviewing research projects (from 1991).
- Teaching in the interuniversity doctorate program "Electroquímica. Ciencia y Tecnología", with Mention of Excellence.
- Teaching in the doctorate program "Química" of the University of Murcia, with Mention of Excellence.
- Coordinator of the interuniversity doctorate program "Electroquímica. Ciencia y Tecnología", with Mention of Excellence (from 2011).
- Collaboration with the research groups of Prof. Dr. Richard G. Compton of the University of Oxford (United Kingdom), Prof. David Schiffrin of the University of Liverpool (United Kingdom), Prof. L. K. Bieniasz of the Polytechnic University of Cracovia (Poland) and Prof. Rajendran of the University of Kariapatti (India), Alan Bond (Monash University, Australia), among others.