

Part A. PERSONAL INFORMATION
CV date 31-12-2019

First and Family name	Vicente Montiel Leguey		
Social Security, Passport, ID number		Age	58
Researcher codes	WoS Researcher ID (*)	B-9360-2014	
	SCOPUS Author ID(*)	57195768814	
	Open Researcher and Contributor ID (ORCID) **	0000-0003-2353-2993	

(*) At least one of these is mandatory

(**) Mandatory

A.1. Current position

Name of University/Institution	University of Alicante		
Department	Physical Chemistry		
Address and Country	Apto. 99. 03080 Alicante, Spain		
Phone number	+34965903628	E-mail	Vicente.montiel@ua.es
Current position	Professor	From	2010
Key words	Electrochemistry, electrochemical engineering, electro dialysis, electrocoagulation, electrochemical synthesis, wastewater treatment by electrochemical methods, nanoparticles, fuel cells, redox batteries and accumulators, use of photovoltaic solar energy in electrochemical processes		

A.2. Education

PhD	University	Year
Degree in chemistry	University of Alicante	1984
PhD	University of Alicante	1986

A.3. JCR articles, h Index, thesis supervised...
Evaluation of research periods (CNEAI): 4 Last period: 01/01/2015
plus 1 (Knowledge Transfer and Innovation) Last period: 01/01/2019
Theses supervised in the last 10 years: 5
Total publications: 132 (Scopus) Citations: 3855 (Scopus)
Average number of citations during the last 5 years: 328 (Scopus)
Total publications in the first quartile (Q1): 90 (until 2019)
h index: 35 (Scopus) 38 (Google Académico)
Part B. CV SUMMARY (max. 3500 characters, including spaces)

Vicente Montiel Leguey was born in 1961. Currently he is Full Professor of Physical Chemistry at University of Alicante and the current Headmaster of the Institute of Electrochemistry at this University. His research is focused on electrochemical synthesis and electrochemical treatment of wastewater. It is important to highlight his experience in the development of electrochemical processes, from the laboratory scale to the pre-industrial pilot plant. There are several processes that have been carry out in the industry (production of 150 metric tons of N-acetylhomocysteine derivatives with pharmaceutical applications) or the development on a pilot scale at the University of Alicante (14 metric tons of S-Carboxymethyl Cysteine), that supports your experience in R & D. He was the promoter of the first spin-off that was born from the University of Alicante in this field (the company I.D. Electroquímica, S.L). It has transferred to the industry the know-how related to the design, optimization and production of an Electrocoagulation system (TREAC 1000), which allowed the creation of a company that commercialized these equipments. He also received the Award from the University of Alicante for the business project: "NANOSHAPES. Preparation of metal nanoparticles with controlled shape "in 2011. As regards his activities in the field of R & D management, it should be noted that, since 2011, he holds the position of director of the research group of "Electrochemistry and Electrocatalysis" of the University of Alicante. In addition, he was President of the Electrochemistry Group of the "Real Sociedad Española de



Química” from 2012 to 2016. And at this moment, he has been elected President of the Territorial Division of Chemistry at Alicante territory. Currently, his research is mainly focused on the Electrochemistry Applied (electrosynthesis; wastewater treatment by electrochemical methods without and with photovoltaic energy coupling; sensors and biosensors; making, characterization and use of nanoparticulate materials and the design and optimization of redox flow batteries). It should be noted that during his scientific career he has published 132 scientific articles in high impact indexed journals, 19 patents, 2 books and 30 book chapters and presented about 330 contributions to national and international meetings. On the other hand, he has participated or been responsible for more than 160 public and private research projects. He is also referee of the best international journals in his area. In addition to having conducted 15 PhD, he has been the general coordinator of the interuniversity doctoral program "Electrochemistry. Science and Technology "which has brought together 12 universities and has the mention of Excellence Quality. He is currently the coordinator of the interuniversity master's degree "Electrochemistry. Science and Technology" grouping 9 universities.

Part C. RELEVANT MERITS

C.1. Publications (including books)

- 1.- Sanjuán, I., Benavente, D., García-García, V., Expósito, E., Montiel, V. “Electrochemical softening of concentrates from an electrodialysis brackish water desalination plant: Efficiency enhancement using a three-dimensional cathode”. **Separation and Purification Technology**. 208, pp.217-226. **2019**. ISSN 1383-5866
- 2.- Del Castillo, A.;Alvarez-Guerra,M.; Solla-Gullon, J.; Saez, A.; Montiel, V.; Irabien, A. “Sn nanoparticles on gas diffusion electrodes: Synthesis, characterization and use for continuous CO₂ electroreduction to formate”. **Journal of CO₂ Utilization** 18, pp. 222-228. **2017**. ISSN 2212-9820
- 3.- Hernández-Ibáñez, N.; García-Cruz, L., Montiel, V.; Foster, C.W.; Banks, C.E.; Iniesta, J. “Electrochemical lactate biosensor based upon chitosan/carbon nanotubes modified screen-printed graphite electrodes for the determination of lactate in embryonic cell cultures”. **Biosensors & Bioelectronics**. 77, pp. 1168-74. **2016**. ISSN 0956-5663
- 4.- Albo, J., Sáez, A., Solla-Gullón, J., Montiel, V., Irabien, A. “Production of methanol from CO₂ electroreduction at Cu₂O and Cu₂O/ZnO-based electrodes in aqueous solution”. **Applied Catalysis B: Environmental**. 176-177. pp. 709-717. **2015**. ISSN 0926-3373
- 5.- Valero, D., García-García, V., Expósito, E., Aldaz, A., Montiel, V. “Application of electrodialysis for the treatment of almond industry wastewater”. **Journal of Membrane Science**. 476, pp. 580-589. **2015**. ISSN 0376-7388
- 6.- Valero, D; García-García, V; Expósito, E; Aldaz, A; Montiel, V. “Electrochemical treatment of wastewater from almond industry using DSA-type anodes: Direct connection to a PV generator”. **Separation and Purification Technology**. 123, pp. 15-22. **2014**. ISSN 1383-5866
- 7.- Sáez, A., García-García, V., Solla-Gullón, J., Aldaz, A., Montiel, V.; “Electrocatalytic hydrogenation of acetophenone using a Polymer Electrolyte Membrane Electrochemical Reactor”. **Electrochimica Acta**. 91, pp. 69-74. **2013**. ISSN 0013-4686
- 8.- García-Cruz, L., Iniesta, J., Thiemann, T., Montiel, V.; “Surprising electrooxidation of propargyl alcohol to (Z)-3-(2-propynoxy)-2- propenoic acid at a NiOOH electrode in alkaline medium”. **Electrochemistry Communications**. 22(1) pp. 200-202. **2012**. ISSN 1388-2481
- 9.- Sánchez-Sánchez, C. M.; Solla-Gullón, J.; Vidal-Iglesias, F.J.; Aldaz, A.; Montiel, V.; Herrero, E. “Imaging Structure Sensitive Catalysis on Different Shape-Controlled Platinum Nanoparticles”. **Journal of the American Chemical Society**. 132, pp. 5622 - 5624. **2010**. ISSN 0002-7863
- 10.- Valero, D., Ortiz, J.M., Expósito, E., Montiel, V., Aldaz, A.; “Electrochemical wastewater treatment directly powered by photovoltaic panels: Electrooxidation of a dye-containing wastewater”. **Environmental Science and Technology**. 44 (13), pp.5182-5187. **2010**. ISSN 0013-936X



C.2. Research projects and grants

- 1.- (CTQ2016-76231-C2-2-R). "Preparación y Caracterización de Materiales y Electrodo para Electroreducción de CO₂". Ministerio de Economía y Competitividad. I.P.: VICENTE MONTIEL LEGUEY. Universidad de Alicante. 30/12/2016-31/12/2019. 214.000 €. Coordinador Científico.
- 2.- (LIBERATE) (820735). "LIGNIN BIOREFINERY APPROACH USING ELECTROCHEMICAL FLOW". EUROPEAN COMMISSION. I.P. ROBERTO GÓMEZ TORREGROSA. Universidad de Alicante. 01/10/2018-30/09/2022. 604.872. Investigador.
- 3.- (CTQ2013-48280-C3-3-R). "Desarrollo de nuevos materiales catalíticos para la valorización electroquímica de CO₂". Ministerio de Economía y Competitividad. I.P.: VICENTE MONTIEL LEGUEY. Universidad de Alicante. 01/01/2014-29/12/2016. 217.000 €. Coordinador Científico.
- 4.- (CTQ2010-20347). "Síntesis orgánica electroquímica empleando electrodos nanoparticulados depositados sobre membranas de intercambio iónico (Conjunto Electrodo Membrana, CEM)". Ministerio de Ciencia e Innovación. I.P.: VICENTE MONTIEL LEGUEY. Universidad de Alicante. 01/01/2011-30/06/2014. 127.050 €. Coordinador Científico
- 5.- (PROMETEO/2009/045). "Electroquímica de superficies". Consellería de Educación Valenciana. I.P.: JUAN MIGUEL FELIU MARTINEZ. Universidad de Alicante. 01/01/2009-31/12/2016. 320.350 €. Investigador

C.3. Contracts

- 1.- "Proyecto de I+D SUN2HY". REPSOL. I.P. VICENTE MONTIEL LEGUEY. Universidad de Alicante. 01/05/2019-31/10/2020. 393.937,28 €
- 2.- "Asesoramiento y asistencia científico-técnica para la construcción de una planta industrial destinada a la obtención de DOTA desalinizado mediante electrodiálisis". Justesa Imagen S.A.U. VICENTE MONTIEL LEGUEY. Universidad de Alicante. 01/03/2018-01/04/2019. 72.600 €
- 3.- "Estudio y caracterización del funcionamiento de la batería Zn-Br₂". Jofemar. I.P. VICENTE MONTIEL LEGUEY. Universidad de Alicante. 18/12/2015-31/12/2016. 70.000 €
- 4.- "Investigación y desarrollo de un prototipo piloto para el acumulador semi-redox de hierro". Resenergie, S.L. I.P.: VICENTE MONTIEL LEGUEY. Universidad de Alicante. 09/11/2010-31/07/2014. 517.500 €
- 5.- "Estudio de viabilidad de la aplicación de la electrocoagulación al tratamiento de aguas residuales de distinta naturaleza y actividades complementarias". Gladepur, S.L., Essentium depuración, S.L. I.P.: VICENTE MONTIEL LEGUEY. Universidad de Alicante. 12/03/2008-11/03/2009. 90.000 €
- 6.- "Proyecto CENIT. DEIMOS: Desarrollo e innovación en pilas de combustible de membrana polimérica". Celaya, Emparanza y Galdós, S.A. (CEGASA), S.A. I.P.: VICENTE MONTIEL LEGUEY. Universidad de Alicante. 17/10/2006-16/010/2010. 330.000 €

C.4. Patents

- 1.- Sanjuán Moltó, I.; Montiel Leguey, V.; Solla Gullón, J.; Expósito Rodríguez, E. **ES2713374 (A1)** "Procedimiento para la reducción electroquímica de nitratos en agua mediante combinaciones de Bi y Sn". Spain. 21/12/2018. University of Alicante
- 2.- Aldaz Riera, A.; Montiel Leguey, V.; Sáez Fernández, A. **ES2552127 (A1)** and **WO2017017303 (A1)** "Acid-based electrochemical flow battery" Spain. 25/11/2015. International 02/02/2017. University of Alicante
- 3.- Hernández Ibáñez, N.; Iniesta Valcárcel, J.; Montiel Leguey, V.; Banks, C.E. **ES 2 534 151 A1** and **WO2016097431 (A1)**. "Method for producing an amperometric lactate biosensor, biosensor produced by means of said method, and use thereof in toxic complex media". Spain 17/04/2015. International 23/06/2016. University of Alicante
- 4.- Expósito Rodríguez, E.; García García, V.; Gallud Martínez, F.; Ortiz Díaz-Guerra, J.M.; Aldaz Riera, A.; Montiel Leguey, V. **ES2600387 (A1)** y **WO201681003 (A1)**. "Autonomous water treatment system". Spain 08/05/2015. International 17/11/2016. University of Alicante



5.- Genesca Francitorra, Roger; Montiel Leguey, Vicente; Aldaz Riera, Antonio; Expósito Rodríguez, Eduardo; García García, Vicente; Gallud Martínez, Francisco; Ortiz Díaz-Guerra, Juan Manuel. **ES 2 382 274 B1**. "Sistema de tratamiento de lixiviados mediante electrocoagulación" Spain. 12/04/2013. Gladepur, S.L.

6.- Montiel Leguey, V.; Iniesta Valcárcel, J.; García Cruz, L.; Thiemann, T. **ES2434034 (A1)** and **WO 201316779 (A1)**. "Stereoselective method for the electrochemical synthesis of 3-(2-Propinoxy)-2-Propenoic acid or mixtures of said acid and propargylic alcohol". Spain. 11/05/2012. International 14/11/2013 University of Alicante

C.5. Scientific Meetings

More than 330 contributions in international and national meetings

C.6. Experience in Organization of R + D + i activities

- Member of the Scientific and/or Organizing Committee at the XX, and at XXXIII-XL Meetings of Spanish Electrochemical Group.
- Member of the Scientific and Organizing Committee at the 2nd E3 Mediterranean Symposium: Electrochemistry for Environment and Energy
- Member of the Scientific Committee at the "10th European Symposium on Electrochemical Engineering"
- President of Scientific Committee at the Meeting "Nuevos retos de la Electroquímica (Evento satélite de la XXXIV Reunión Bienal de la Real Sociedad Española de Química)

C.7. Experience in R & D Management

- Director of the Technology and Knowledge Transfer Secretariat. Creation and consolidation of various programs and R & D plans at the University of Alicante
- President of the Specialized Electrochemical Group of the Spanish Royal Society of Chemistry (RSEQ) 2012-2016
- President of the Alicante territorial section of the RSEQ since 2017

C.8. OTHER MERITS RELATED TO RESEARCH

- Director of the research group of "Electrochemistry and Electrocatalysis" of the University of Alicante from 2011
- Headmaster of the Institute of Electrochemistry at University of Alicante from 2013
- Referee of the best international journals in the Electrochemistry area
- Member of the Committee of experts in the Commission for the evaluation of research projects (Spanish Program of Chemical Sciences and Technologies).

C.9. COORDINATION OF POST-GRADUATE PROGRAMS

- General coordinator of the interuniversity doctoral program "Electrochemistry. Science and Technology" which has brought together 12 universities and has the mention of Excellence Quality.
- Coordinator of the interuniversity master's degree "Electrochemistry. Science and Technology" grouping 9 universities (academic courses 2012/13, 13/14, 14/15, 15/16, 16/17, 17/18, 18/19, 19/20).

C.10. TRANSFER OF KNOWLEDGE TO THE PRODUCTIVE SECTOR:

- DEVELOPMENT OF PROCESSES IN PILOT-PLANT. Experience in the development of electrochemical processes, from the laboratory scale to the pre-industrial pilot plant. There are several processes that have been carry out in the industry (production of 150 metric tons of N-acetylhomocysteine derivatives with pharmaceutical applications) or the development on a pilot scale at the University of Alicante (14 metric tons of S-Carboxymethyl Cysteine), that supports your experience in R & D. Currently (2019) an electrodyalisis process has been transferred to a Spanish enterprise. The process is at TRL 8 level.
- CREATION OF SPIN-OFFS COMPANIES: Promoter of the first spin-off that was born from the University of Alicante in this field (the company I.D. Electroquímica, S.L) (1991).
- INNOVATION: Transfer to industry the know-how related to the design, optimization and production of an Electrocoagulation system (TREAC 1000), which allowed the creation of a company (ESSENTIUM Depuration S.L.) that commercialized these equipments (2007).