

Part A. Personal Information

DATE	05/03/2020
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Surname(s)	Antonio Jesús	
Forename	Fernández Romero	
Social Security, Passport, ID number		
Sex	Male	
Age	49	
Researcher codes	WoS Researcher ID (*)	AAA-8609-2019
	SCOPUS Author ID(*)	9534880200
	Open Researcher and Contributor ID (ORCID)	0000-0002-1873-2870

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	Assistant Professor	
UNESCO Code	2210 (Physical Chemistry) 2210.05 (Electrochemistry) 2210.20 (Molecular spectroscopy) 2210.90 (Physical Chemistry of Polymers) 2210.09 (Energy Transfer)	
Key Words	Electrochemistry of Conducting Polymers, Characterization of Conducting Polymers, Polymer Electrolytes for Batteries, New electrodes for Batteries, Zinc-based Batteries.	
Name of the University/Institution	Universidad Politécnica de Cartagena	
	Department/Centre	Ingeniería Química y Ambiental
	Full Address	Aulario II. Campus de Alfonso XIII, s/n. 30205. Cartagena
	Email Address	Antonioj.fernandez@upct.es
	Phone Number	+34 968325580
Start date	29/03/2001	

A.2. Education (*title, institution, date*)

Year	University	Degree	Title
1993	Universidad Córdoba	De First degree	Licenciado en Ciencias Químicas
		Masters (if appropriate)	
2000	Universidad Córdoba	De PhD	PhD en Ciencias Químicas

A.3. Indicators of Quality in Scientific Production (*See the instructions*)

<p>CNAI Sexenios: 3 (Last period granted in 2015) Theses supervised: 1) In the last 10 years: 2; 2) In progress: 1 Total cites: 382 (Source: Scopus) Average number of cites/year during the last 5 years (not including the current year): 31 Scientific Publications: 35 (21 in the first quartile (Q1)) h-Index: 13 Participations in Congresses: 43 Research Projects: 25 (6 as PI)</p>

Part B. Free Summary of CV (*Max. of 3.500 characters, including spaces*)

Born in Zuheros (Córdoba) in May 1970. He graduated in Chemical Sciences from the University of Córdoba in 1993. He got his PhD in Chemical Sciences in May 2000, from the

University of Cordoba. After a brief period in private companies, in March of 2001 he arrived to the Physical Chemistry Area of the Polytechnic University of Cartagena as Assistant Professor. He has been University Professor from 2001.

From the beginning, he works in the spectroscopic and electrochemical behavior of modified electrodes. At the University of Córdoba he focused his research on the modification of electrodes with bipyridines, deposited by SAM or Langmuir-Blodgett methods. During this period, he made several research stays at the Università degli studi di Firenze under the supervision of Rolando Guidelli. In the Polytechnic University of Cartagena his research was directed towards the study of the spectroscopic and electrochemical properties of the Conducting Polymer. Subsequently his research work has been directed towards the branch of accumulation of electric energy in batteries. He is currently involved in the development of new polymeric electrolytes for use in batteries, as well as in the preparation and characterization of electrodes used in Zinc-Air batteries.

Part C. Relevant accomplishments

C.1. Publications

1. Authors : F. Santos, A. Urbina, J. Abad, R. López, C. Toledo, A.J. Fernández Romero
Title: Environmental and economical assessment for a sustainable Zn/air battery
Ref. Chemosphere 250 (2020) 126273. DOI: 10.1016/j.chemosphere.2020.126273
2. Authors : F. Santos, J.P. Tafur, J. Abad, A.J. Fernández Romero
Title: Structural modifications and ionic transport of PVA-KOH hydrogels applied in Zn/Air batteries
Ref. J. Electroanal. Chem. 850 (2019) 113380 DOI: 10.1016/j.jelechem.2019.113380
3. Authors : A. Urbina, J. Abad, A.J. Fernández Romero, J. Sanchez-Lacasa, J. Colchero, J.F. González, J. Rubio-Zuazo, G. R. Castro, P. Gutfreund
Title: Neutron reflectometry and hard X-ray photoelectron spectroscopy study of the vertical segregation of PCBM in organic solar cells
Ref. Solar energy materials and solar cells 191 (2019) 62-70
4. Authors : F. Santos, J. Abad, M. Vila, G.R. Castro, A. Urbina, A. J. Fernández Romero
Title: In situ synchrotron x-ray diffraction study of Zn/Bi₂O₃ electrodes prior to and during discharge of Zn-air batteries: Influence on ZnO deposition
Ref. Electrochimica Acta 281 (2018) 133-141 DOI: 10.1016/j.electacta.2018.05.138
5. Authors : J. Abad, F. Santos, J. P. Tafur, A. Urbina, E. Román, J.F. González-Martínez, J. Rubio-Zuazo, G.R. Castro, A. J. Fernández Romero
Title: A synchrotron x-ray diffraction and hard x-ray photoelectron spectroscopy study of Zn negative electrodes at different charge and discharge states of Zn/MnO₂ batteries using an ionic liquid-based gel polymer electrolyte
Ref. Journal of Power Sources 363 (2017) 199-208. DOI: 10.1016/j.jpowsour.2017.07.082
6. Authors : Juan P. Tafur , F. Santos Antonio J. Fernández Romero,
Title: Influence of the Ionic Liquid Type on the Gel Polymer Electrolytes Properties
Ref. Membranes 2015, 5, 752-771 DOI:10.3390/membranes5040752
7. Authors : Juan P. Tafur, J. Abad, E. Román, Antonio J. Fernández Romero.
Title: Charge storage mechanism of MnO₂ cathodes in Zn/MnO₂ batteries using Ionic Liquid-based Gel Polymer Electrolytes
Ref. Electrochem. Commun. 60 (2015) 190-194 DOI: 10.1016/j.elecom.2015.09.011
8. Authors : Juan P. Tafur Guisao, Antonio J. Fernández Romero
Title: Interaction between Zn²⁺ cations and n-methyl-2-pyrrolidone in ionic liquid-based Gel Polymer Electrolytes for Zn batteries
Ref. Electrochim. Acta 176 (2015) 1447-1453 DOI: 10.1016/j.electacta.2015.07.132

9. Authors : J. Faxas-Guzmán, Antonio J. Fernández Romero, G. Roa-Escalante, Juan P. Tafur, A. Urbina
Title: Longer battery lifetime provided by a priority load control algorithm on stand-alone photovoltaic system
Ref. Journal of Renewable and Sustainable Energy 7 (1), 013110 DOI:10.1063/1.4906913
10. Authors : Juan P. Tafur, Antonio J. Fernández Romero,
Title: Electrical and spectroscopic characterization of PVdF-HFP and TFSI-ionic liquids-based gel polymer electrolyte membranes. Influence of ZnTf2 salt.
Ref. J. Membr. Sci. 469(2014)499-506 DOI: org/10.1016/j.memsci.2014.07.007
11. Authors : Artur J.M. Valente, José Javier López Cascales, Antonio J. Fernández Romero,
Title: Thermodynamic analysis of unimer-micelle and sphere-to-rod micellar transitions of aqueous solutions of sodium dodecylbenzenesulfonate..
Ref. J. Chem. Thermodyn. 77(2014)54-62 DOI: dx.doi.org/10.1016/j.jct.2014.05.001
12. Authors : Ricardo Paisal, Raúl Martínez, J. Padilla, A.J. Fernández Romero.
Title: Electrosynthesis and properties of the polypyrrole/dodecylbenzene sulfonate polymer. Influence of structural micellar changes of sodium dodecylbenzene sulfonate at high concentrations.
Ref. Electrochim. Acta 56, 6345 (2011) DOI: 10.1016/j.electacta.2011.05.024
13. Authors : S.D. Oliveira Costa, A.J. Fernández Romero and J.J. López Cascales.
Title: Physicochemical study of the acetonitrile insertion into polypyrrole film.
Ref. J. CHEMICAL PHYSICS 132, 144702 (2010)
14. Authors : P. Pérez Mañogil and A.J. Fernández Romero.
Title: Influence of the electrolyte cation and anion sizes on the redox process of PPy/PVS films in acetonitrile solution.
J Solid State Electrochem. 14, 841-849 (2010) DOI: 10.1007/s10008-009-0863-9
15. Authors : M. Cano, R. Rodríguez-Amaro and A.J. Fernández Romero.
Title: A New method based on the Butler-Volmer formalism to evaluate voltammetric cation and anion sensors.
Ref. J. Physical Chemistry B. 112, 15596-15603 (2008).
16. Authors : M. Cano, R. Rodríguez-Amaro and A.J. Fernández Romero.
Title: Use of Butler-Volmer treatment to asses the capability of the voltammetric ion sensors: Application to a PPy/DBS film for cations detection.
Ref. Electrochem Commun.10, 190-194 (2008)
17. Authors : F.J. Guillamón Frutos, T.F. Otero and A.J. Fernández Romero.
Title: Structural reorganization of the PPy/DBS films caused by the reduction branch of potentiodynamic polymerization.
Ref. Electrochimica Acta 52, 3621-3629 (2007)
18. Authors : J.J. López Cascales, T.F. Otero, A.J. Fernández Romero and L. Camacho.
Title: Phase transition of a DPPC bilayer induced by an external surface pressure: From bilayer to monolayer behavior. A Molecular Dynamics Simulation Study.
Ref. Langmuir 22(13), 5818 – 5824 (2006).
19. Authors : A.J. Fernández Romero, J.J. López Cascales, T.F. Otero.
Title: In situ FTIR Spectroscopy Study of Break-in Phenomenon Observed for PPy/PVS Films in Acetonitrile.
Ref. J. Physical Chemistry B. 109, 21078-21085 (2005)
20. Authors : A.J. Fernández Romero, J.J. López Cascales, T.F. Otero.
Title: Perchlorate interchange during the redox process of PPy/PVS films in acetonitrile medium. A Voltammetric and EDX study.

Ref. J. Physical Chemistry B. 109, 907-914 (2005)

C.2. Research Projects and Grants

1. Title: Equipo de espectroscopía de fotoelectrones producidos por Rayos-X y Ultravioleta (XPS-UPS) a temperatura variable (4 K-800 K) (Ref. EQC2019-006203-P)
MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES
605.590,00 € Date, from: 01/01/2019 until: 31/12/2020
IP: Antonio J. Fernández Romero

2. Title: Síntesis de Nuevos Electrodo basados en tintas de nanoestructuras de carbono mediante impresión automatizada. Aplicación como electrodos catalizadores de la reducción y/o evolución de oxígeno en baterías Metal/aire. (Ref. 20985/PI/18)
FUNDACIÓN SÉNECA DE LA REGIÓN DE MURCIA
63.000,00 € Date, from: 01/04/2019 until: 31/03/2022
IP: Antonio J. Fernández Romero

3. Title: Nano-GraPerOs_Desde el Laboratorio hasta la fábrica. Análisis de Ciclo de Vida.
MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD (Ref. ENE2016-79282-C5-5-R)
100.000,00 € Date, from: 1/01/2017 until: 31/12/2019
IP(1): A. Urbina Yeregui IP(2): Antonio J. Fernández Romero

4. Title: CELULAS SOLARES NANOESTRUCTURADAS PROCESABLES A PARTIR DE DISOLUCION : HACIA UNA MEJORA DE LA EFICIENCIA, LA ESTABILIDAD Y EL TAMAÑO-ANALISIS DE CICLO DE VIDA.
MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD (Ref. ENE2013-48816-C5-3-R)
60.000,00 € Date, from: 1/01/2014 until: 31/12/2016
IP(1): A. Urbina Yeregui IP(2): Antonio J. Fernández Romero

5. Title: TRANSFERENCIA ELECTRÓNICA E IÓNICA EN POLÍMEROS CONDUCTORES. APLICACIÓN A BATERÍAS DE INTERCAMBIO CATIONICO.
Fundación Séneca, 11955/PI/09
63.600 € Date, from : 1/01/2010 until: 31/12/2014
IP: Antonio J. Fernández Romero

C.3. Contracts

C.4. Patents and other IPR

C.5, C.6, C.7... Other

Reviewer of articles in International Journals (JCR):

Journal of Physical Chemistry B, Electrochimica Acta, Materials Chemistry and Physics, Sensor Letters, Sensors and Actuators A: Physical, Membranes, Energy & Fuels, Industrial & Engineering Chemistry Research, Ionics, Nature Communications, Journal of Membrane Science, Scientific Reports, Journal of Agricultural and Food Chemistry, etc.

Member of Scientific Societies:

Grupo de Electroquímica de la Real Sociedad Española de Química (GE.RSEQ).
Sociedad Iberoamericana de Electroquímica (SIBAE)

Member of the network of Excellence "Environmental and Energy Applications of the Electrochemical Technology" (CTQ2017-90659-REDT)

Supervision of 22 TFG and TFM

Instructions