

CV Date	03/06/2024
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## Part A. PERSONAL INFORMATION

First Name *	ANTONIO		
Family Name *	MORENO MUÑOZ		
Sex *	Not Specified	Date of Birth *	
ID number Social Security, Passport *		Phone Number *	
URL Web	http://www.uco.es/users/amoreno/		
Email Address	amoreno@uco.es		
Researcher's identification number	Open Researcher and Contributor ID (ORCID) *	0000-0002-7298-3902	
	Researcher ID	C-5819-2011	
	Scopus Author ID	9743221900	

\* Mandatory

### A.1. Current position

Job Title	Catedrático de Universidad		
Starting date	2016		
Institution	Universidad de Córdoba		
Department / Centre	Departamento de Ingeniería Electrónica y de Computadores / Escuela Politécnica Superior		
Country		Phone Number	
Keywords	Electric engineers, electronic and automatic (eil)		

### A.2. Previous positions

Period	Job Title / Name of Employer / Country
2006 - 2017	Director de Departamento / Universidad de Córdoba / Spain
2003 - 2016	Profesor Titular de Universidad / Universidad de Córdoba / Spain
2010 - 2015	Director del Master Universitario de Energías Renovables Distribuidas / Universidad de Córdoba / Spain
2007 - 2015	Consejero de la Agencia Provincial de la Energía de Córdoba / Diputación provincial de Cordoba
2005 - 2006	Director de Departamento / Universidad de Córdoba / Spain

### A.3. Education

Degree/Master/PhD	University / Country	Year
Doctorado en Automática e informática industrial	Universidad Nacional de Educación a Distancia	1998
Licenciado en Física. Especialidad en Automática	Universidad Nacional de Educación a Distancia	1992
Ingeniero Técnico Industrial Especialidad Electrónica	Universidad de Córdoba	1988

### A.4. General quality indicators of scientific production

- The number of six-years research periods recognized by the CNEAI: 4 (2000-2005, 2006-2011, 2012-2017, 2018-2023), "Knowledge Transfer and Innovation" (2000-2009). Year of the last one: 2023.
- Supervised theses: 11, In the last 5 years: 4.
- Theses registered in the last 5 years: 4.
- He has participated in 21 R&D projects and/or contracts, including the management of 10 of them. 6 in consortiums with companies.

- 1 Patent: 'Power Line Conditioning Circuit', Spanish Patent P, vol. 200700925.
- Publications in indexed journals: JCR -SCI (80), JCR -SSCI (6), SJR (16)
- Total publications in the first quartile Q1: 18
- Total publications in the second quartile Q2: 17
- Author/editor of 4 scientific monographs.
- Author of 6 publications in non-indexed journals.
- Author of 171 scientific contributions at IEEE International Conferences and Congresses.
- Verified Reviews: 46
- Total number of appointments received (No date filter): 4003
- Average appointments/years: during the last 5 years: 2151
- Average Citations Per Year: 80.4
- Average Citations Per Document: 8.9
- Index h (Web of Science): 21; Index h (Scopus): 23; Index i10(Google):102;

## Part B. CV SUMMARY

Antonio Moreno-Munoz is a full Professor at the Department of Electronics and Computer Engineering, Universidad de Córdoba, Spain where he is the Chair of the Industrial Electronics and Instrumentation R&D Group. He received his Ph.D. and M.Sc. degrees from UNED, Spain in 1998 and 1992, respectively. From 1981 to 1992 he was with RENFE maintenance service, the Spanish National Railways Company, where he received a scholarship for his university studies. Since 1992 he has been with the University of Cordoba, where he has been the director of its department, and academic director of the Master in Distributed Renewable Energies. His research focuses on Smart Cities, Smart Grids, Power Quality, Internet of energy. He has participated in 22 R&D projects and/or contracts and has more than 200 publications on these topics.

He is currently a Member of European Technology & Innovation Platforms (ETIP) Smart Networks for Energy Transition (SNET) WG-4. Member of the Flexible Grid-interactive Efficient Buildings to Enhance Electric Service Resilience (FlexGEB) TF. WG Member of the Spanish Railways Technological Platform (PTFE). Member of the Technical Committee on Smart Grids of the IEEE Industrial Electronics Society. He has been a member of WG Member of the IEEE P3001.9 Recommended Practice for the Lighting of Industrial and Commercial Facilities, and the CIGRÉ/CIREN JWG-C4.24 committee "Power Quality and EMC Issues associated with future electricity networks". He has been a member of the IEC/CENELEC TC-77/SC-77A/WG-9 committee. He has been a member of the ISO International Organization for Standardization AEN/CTN-208/SC-77-210.

He is an evaluator of R&D&I projects for the Estonian Research Council, the Fund for Scientific and Technological Research (FONCYT) of the National Agency for the Promotion of Science and Technology in Argentina, and the Directorate General of Research, Development, and Innovation of the Ministry of Science, Innovation, and Universities of Spain, the Kuwait Foundation for the Advancement of Sciences (KFAS), South Africa's National Research Foundation (NRF), and academic promotion at Qatar University. He is also an evaluator for European Quality Assurance (EQA) and DNV-GL.

Section Editor in Discover Cities (Springer Nature Science). Associate Editor in Elsevier's e-Prime journal, Section Board Member in Electronics journal MDPI. Section Editor in Chief in Smart Cities journal MDPI. Associate editor in Electronics journal MDPI. Editor in Intelligent Industrial Systems Journal (Springer Nature Science), Frontiers in Energy Research, Sustainable Energy Systems, and Policies. In addition to a guest editor and reviewer of numerous journals of IEEE, IET, MDPI, and Elsevier.

## Part C. RELEVANT ACCOMPLISHMENTS

### C.1. Publications

AC: corresponding author. (n° x / n° y): position / total authors. If applicable, indicate the number of citations

- 1 **Scientific paper.** Santiago, I.; Moreno-Munoz, A.; Quintero-Jiménez, P.; Garcia-Torres, F.; Gonzalez-Redondo, M.J.2021. Electricity demand during pandemic times: The case of the COVID-19 in Spain. Energy Policy. Elsevier. 148. ISSN 03014215.
- 2 **Scientific paper.** Linan-reyes, M.; Garrido-zafra, J.; Gil-de-castro, A.; Moreno-munoz, A.2021. Energy management expert assistant, a new concept. Sensors. 21-17.
- 3 **Scientific paper.** Moreno-Munoz, A.2021. Inequality built into the grid. Nature Energy. 6-9, pp.852-853. ISSN 2058-7546.
- 4 **Scientific paper.** Garcia-Torres, Felix; Bordons, Carlos; Tobajas, Javier; Marquez, Juan Jose; Garrido-Zafra, Joaquin; Moreno-Munoz, Antonio. 2020. Optimal Schedule for Networked Microgrids under Deregulated Power Market Environment using Model Predictive Control. IEEE Transactions on Smart Grid. Institute of Electrical and Electronics Engineers (IEEE). 12-1, pp.182-191. ISSN 1949-3053.
- 5 **Scientific paper.** 2024. Fast FPGA Prototyping to Explore and Compare New SPWM Strategies. IEEE Transactions on Circuits and Systems I: Regular Papers. IEEE.
- 6 **Scientific paper.** Savariego, Rafael; Moreno-Munoz, Antonio; Abascal-Castaneda, Isabel M.; et al; Loureiro, David. 2023. Integration of CCHP microgrids in NZEB with critical loads under high PQR requirements, a position paper. Energy Reports. 9, pp.403-409. ISSN 2352-4847.
- 7 **Scientific paper.** Morales-Leal, Tomás; Moreno-Munoz, Antonio; Ortiz-López, Manuel Agustín; Geninatti, Sergio R.; Quiles-Latorre, Francisco Javier. 2023. New Random PWM Method at Constant Switching Frequency and Maximum Harmonic Reduction Created With a Flexible FPGA-Based Test Bench. IEEE Access. 11, pp.19385-19394.
- 8 **Scientific paper.** Garrido-Zafra, Joaquin; Gil de Castro, Aurora del Rocio; Savariego Fernandez, Rafael; Linan Reyes, Matias; Garcia, Felix; Moreno-Munoz, Antonio. 2022. IoT cloud-based Power Quality extended functionality for Grid-Interactive Appliance Controllers. IEEE Transactions on Industry Applications. pp.1-1.
- 9 **Scientific paper.** Palacios-Garcia, E.J.; Moreno-Munoz, A.; Santiago, I.; Flores-Arias, J.M.; Bellido-Outeirino, F.J.; Moreno-Garcia, I.M.2018. A stochastic modelling and simulation approach to heating and cooling electricity consumption in the residential sector. Energy. 144. ISSN 03605442.
- 10 **Scientific paper.** Palacios-García, E J; Moreno-Munoz, A; Santiago, I; Flores-Arias, J M; Bellido-Outeirino, F J; Moreno-Garcia, I M. 2018. Modeling human activity in Spain for different economic sectors: The potential link between occupancy and energy usage. Journal of Cleaner Production. Elsevier. ISSN 0959-6526.
- 11 **Scientific paper.** Milanés-Montero, M.I.; Barrero-Gonzalez, F.; Pando-Acedo, J.; Gonzalez-Romera, E.; Romero-Cadaval, E.; Moreno-Munoz, A.2018. Smart Community Electric Energy Micro-Storage Systems with Active Functions. IEEE Transactions on Industry Applications. ISSN 00939994.
- 12 **Scientific paper.** Moreno-Garcia, I.M.; Moreno-Munoz, A.; Pallares-Lopez, V.; Gonzalez-Redondo, M.J.; Palacios-Garcia, Emilio J.; Moreno-Moreno, Carlos D.2017. Development and application of a smart grid test bench. Journal of Cleaner Production. 162-Supplement C, pp.45-60. ISSN 0959-6526.

### C.3. Research projects and contracts

- 1 **Project.** PID2022-141100OB-C22, IoT-baSEd mAnagement of bidirectional Wireless power trAnsfer for eLEctric vehicLes (SEAWALL)-IoT-based power quality Data AnaLYtics (TIDAL). MICINN-PLAN ESTATAL 2021-2023 DE INVESTIGACION CIENTIFICA, TECNICA Y DE INNOVACION. Proyectos Generación del Conocimiento 2022. Proyectos de investigación orientada, TIPO B. (Universidad de Córdoba). 01/09/2023-31/08/2026. 75.000 €. Principal investigador.

- 2 Project.** SOE3/P3/E0901, Integration of combined cooling, heating and power microgrids in zero-energy public buildings under high power quality and continuity of service requirements (IMPROVEMENT). INTERREG SUDOE. Antonio Moreno Muñoz. (Centro Nacional de Experimentación de Tecnologías de Hidrógeno y Pilas de Combustible). 01/10/2019-31/03/2023. 252.400 €.
- 3 Project.** Control y Gestión de Nanorredes Aislables Sistema de Gestión de Electrodomésticos Inteligentes (COMING-SAM). Ministerio de Economía, Industria y Competitividad. Antonio Moreno Muñoz. (Universidad de Córdoba). 30/12/2016-29/12/2019. 93.775 €.
- 4 Project.** TEC-2013-47316-C3, Sistema de Gestión Energética de una Comunidad Inteligente (SCEMS). Ministerio de Economía y Competitividad. Antonio Moreno Muñoz. (Universidad de Córdoba). 01/01/2014-30/06/2017. Co-ordinator.
- 5 Project.** 12013112 G-GI3002/IDIF, Integración de Tecnologías para Telegestión de los Sistemas de Iluminación Pública (IT2SIP). Agencia de Obra Pública de la Junta de Andalucía. FRANCISCO JOSÉ BELLIDO OUTEIRIÑO. (Universidad de Córdoba). 01/10/2013-30/06/2015. 373.107,62 €.
- 6 Project.** ITC-20131005, Sistema inteligente de producción, almacenamiento y gestión de energía fotovoltaica on-time PV-ONTIME. CDTI. FEDER ININTERCONECTA 2013.. Isabel Santiago Chiquero. (MAGTEL INVESTIGACION DESARROLLO E INNOVACION SL). 01/08/2013-31/01/2015.
- 7 Project.** EXP 00063456 / ITC-20131002, Total Integrated GRid Intelligent System (TIGRIS). CDTI. FEDER ININTERCONECTA 2013.. (TELVENT ENERGÍA S.A.). 01/08/2013-31/01/2015. 151.416,98 €.
- 8 Project.** TEC2010-19242-C03-02, Inversor inteligente para fuentes de energía distribuida: Seguridad, protección y comunicaciones (SIDER-PROCOM). Ministerio de Ciencia e Innovación. ANTONIO MORENO MUÑOZ. (Universidad de Córdoba). 01/01/2011-31/12/2013. 39.325 €. Co-ordinator.
- 9 Project.** TSI-020100-2010-484, Técnicas Avanzadas para Sistemas Activos, TASA. Ministerio de Industria, Turismo y Comercio. ANTONIO MORENO MUÑOZ. (TELVENT ENERGÍA S.A.). 01/01/2011-31/12/2012. 50.016 €. Co-ordinator.
- 10 Project.** TSI-020100-2008-258, Sistemas empotrados para infraestructuras críticas(SEPIC). Ministerio de Industria, Turismo y Comercio. ANTONIO MORENO MUÑOZ. (TELVENT ENERGÍA S.A.). 29/09/2008-28/02/2009. 79.800 €. Co-ordinator.
- 11 Project.** FIT330100-2005-179, Infraestructuras avanzadas DA/DSM para una gestión eficiente de Redes de distribución eléctrica AVANDIS. Ministerio de Ciencia e Innovación PROFIT. ANTONIO MORENO MUÑOZ. (TELVENT ENERGÍA S.A.). 01/01/2005-31/12/2006. 95.336 €. Co-ordinator.
- 12 Contract.** Málaga Smart City: Implementación de un mostrador de tecnologías ANTONIO MORENO MUÑOZ. (Endesa Distribución Eléctrica, S.L.). 16/03/2009-15/08/2010. 93.171,2 €.

#### **C.4. Activities of technology / knowledge transfer and results exploitation**

- 1 Patent of invention.** ANTONIO MORENO MUÑOZ. EP4336691A1. IoT platform for diagnosis and management of power quality in microgrids Spain. 13/03/2024. Universidad de Córdoba.
- 2 Patent of invention.** ANTONIO MORENO MUÑOZ. P200700925. Circuito acondicionador de línea de potencia Spain. 22/06/2010. Universidad de Córdoba.