



CURRICULUM VITAE (CVA)

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| CV date | 18/07/2023 |
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Part A. PERSONAL INFORMATION

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|--|-------------|---------------------|--|--------|---|
| First name | José Manuel | Family name | Andújar Márquez | Gender | Male |
| Birth date | | e-mail | andujar@uhu.es | Web: | https://citesuhu.com/ |
| Open Research and Contributor ID (ORCID) | | 0000-0002-0631-0021 | | | |

A.1. Current position

| | | | |
|-------------|---|--------------|---|
| Position | Full professor | Initial date | 27/09/2010 |
| Institution | University of Huelva | Dept./Center | Electronics, computer and automatic /ETSI |
| Country | Spain | | |
| Key words | Control engineering, renewable energies, hydrogen technologies, energy rehabilitation; engineering education, precision farming | | |

A.2. Previous positions

| Period | Position/Institution/Country/Interruption cause |
|-----------------------|--|
| 01/11/1987-30/09/1988 | University School Assistant/ University of Seville/Spain |
| 01/10/1988-27/06/1991 | Interim Professor of University School/University of Seville/Spain |
| 28/06/1991-07/09/1993 | Professor of University School/University of Seville/Spain |
| 08/09/1993-14/05/2003 | Professor of University School/University of Huelva/Spain |
| 15/05/2003-18/10/2010 | Tenured professor/University of Huelva/Spain |

A.3. Education

| PhD, Licensed, Graduate | University/Country | Year |
|-------------------------------|-----------------------------|------|
| Industrial Technical Engineer | University of Seville/Spain | 1984 |
| Degree in Physical Sciences | UNED/Spain | 1998 |
| Ph.D. Engineer | University of Huelva/Spain | 2000 |

Part B. CV SUMMARY

As for his scientific contributions, he has **≥ 480** publications including articles, books, book chapters, conference contributions and patents. Of these, **≥ 155** articles in journals indexed in the ISI JCR, with **≥ 73** publications in the first quartile (Q1). More than half of these articles (**39**) are in journals that are among the **top 10** in their category (first decile) and several are **No. 1**. With respect to his h-indexes, these are: SCOPUS **≥ 34**, ResearchGate **≥ 40** and Google Scholar **≥ 44**. The Interest in his publications is reflected in the number of citations (**≥ 4.000**, source SCOPUS) and readings (**≥ 187.000**, source ResearchGate). Finally, **Stanford University** has evaluated his research by placing him in the **98th** percentile of the ranking (2021 and 2022) of the **best researchers in the world** in the field of energy. As soon as he obtained his PhD degree, he created, in 2001, the research group "Control and Robotics". At that time, he was the only doctor, now the group consists of **14** doctors, of which he has supervised the doctoral thesis of 12 of them. For the last 10 years, the research group has been recognized as a group of excellence, with code TEP192, in the Andalusian Plan for Research, Development and Innovation. Thanks to external funds raised in projects and contracts, more than **9 M€**, the research group has **8** specialized laboratories, as well as numerous facilities, where researchers, doctoral students and technicians (nine hired on the basis of projects and contracts) work. He has supervised **15** doctoral theses with **9** awards. Most of the postdocs have positions in the University and others in companies and organizations. In 2002, he organized and directed the first PhD program in electronics, automation and computer science at the University of Huelva. Since then and to this day, he has been organizing and directing several other doctoral programs, as well as postgraduate programs (masters). He was also, since its creation and for **20 years** (1993-2013), **Head** of the Department of Electronic Engineering, Computer Systems and Automatics at the University of Huelva. Currently, he is **Director** of the Research Center

for Technology, Energy and Sustainability (CITES) at the University of Huelva, as well as the **Director** of the Master Degree in Remote Piloted Aerial Systems (RPAS) at the University of Huelva.

He has participated in \geq **80** competitive research projects and with companies, being the main researcher in most of them. He holds **17** patents, most of them international (PCT, extended to 183 countries). In order to, among other things, commercially exploit these patents, he created in 2008 the technology-based company, spin-off of the University of Huelva, Onurobotics S. L., of which he was its Director. He has also been editor of **5** journals included in the ISI JCR, as well as an evaluator of research projects in competitive calls, with **243** projects evaluated since 2007.

He is currently **President** of the Spanish Committee of Automatics (CEA), one of the most important scientific and technological societies in Spain. He has also been **National Coordinator** of the Intelligent Control Thematic Group of CEA. He is currently **National Coordinator of the Spanish Hydrogen Technology Platform** (PTEHPC), and member of its Steering Committee; member of the **Committee of Experts** for the elaboration of the Andalusian Energy Strategy and of the **Committee of Experts** for the design of the Smart Specialization Strategy for the Sustainability of Andalusia (S4Andalusia). In addition to his teaching and research facet, he is a constant popularizer of science and engineering, with more than **250** interviews and interventions in the media.

Finally, as a reflex of all the work done throughout his professional career, he has received **35** academic awards and distinctions.

Part C. RELEVANT MERITS

C.1. Publications (F. I., Impact factor; pos., position)

- 1) F. Segura, F. J. Vivas, J. M. Andújar, M. Martínez (2023). [Hydrogen-powered refrigeration system for environmentally friendly transport and delivery in the food supply chain](#). *Applied Energy*, **F. I. 11.2**, pos. 9/140. **Q1**.
- 2) M. Noguera, B. Millán, J. M. Andújar (2023). [New, Low-Cost, Hand-Held Multispectral Device for In-Field Fruit-Ripening Assessment](#). *Agriculture*, **F. I. 3.6**, pos. 16/121. **Q1**.
- 3) M. Videras, S. Gómez, J. M. Andújar (2022). [Assessment of aerial thermography as a method of in situ measurement of radiant heat transfer in urban public spaces](#). *Sustainable Cities and Society*, **F. I. 11.7**, pos. 1/68. **Q1**.
- 4) F. J. Vivas, F. Segura, J. M. Andújar (2022). [Fuzzy Logic-based Energy Management System for Grid-Connected Residential DC Microgrids with multi-stack fuel cell systems: A multi-objective approach](#). *Sustainable Energy Grids & Networks*, **F. I. 11.7**, pos. 61/275. **Q1**.
- 5) J. J. Caparrós, F. Segura, J. M. Andújar, E. López, F. Isorna (2022). [Sun, Heat and Electricity. A comprehensive study of non-pollutant alternatives to produce green hydrogen](#). *International Journal of Energy Research*, **F. I. 4.6**, pos. 1/34. **Q1**.
- 6) J. M. Andújar, F. J. Vivas, F. Segura, A. J. Calderón (2022). [Integration of air-cooled multi-stack polymer electrolyte fuel cell systems into renewable microgrids](#). *International Journal of Electrical Power & Energy Systems*, **F. I. 5.2**, pos. 53/349. **Q1**.
- 7) Noguera, M.; Millan, B.; Aquino, A.; Andújar, J.M (2022). [Methodology for Olive Fruit Quality Assessment by Means of a Low-Cost Multispectral Device](#). *Agronomy*, **F. I. 3.7**, pos. 16/88. **Q1**.
- 8) F. J. Vivas, F. Segura, J. M. Andújar, A. J. Calderón, F. Isorna (2022). [Battery-based storage systems in high voltage-DC bus microgrids. A real-time charging algorithm to improve the microgrid performance](#). *Journal of Energy Storage*, **F. I. 9.4**, pos. 19/115. **Q1**.
- 9) J. J. Caparrós, J. L. Sáenz, E. López, J. M. Andújar, F. Segura, F. J. Vivas, F. Isorna (2022). [Experimental analysis of the effects of supercapacitor banks in a renewable DC microgrid](#). *Applied Energy*, **F. I. 11.2**, pos. 9/140. **Q1**.
- 10) J. M. Ponce, A. Aquino, D. Tejada, B. M. Al-Hadithi, J. M. Andújar (2022). [A Methodology for the Automated Delineation of Crop Tree Crowns from UAV-based Aerial Imagery by means of Morphological Image Analysis](#). *Agronomy*, **F. I. 3.7**, pos. 16/88. **Q1**.
- 11) R. Sánchez-Herrera, J. M. Andújar, M. A. Márquez, A. Mejías, G. Gómez-Ruiz (2021). [Self-tuning PLL. A new, easy, fast and highly efficient phase-locked loop algorithm](#). *IEEE Transactions on energy conversion*, **F. I. 4.877**, pos. 65/276. **Q1**.

- 12) M. Noguera, A. Aquino, J. M. Ponce, A. Cordeiro, J. Silvestre, R. Calderón, M. da E. Marcelo, P. Jordão, J. M. Andújar (2021). [Nutritional status assessment of olive crops by means of the analysis and modelling of multispectral images taken with UAVs](#). *Biosystems Engineering*, F. I. 5.002, pos. 8/59. Q1.
- 13) M. Larrea, A. Porto, E. Irigoyen, A. J. Barragán, J. M. Andújar (2021). [Extreme Learning Machine Ensemble model for Time Series forecasting boosted by PSO: Application to an Electric Consumption problem](#). *Neurocomputing*, F. I. 5.779, pos. 39/144. Q1.
- 14) Vivas F.J., Segura F., Andújar J.M., Caparrós J.J. (2020). [A suitable state-space model for renewable source-based microgrids with hydrogen as backup for the design of energy management systems](#). *Energy conversion and management*, F. I. 9.709, pos. 2/62. Q1.

C.2. Publications in books and conferences are intentionally omitted in order to include other contributions considered more important.

C.3. Research projects (all have been awarded)

1) Title: National Automatics Network (RED2022-134223-T).

Main researcher: José Manuel Andújar.

Funding Body: Ministry of Science and Innovation, National R&D&I Plan. Funding: 16,300 €. Project duration: 01/08/2023 – 31/12/2024.

2) Title: Integration and Control of a hydrogen-based pilot plant in residential applications for energy supply (PID2020-116616RB-C31).

Main researchers: José Manuel Andújar & Francisca Segura.

Funding Body: Ministry of Science and Innovation, National R&D&I Plan. Funding: 185,940.7 €. Project duration: 01/09/2021 – 31/08/2024.

3) Title: Smartgrid with reconfigurable Architecture for testing control Techniques and Energy Storage priority (P20_00730).

Main researchers: José Manuel Andújar & Francisca Segura.

Funding Body: Junta de Andalucía, Call for Excellence Projects. Funding: 121,363 €. Project duration: 01/09/2021 – 28/02/2024.

4) Title: REmote labORatories for Practical Experiments on renewable energies at EU uNiversities – RE_OPEN (2020-1-IT02-KA226-HE-095424).

Participating institutions: University of Huelva (Spain), Fachhochschule Technikum Wien (Austria), Cork Institute of Technology (Ireland), Norges Teknisk-Naturvitenskapelige Universitet NTNU, VJ Technology S.R.L. (Italy).

Main researcher (University of Huelva): José Manuel Andújar.

Funding Body: European Union. Funding: 284,420 €. Project duration: 01/04/2021 – 31/03/2023.

5) Title: Smart techniques for olive characterization using artificial vision and sensing – TicOliVAs (PY18-4539).

Main researchers: José Manuel Andújar & Arturo Aquino (as emerging researcher).

Funding Body: Regional Ministry of Economy and Knowledge - Junta de Andalucía. Funding: 174,900 €. Project duration: 01/12/2020 – 31/11/2023.

6) Title: Sustainable Urban Electric Tourist Transport (1832_T²UES_6_E).

Participating institutions: University of Huelva (Spain), University of Seville (Spain), INTA (Spain), Passion Motorbike Factory S.L. (Spain), University of Algarve (Portugal), Agilia Center S. L. (Spain), Algarve Regional Energy and Environment Agency (Portugal), Galician Technological Institute Foundation (Spain), Andalusian Energy Agency (Spain).

Coordinator: José Manuel Andújar.

Funding Body: European Union, EP - INTERREG V A (POCTEP) Program. Funding: 284,420 €. Project duration: 01/01/2019 – 31/12/2021.

7) Title: State-of-the-art laser and hyperspectral remote sensing, both airborne and ground-based (EQC2019-006195-P).

Main researcher: José Manuel Andújar.

Funding Body: Ministry of Science, Innovation and Universities. Funding: 1,173,639.15 €. Project duration: 01/11/2019 – 30/06/2020.

8) Title: Configuration and management of a smart renewable microgrid hybridized with hydrogen technologies (DPI2017-85540-R).

Main researcher: José Manuel Andújar.

Funding Body: Ministry of Science and Innovation, National R&D&I Plan. Funding: 193,600 €. Project duration: 01/01/2018 – 31/12/2020.

9) Title: Improvement of new hydrogen technology profiles required for the next "green" energy model of the European Union – Hy2Green (2017-1-ES01-KA203-038302).

Participating institutions: University of Huelva (Spain), Ariema Energía y Medioambiente S. L. (Spain), Technische Universitaet Berlin (Germany), Mahytec SARL (France), UNED (Spain), Università degli studi Guglielmo Marconi – Telematica (Italy), Inoma Renovables S. L. (Spain), University of Cyprus (Cyprus).

Coordinator: José Manuel Andújar.

Funding Body: European Union. Funding: 206,651 €. Project duration: 01/09/2017 – 31/08/2020.

C.4. Technology/knowledge transfer activities and exploitation of results.

1) Title: Design, development and construction of 2 x 1 kW fuel cell stacks(contract 68/83). Main researcher: J. M. Andújar Márquez. Funding Entity: Protius S. L. Contract amount: 72,000 €. Date: July 2023-Feb 2024.

2) Title: Development of the HYMET Missions project: Automation, power electronics and support for testing and analysis of results (contract 68/83). Main researcher: J. M. Andújar Márquez. Funding Entity: ARIEMA Energía y Medioambiente S. L. Contract amount: 59,435.35 €. Date: May 2022-June 2024.

3) Title: Development of the Ocean H2 Missions project: Automation, power electronics and support for testing and analysis of results (contract 68/83). Main researcher: J. M. Andújar Márquez. Funding Entity: ARIEMA Energía y Medioambiente S. L. Contract amount: 72,575.80 €. Date: Jan 2022-Dec 2024.

4) Title: Use of LNG for the development of a deep-freezing warehouse and cold chain management through the use of hydrogen fuel cells (contract 68/83). Main researcher: J. M. Andújar Márquez. Funding Entity: Enagas S. A. Contract amount: 66,550 €. Date: Jan 2022 - Dec 2023.

5) Title: Master plan for energy efficiency, renewable energy generation and optimization of the thermal envelope of the project and execution of construction work (contract 68/83). Main researcher: J. M. Andújar Márquez. Funding Entity: Otium Home S. L. Contract amount: 71,176.47 €. Date: July 2018 - Dec 2020.

6) Inventors: Andújar J. Manuel, Ponce Juan M., Aquino A., Millán, B. Title: [System and procedure for automatic size and mass estimation of olives](#) (patent). Granted patent. Publication number: ES2785276. Companies currently exploiting it: Nebulous Systems S. L.

7) Inventors: Sánchez M. R., Mejías A., Márquez A., De la Torre, L., Andújar J. Manuel. Title: [System for access to secure data networks](#) (patent). Granted patent. Publication number: ES1263334. Companies currently exploiting it: Nebulous Systems S. L.

8) Inventors: Andújar J. Manuel, Martínez, M. A., Serrano A., Del Pino J., Ruiz D., Tejada D. Title: [Vertical axis wind turbine system and blades for this system](#) (patent). Granted patent. Publication number: ES2803823. Companies currently exploiting it: Nebulous Systems S. L.

9) Inventors: Márquez M. A., Mejías A., Sánchez M. R., Andújar J. Manuel. Title: [Single-phase inverter with programmable output adapted to its application and independent of its input](#) (patent). Granted patent. Publication number: ES1243640 Y. Companies currently exploiting it: Nebulous Systems S. L.

10) Inventors: Segura F., Andújar J. Manuel, Vivas, F. J., De las Heras A. Title: [System for monitoring and controlling fuel cells](#) (patent). Granted patent. PCT World patent: PCT/ES2018/070748. Companies currently exploiting it: Nebulous Systems S. L.

11) Inventors: Enrique J. M., Andújar J. M. Title: [Photovoltaic generator modelling method and maximum power point tracker of a photovoltaic generator](#) (patent). Granted patent. PCT World patent: PCT/ES2016/070166. Companies currently exploiting it: Nebulous Systems S. L.