

Part A. Personal Information

DATE	28/05/2019
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Surname(s)	PINO LUCENA	
Forename	FRANCISCO JAVIER	
Social Security, Passport, ID number	52268888-P	
Sex	MALE	
Age	39	
Researcher codes	WoS Researcher ID (*)	K-2217-2014
	SCOPUS Author ID(*)	
	Open Researcher and Contributor ID (ORCID)	0000-0003-3897-3791

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	ASSISTANT PROFESSOR	
UNESCO Code	2210.09	
Key Words	Hydrogen technology, microgrids, solar energy, energy storage, fuel cells, simulation	
Name of the University/Institution	UNIVERSITY OF SEVILLE	
	Department/Centre	ENERGY ENGINEERING
	Full Address	ETSI, CAMINO DE LOS DESCUBRIMIENTOS S/N
	Email Address	fjp@us.es
	Phone Number	+34 616795876
Start date	16/11/2018	

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

Year	University	Degree	Title
2004	SEVILLE	First degree	MECHANICAL ENGINEERING
2008	SEVILLE	Masters (if appropriate)	THERMAL ENERGY SYSTEMS
2010	SEVILLE	PhD	MECHANICAL ENGINEERING

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

Total number of citations: **344**
Average number of citations during the last five years: **49**
Total number of publications: **19**. First quartile **13**, first decile **6**
h-index: **11**
Thesis supervised: **1**
Research merits conceded: **2** (last in 2017)

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

The research is participating in four research lines:

- First, the integration of renewable energies in local networks through the development and design of microgrids, involving energy storage systems, such as hydrogen technology. Seven projects have been carried out, five of them were approved in public calls: the Sudoe program (Europe), the Ministry of Science and Innovation (national) and the Ministry of Innovation, Science and Business (Junta de Andalucía). The researcher has focused on the particularities of the integration of wind energy with hydrogen (the theme of his Thesis). The investigation allowed the participation of the researcher in the working group of experts of the Hydrogen Implementing Agreement of the International Energy Agency. Energy (task 24). From the work

carried out, the need to improve the simulation tools and the models of the current components was detected, since as a result of working with experimental data, all the simulations determined oversized equipment when compared with the reality of the systems, affecting the economic cost of the plants. Finally, the applicant has also obtained a European award, within the Sudoe program, for the best idea for the integration of hydrogen in the electrical system.

- On the other hand, also in the field of hydrogen technology, the applicant has also worked on the development of proton exchange fuel cell components (PEMFC), focusing the work on the analysis and improvement of simulation tools based on dynamic fluid computational (CFD) so that the simulation results are adapted to the actual behavior of fuel cells. The objective is to obtain a simulation tool to detect improvements in the design of fuel cells without the need for experimental studies due to the high cost of the components.

- Another line of outstanding research is solar thermal energy, where the applicant is coordinator of the University of Seville in a project of the H2020 on the integration of solar energy in the industrial sector. In addition, he has participated in several pioneering projects worldwide focused on solar cooling using a Fresnel concentration solar collector. The work developed has been reflected in the scientific production with several articles published (one of them with more than 70 citations in total).

- Finally, work is beginning on a line of research aimed at analyzing the behavior of HVAC systems in electric vehicles hybridized with hydrogen fuel cells. Within this line the researcher has participated in a research contract with the company HISPACOLD (in the INTERCONNECTA call) focused in the design and evaluation of an air conditioning system powered by electric compressors and thermal storage for electric buses.

Part C. Relevant accomplishments

C.1. Publications

Authors:	D. Parra, L. Valverde, F. J. Pino, M. K. Patel
Title:	A review on the role, cost and value of hydrogen energy systems for deep decarbonisation
Journal:	Renewable and Sustainable Energy Reviews 101 (2019), 279-294
Authors:	C. Suárez, F.J. Pino, F. Rosa, J. Guerra
Title:	Analytical approach to ground heat losses for high temperature thermal storage systems
Journal:	International Journal of Energy Research (2018) DOI: 10.1002/er.4278
Authors:	E. Tapia, A. Iranzo, F.J. Pino, F. Rosa, J.A. Salva
Title:	Methodology for thermal design of solar tubular reactors using CFD techniques
Journal:	International Journal of Hydrogen Energy 41 (2016), 19525-19538
Authors:	L. Valverde, F.J. Pino, J. Guerra, F. Rosa
Title:	Definition, analysis and experimental investigation of operation modes in hydrogen-renewable based power plants incorporating hybrid energy storage
Journal:	Energy Conversion and Management 113 (2016), 290-311
Authors:	C. Suárez, F.J. Pino, F. Rosa, J. Guerra
Title:	Heat loss from thermal energy storage ventilated tank foundations
Journal:	Solar Energy 122 (2015), 783-794
Authors:	F.J. Pino, D. Marcos, C. Bordons, F. Rosa
Title:	Car air-conditioning considerations on hydrogen consumption in fuel cell and driving limitations
Journal:	International Journal of Hydrogen Energy 40 (2015), 11696-11703
Authors:	C. Suárez, A. Iranzo, F.J. Pino, J. Guerra
Title:	Transient analysis of the cooling process of molten salt thermal storage tanks due to standby heat loss
Journal:	Applied Energy 142 (2015), 55-65

Authors:	D. Marcos, F.J. Pino, C. Bordons, J. Guerra
Title:	The development and validation of a thermal model for the cabin of a vehicle
Journal:	Applied Thermal Engineering 66 (2014), 646-656
Authors:	F.J. Pino, L. Valverde, F. Rosa
Title:	Influence of wind turbine power curve and electrolyzer operating temperature on hydrogen production in wind hydrogen systems
Journal:	Journal of Power Sources 196 (2011), 4418-4426
Authors:	P. Bermejo, F.J. Pino, F. Rosa
Title:	Solar absorption cooling plant in Seville
Journal:	Solar Energy 84 (2010), 1503-1512

C.2. Research Projects and Grants

Reference:	731287
Project:	Integrating national research agendas on Solar Heat of Industrial Processes (INSHIP)
Funding body/Call:	European Commission / H2020
Date start / end:	01/01/2017 – 31-12-2020
Amount of subsidy:	10.000 €
Principal Researcher:	Dr. Francisco Javier Pino Lucena
Reference:	DPI2016-78338-R
Project:	Control Predictivo de Microrredes Reconfigurables con Almacenamiento Híbrido y Móvil (CONFIGURA)
Funding body/Call:	Ministerio de Economía y Competitividad / Plan Estatal RETOS 2016
Date start / end:	30/12/2016 – 29/12/2019
Amount of subsidy:	180.000 €
Principal Researcher:	Dr. Carlos Bordons Alba / Dr. Miguel Ángel Ridao Carlini (US)
Reference:	0076-AGERAR-6-E
Project:	Almacenamiento y Gestión de Energías Renovables en Aplicaciones Comerciales y Residenciales (AGERAR)
Funding body/Call:	European Commission / Sudoe
Date start / end:	01/10/2016 – 30/09/2019
Amount of subsidy:	180.000 €
Principal Researcher:	Dr. Miguel Ángel Ridao Carlini (US)
Reference:	DPI2013-46912-C2-1-R
Project:	CONTROL PREDICTIVO DE SISTEMAS ENERGÉTICOS DISTRIBUIDOS CON FUENTES RENOVABLES Y ALMACENAMIENTO ESTACIONARIO Y MÓVIL (COOPERA)
Funding body/Call:	Ministerio de Economía y Competitividad / Plan estatal RETOS 2013
Date start / end:	01/01/2014 – 31/12/2016
Amount of subsidy:	146.410 €
Principal Researcher:	Dr. Carlos Bordons Alba (US)
Reference:	FP7-ENERGY-309028
Project:	BIOSTIRLING-4SKA: A cost effective and efficient approach for a new generation of solar dish-stirling plants based on storage and hybridization
Funding body/Call:	European Commission / 7th Framework programme.
Date start / end:	01/07/2013 – 01/07/2016
Amount of subsidy:	213,840 €
Principal Researcher:	Dr. Manuel Felipe Rosa Iglesias (US)
Reference:	SOE2/P2/E322
Project:	Sistemas inteligentes de optimización y autogestión de micro-redes con energías renovables aplicados a áreas industriales de la zona SUDOE (OPTIMAGRID)
Funding body/Call:	Fondos FEDER / Interreg Sudoe IV B

Date start / end: 01/01/2011 – 31/12/2012
Amount of subsidy: 100.000 €
Principal Researcher: Dr. Manuel Felipe Rosa Iglesias (US)

Reference: DPI2010-21589-C05-03
Project: Validación exp. de técnicas de control predictivo en la generación distribuida
Funding body/Call: Plan Nacional I+D. Ministerio de Ciencia y Tecnología
Date start / end: 01/01/2011 – 31/12/2013
Amount of subsidy: 71.390 €
Principal Researcher: Dr. Manuel Felipe Rosa Iglesias (US)

C.3. Contracts

Highlighting, transfer of technology has been carried out to private companies and public entities, with participation in 57 research projects, in which the knowledge and experiences of the research group has been transferred to the surrounding industrial fabric, and therefore to society. Principal contractors has been: Abengoa, Hispacold, Gamesa, Gas Natural and Andalusian Energy Agency.