Date of the CVA	13/10/2022

Section A. PERSONAL DATA

Name and Surname	PILAR GEMA RODRÍGUEZ ORTEGA		
DNI/		Age	
	ORCID ID	0000-0002-9705-4528	
	SCOPUS Author ID	57214236759	

A.1. Current professional situation

Institution	Universidad de Córdoba			
Dpt./ Centre	Didácticas Específicas / Facultad de Ciencias de la Educación			
Address	AVDA. SAN ALBERTO MAGNO, s/n, 14071, Córdoba			
Phone	957218982	Email	mrodriguez1@uco.es	
Professional category	Profesora Ayudante Doctora		Start date	08/02/2021

A.2. Academic education (Degrees, institutions, dates)

Bachelor/Master/PhD	University	Year
Licenciatura de Química	Universidad de Jaén	2008
Doctorado en Química	Universidad de Jaén	2013

A.3. General quality indicators of scientific production

Total citations: 97 (Scopus); **Citations for the last 5 years:** 63 (Scopus); **Q1 publications:** 12; ***h*-index:** 6 (Scopus)

Section B. SUMMARY

Pre-doctorate: I started it as an internal student in the Department of Physical and Analytical Chemistry of the University of Jaen (2007/2008) with a collaboration grant from the MEC. Between 01/01/09 and 10/19/10, I received a FPI grant from the UJA Research Support Plan. On 07/2010 I obtained a scholarship from the Spanish Ministry National Program FPU fellowship, which I enjoyed until 02/19/2013. In 2012, I did a 3-month stay at the Department of Chemistry at the University of Bath (U.K.), funded by the MEC (EST12/00136). On 07/2013 I obtained the degree of Doctor from the UJA (Apto cum laude; International mention). Post-doctorate: I start it through a contract from the UJA's Incentives for Excellence in R&D program (12/2014 to 09/2015). From 10/01/2015 to 10/01/2016 I join as a researcher at the European Center for Chirality (University of Antwerp) with a postdoctoral scholarship from the Ramón Areces Foundation. After my postdoctoral period, and then working for a period of 5 months in the R+D+i department at the multinational Valeo L. S., on 02/2017 I joined the University of Cordoba as PSI, a moment that represents a turning point in my teaching and research interests. On 09/2017, I joined the Department of Didactics of Sciences of the UJA as PSI, where I had the opportunity to start my research career in the field of Experimental Science Didactics. Currently I am part of the UCO teaching staff in the Department of Specific Didactics, specifically in Didactics of Experimental Sciences. Main research lines: 1. Didactic proposals for the consolidation of chemical-physical concepts in the Chemistry Grade curriculum; 2. Nature of Science of pre-service teachers and its influence on teaching views and practices; 3. Diagnose of attitudes (evaluations and perceptions) related to the various attitudinal objects related to science and science education; 4. Educational robotics as a pillar for STEM teaching in early childhood and primary education; 5. Theoretical-experimental study of the molecular and electronic structure and the vibrational spectra of moderate-size peptidomimetic gem-diols and their mechanisms of interaction with simple theoretical models of the active center of metalloenzymes (ACE, Thermolysin) and 6. Supramolecular and chiral molecular recognition by VCD and ROA spectroscopy; My scientific activity is summarized in: (1) co-authorship of 28 scientific articles published in indexed journals (12 in Q1 and 10 in Q2); (2) co-authorship of 42 communications (orals and posters) presented at national and international conferences; (3) co-direction of 3 TFM; (3) participation as collaborator in a project funded by the European Commission and coordinated by the Freiburg University of Education (Germany); (4) participation as collaborative researcher in a national R&D project (MICINN 2020); (5)

participation as a researcher in an regional R&D project; (6) participation as a researcher in 2 R&D contracts related to the preparation / design of teaching materials and the evaluation of open educational resources; (7) co-direction of a doctoral thesis (defense – first semester of 2022), (8) participation as a member of the local organizing committee of 3 scientific congresses/ meetings (national and international).

Section C. MOST RELEVANT MERITS

C.1. Publications

M. Romero Ariza, A. M. Abril Gallego, A. Quesada Armenteros, P. G. Rodríguez Ortega. 2022. *OER Interoperability educational design: enabling research-informed improvement of public repositories*. **Educación XXI**. (under review).

M. Bouza, B. Gilbert-López, J. F. García-Reyes, P. G. Rodríguez Ortega. 2021. *Measuring the mass of an electron: an undergraduate laboratory experiment with high resolution mass spectrometry*. **Chemistry Teacher International, DOI: 10.1515/cit-2021-0016.**

M. Sánchez Valera, R. Casas Jaraíces, M. Montejo, P. G. Rodríguez Ortega**.** 2021. *Vibrational Circular Dichroism study of chiral food additives: γ-valero- and γ-caprolactone.* **Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 247, 119140.**

E. M. Rosales Sánchez, P. G. Rodríguez Ortega, M. Romero Ariza, 2020. *Conocimiento, demanda cognitiva y contextos en la evaluación de la alfabetización científica en PISA.* **Revista Eureka Sobre Enseñanza Y Divulgación De Las Ciencias, 17(2), 2302.**

M. Romero Ariza, A. M. Abril Gallego, A. Quesada Armenteros, P. G. Rodríguez Ortega. 2020 *Multidimensional research on the impact of open educational resources.* **INTED2020 Proceedings, ISSN 2340-1079, 8886.**

P. G. Rodríguez Ortega, M. Montejo, M. S. Valera, J. J. López González. 2019. *Studying the Effect of Temperature on the Formation of Hydrogen Bond Dimers: A FTIR and Computational Chemistry Lab for Undergraduate Students*. **Journal of Chemical Education, 2019, 96, 8, 1760–1766.**

P. G. Rodríguez-Ortega, R. Casas, A. Marchal-Ingrain, B. Gilbert-López. 2019. *Synthesis and Structural Characterization of a Ubiquitous Transformation Product (BTS 40348) of Fungicide Prochloraz*. **Journal of Agricultural and Food Chemistry, 2019, 67, 31, 8641–8648.**

P. G. Rodríguez Ortega, R. Casas Jaraíces, M. Romero Ariza, M. Montejo. 2019. *Developing Students' Scientific Reasoning Abilities with an Inquiry-Based Learning Methodology: Applying FTIR Spectroscopy to the Study of Thermodynamic Equilibria in Hydrogen-Bonded Species*. **Journal of Chemical Education, 2019, 96, 5, 1022–1028.**

P. G. Rodríguez Ortega, B. Gilbert López, S. Esteo, M. Montejo. 2019. *Study of the Effect of Volume Contraction in Methanol–Water Mixtures Used as Solvents for Analytical Purposes: A Student-Centered Project for Practical Learning*. **Journal of Chemical Education, 2019, 96, 4, 677–684**

P. G. Rodríguez Ortega, M. Calderón Santiago, J. Alcántara Manzanares. 2019*. Gamificación y storytelling: innovación educativa para trabajar la didáctica del medioambiente en el grado de educación infantil*. En **Inclusión, Tecnología y Sociedad. Investigación e Innovación en Educación.** Editorial: Dykinson, S. L. ISBN: 978-84-1324-491-4

P. G. Rodríguez Ortega, M. Montejo, F. Márquez, J. J. López González. 2016. *Solvent Effects on the Monomer/Hydrogen-Bonded Dimer Equilibrium in Carboxylic Acids: (+)-(S)-Ketopinic Acid as a Case Study*. **Chemistry - An Asian Journal, 11 (12), 1798-1803**

C.2. Participation in R&D and Innovation projects

APROXIMACIÓN ARQUEOMÉTRICA A LA CULTURA DE LOS IBEROS: DEL LABORATORIO A LA REPRESENTACIÓN 3D (ARQUIBERLAB) - Proyecto de Promoción General del Conocimiento. Consejería de Innovación, Ciencia y Empresa, Junta de Andalucía (P11-HUM-7459). PERIOD: 12/2011-12/ 2015. AMOUNT GRANTED: 196.713, 25 €. PROJECT LEADER: Dr. D. Alberto Sánchez Vizcaíno.

INTERCULTURAL LEARNING IN SCIENCE AND MATHEMATICS INITIAL TEACHER EDUCATION (InCluSMe) – Erasumus+. European Commission (2016-1-DE01-KA203-002920). PERIOD: 09/2016-08/2019. AMOUNT GRANTED: 431.750,00 €. PROJECT LEADER: Dra. Katja Maaß.

THE RELEVANCE OF SCIENCE EDUCATION FOR THE XXIST CENTURY IN SPAIN AND LATIN AMERICA (RoseS) – Programa estatal de generación de conocimiento. MICINN

(PID2020_114191RD-100). PERIOD: 2021-2024. AMOUNT GRANTED: 48.521,00€. PROJECT LEADER: Dra. María Antonia Manassero Mas

The MAster in integrated STeam Education (MASTED) - **Erasmus+**, Erasmus Mundus Design Measures, Topic: ERASMUS-EDU-2021-EMJM-DESIGN. Proposal number: 101049637. PERIOD: 2022-2023. LEADER: Ileana Greca.

C.3. Participation in R&D and Innovation contracts

ASESORAMIENTO CIENTÍFICO-TÉCNICO SOBRE LA UTILIZACIÓN Y EVALUACIÓN DE RECURSOS EDUCATIVOS EN ABIERTO (REA) DEL PROYECTO EDIA Y DE SUS EFECTOS SOBRE LA MOTIVACIÓN Y EL APRENDIZAJE. CENTRO NACIONAL DE DESARROLLO CURRICULAR EN SISTEMAS NO PROPIETARIOS (CEDEC). PROJECT LEADER: Marta Romero Ariza. PERIOD: 02/2019 – 12/2020. AMOUNT: 5875,12 €

DESARROLLO DE CONTENIDO DIDÁCTICO ONLINE PARA EL PROYECTO AULA DIGITAL DE LA FUNDACIÓN PRO-FUTURO. ELESAPIENS, LEARNING & FUN PROJECT LEADER: Manuel Mora Márquez. PERIOD: 04/2017-09/2017. AMOUNT: 6000,00 €

IDENTIFICACIÓN DE RESIDUOS EN CUBIERTAS DE POLICARBONATO DE INTERÉS EN LA INDUSTRIA AUTOMOVILÍSTICA. VALEO, L. S. PROJECT LEADER: Manuel Montejo Gámez. PERIOD: 11/2017-12/ 2017. AMOUNT: 700,00 €