MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

CV date	24/11/2022

Part A. PERSONAL INFORMATION

First name	Jorge Jesús	
Family name	Rodríguez Chueca	
e-mail	jorge.rodriguez.chueca@upm.es	URL Web
Open Researcher and Contributor ID (ORCID) (*)		0000-0001-9050-1682

(*) Mandatory

A.1. Current position

Position	Profesor Titular Universidad		
Initial date	29/09/2022		
Institution	Universidad Politécnica de Madrid		
Department/ Center	Ingeniería Química Industrial y Medio Ambiente		Escuela Técnica Superior de Ingenieros Industriales
Country	Spain	Teleph. number	+34 9106 77334
Key words	Water quality, water treatment, water management, Advanced Oxidation Processes, photocatalysis, disinfection, micropollutants removal		

A.2. Previous positions (research activity interuptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
2009-2013 (48 months)	DGA predoctoral researcher/University of Zaragoza/Spain
2014-2015 (18 months)	Post-doctoral researcher/Universidade de Tràs os Montes e Alto Douro/Portugal
2015-2017 (22 months)	Post-doctoral researcher (Juan de la Cierva formación fellowship during 14 months) /Universidad Rey Juan Carlos/Spain
2017-2020 (36 months)	Assistant Professor/Universidad Politécnica de Madrid/Spain
2020-2022 (25 months)	Associate Professor I3/ Universidad Politécnica de Madrid/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Bachelor in Chemistry	University of Zaragoza (Spain)	2008
PhD in Chemical Engineering and Environmental Technologies	University of Zaragoza (Spain)	2013

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

Jorge works as I3 Associate Professor at the Department of Industrial and Environmental Chemical Engineering in the Escuela Técnica Superior de Ingenieros Industriales (ETSII) of the Universidad Politécnica de Madrid (UPM) since September 2020, and he holds the seal of excellence of Professor Echegaray of the Community of Madrid. He is member of the research group *Tecnologías Ambientales y Recursos Industriales* (TAR-Industrial) since his incorporation in UPM during 2017, being the responsible of the research line of "Advanced treatments of water" and the responsible of the research group lab. He has been visiting researcher in Plataforma Solar de Almería-CIEMAT (Spain) and École Polytechnique Fédérale de Lausanne (Switzerland).

Jorge holds a PhD in Chemical Engineering and Environmental Technologies from the University of Zaragoza (July 2013, rated as Sobresaliente Cum Laude). In March 2009, he was awarded with a predoctoral fellowship from the Diputación General de Aragón. On January 2014, he continued his professional activity with a postdoctoral research contract in the

University of Tràs-os-Montes e Alto Douro (Vila Real, Portugal), in the frame of the INNOFOOD project. During this 18-month postdoctoral stay, he studied the application of water treatment technologies to agro-industrial effluents. Next, a second postdoctoral stay was held at the Rey Juan Carlos University (24 months). In a first stage, Jorge was hired in the frame of MOTREM project, and in June 2016, he was awarded with the postdoctoral grant Juan de la Cierva-formación. During these 24 months, Jorge works on the monitoring and removal of micropollutants in wastewater.

Overall, he has 13 years of experience in research, being his main research lines strongly focused on the development and application of sustainable treatments for treatment of different water matrices (freshwater, urban or industrial wastewater), especially focused on the disinfection and removal of contaminants of emerging concern by photoassisted advanced oxidation processes, as photochemical and photocatalytic treatments, at different scales. Besides, Jorge is also working on the research line of water quality and management, assessment of environmental impacts by life cycle assessment and industrial symbiosis. He has developed this activity under his participation in 8 R+D national and European Projects, being **Principal Investigator** of 6 of them: two national projects, two projects from Universidad Politécnica de Madrid, and 2 from Regional Government of Madrid (In_Reuse project and Echegaray Project). Besides, he has participated in 4 Projects of Innovation in Education (1 European- Erasmus+, 3 National). He obtained the recognition of a six-year scientific research period (Sexenio 2009-2015). Besides, he has directed, **42 Final Degree Research projects**, with another 12 in progress, **and co-directing 1 Doctoral Thesis**.

Director of Aula CIMNE-ETSII and member of the Steering Committee of the research community UPMWater. He is also member of Water Europe, IAHR and Red META. Besides, Jorge was member of the Steering Committee and Head of the Training and Technologies Area of IWA Young Water Professionals Spanish Chapter (2018-2020).

In overall he has contributed with 53 peer-reviewed publications, 7 technical articles in non-indexed journals and 4 book chapters, as well, he was the editor of the book of abstracts of IWA Young Water Professionals Conference 2019. More specifically, 86% of the publications are in Q1 ranked journals (Scopus), in the “Environmental Engineering”, “Environmental Sciences” and “Chemical Engineering”. Currently he has a Scopus H-index of 20 (1107 citations; 13.04.2022), and Google Scholar H-index of 23 (1394 citations; 13.04.2022). On conference dissemination level, he has contributed with more than 50 communications in national and international conferences, approximately 20 talks in workshops and seminars, including 2 keynote (4th CCPAOHX (Colombia); GreenChem Conference (Italy)) and 1 invited talk (ICFM & MFMS & INM 2019; China). Besides, Jorge has acted as Chair on the organization and Chair of the Scientific Committee of IWA Young Water Professionals 2019 Conference, and he was member of IWA YWP Spain Conference 2017. Besides, he is member of the scientific committees of Iberoamerican Conference on Advanced Oxidation Technologies and AOPs PhD School.

He serves as a reviewer for 20+ Scientific Journals. He is Editor of “Water”, “Sustainability”, “Applied Sciences” and “ChemEngineering” Journals of the MDPI Publishers (Switzerland). He has acted as Guest Editor in different Special Issues of “Chemical Engineering Journal Advances” (Elsevier) and two in “Water” (MDPI). Finally, he has participated in the jury and/or the external evaluation committee of PhD Theses and international Final Degree Research projects and has evaluated research projects for Agencia Andaluza del Conocimiento. He has been awarded as Youth of the Year in the water sector in 2020, by iAgua.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

- Guerra-Rodríguez, S., Ribeiro A.R.L., Ribeiro R.S., Rodríguez E., Silva A.M.T., **Rodríguez-Chueca J**. 2021. UV-A activation of peroxymonosulfate for the removal of micropollutants from secondary treated wastewater. Science of the Total Environment, 770, art. No. 145299.
- Giannakis S., Samoili S., **Rodríguez-Chueca J.** A meta-analysis of the scientific literature on (photo)Fenton and persulfate advanced oxidation processes: Where do we stand and where

are we heading to? 2021. Current Opinion in Green and Sustaibale Chemistry, 29, art. no. 100456.

- Núñez-Salas R.E., **Rodríguez-Chueca J.**, Hernández-Ramírez A., Rodríguez E., Maya-Treviño M.D.L. 2021. Evaluation of B-ZnO on photocatalytic inactivation of *Escherichia coli* and *Enterococcus sp.* Journal of Environmental Chemical Engineering, 9 (1), art. No. 104940.
- **Rodríguez-Chueca, J.,** Barahona-García, E., Blanco-Gutiérrez, V., Isidoro-García, L., Dos santos-García, A.J. 2020 Magnetic $CoFe_2O_4$ ferrite for peroxymonosulfate activation for disinfection of wastewater. Chemical Engineering Journal, 398, art. no. 125606.
- Guerra-Rodríguez, S., Cediel, N., Rodríguez, E., **Rodríguez-Chueca, J.** Photocatalytic activation of sulfite using Fe(II) and Fe(III) for Enterococcus sp. Inactivation in urban wastewater (2020) Chemical Engineering Journal, art. no. 127326. ISSN: 1385-8947.
- Ozores Diez, P., Giannakis, S., **Rodríguez-Chueca, J.**, Wang, D., Quilty, B., Devery, R., McGuigan, K., Pulgarin, C. 2020. Enhancing solar disinfection (SODIS) with the photo-Fenton or the Fe^{2+}/peroxymonosulfate-activation process in large-scale plastic bottles leads to toxicologically safe drinking water (2020) Water Research, 186, art. no. 116387.
- **Rodríguez-Chueca, J.**, Guerra-Rodríguez, S., Raez, J.M., López-Muñoz, M.-J., Rodríguez, E. 2019. Assessment of different iron species as activators of $S_2O_8^{2-}$ and HSO_5^- for inactivation of wild bacteria strains. Applied Catalysis B: Environmental 248, 54-61.
- **Rodríguez-Chueca, J.**, Giannakis, S., Marjanovic, M., Kohantorabi, M., Gholami, M.R., Grandjean, D., de Alencastro, L.F., Pulgarín, C. Solar-assisted bacterial disinfection and removal of contaminants of emerging concern by Fe^{2+}-activated HSO_5^- *vs.* $S_2O_8^{2-}$ in drinking water. Applied Catalysis B: Environmental 248, 62-72-
- **Rodríguez-Chueca, J.**, Varella della Giustina, S., Rocha, J., Fernandes, T., Pablos, C., Encinas, Á., Barceló, D., Rodríguez-Mozaz, S., Manaia, C.M., Marugán, J. 2019. Assessment of full-scale tertiary wastewater treatment by UV-C based-AOPs: Removal or persistence of antibiotics and antibiotic resistance genes? Science of the Total Environment 652, 1051-1061.
- **Rodríguez-Chueca J.**, García-Cañibano C., Lepistö R.-J, Encinas Á., Pellinen J., Marugán J. 2019. Intensification of UV-C tertiary treatment: Disinfection and removal of micropollutants by sulfate radical based Advanced Oxidation Processes. Journal of Hazardous Materials, 94-102.

C.2. Congress

- **Keynote:** "Tratamiento de agua y aguas residuales mediante procesos de oxidación avanzado basados en radicales sulfato". 4º Congreso Colombiano de Procesos Avanzados de Oxidación (CCPAOHX). Universidad Antonio Nariño, Bogotá (Colombia). 12-15 April 2021.
- **Invited talk:** "Materials within the water circular economy: opportunities and challenges" 10th China International Conference on Functional Materials and Applications & The 6th International Conference on Multi-Functional Materials and Structures and International Conference on Frontier Development of New Materials" (ICFM & MFMS & INM 2019). Chongqing (China). 22-25 November 2019.
- **Oral presentation:** Magnetic $CoFe_2O_4$ ferrites for PMS activation for disinfection of wastewater. Jorge Jesús Rodríguez Chueca; Eva Barahona García; Verónica Blanco Gutiérrez; Antonio Juan Dos santos García. IWA Young Water Professionals Spain Conference 2019. 14/11/2019, Madrid, Spain.
- **Oral presentation:** Removal of antibiotics and antibiotic resistance genes by full-scale AOPs. Jorge Rodríguez Chueca; Telma Fernandes; Saulo Varela Della Giustina; Jaqueline Rocha; Cristina Pablos; Ángel Encinas Bogeat; Sara Rodríguez Mozaz; Célia Manaia; Javier Marugán Aguado. Xenowac II. 10/10/2018. Limassol, Chipre.

- **Oral presentation:** Enhancing solar disinfection by $SO_4^{\cdot-}$: differences in bacterial inactivation mechanism with $S_2O_8^{2-}$ *vs.* HSO_5^- as precursors. Jorge Rodríguez Chueca; Stefanos Giannakis; Miloch Marjanovic; César Pulgarín. 10th European meeting on solar chemistry and photocatalysis: environmental applications. 04/06/2018. Almería, Spain.
- **Poster presentation:** Enhancement of solar disinfection by the photo-fenton process based on natural reagent substitutes. Jorge Rodríguez Chueca; Stefanos Giannakis; Maxime Tranchant; Timur Senyuz; César Pulgarín. 6th European Conference on Environmental Applications of Advanced Oxidation Processes. 26/06/2019-30/06/2019. Portoroz, Slovenia

C.3. Research projects (selec

- **Title:** ARPHILAKE: Combating Antibiotic Resistance in Philippine Lakes: One-Health upstream interventions to reduce the burden. **Funding Agency:** Joint Programming Initiative on Antimicrobial Resistance (JPIAMR-ACTION Joint Transnational Call for Proposals 2021). Team member **Duration:** 01.06.2022 - 31.05.2025.
- **Title:** PHOTORAS: Intensificación de tratamientos de agua en Sistemas de Acuicultura Recirculante a través de Procesos fotoasistidos de Oxidación Avanzada (PID2021-128165OA-I00). **Principal investigator:** Dr. Jorge Rodríguez Chueca. **Funding Agency:** Agencia Estatal de Investigación. **Duration:** 36 months (2022-2025). **Value:** 135.000€
- **Title:** DIGIT4WATER: Hacia la Transformación y la Resiliencia del Ciclo Urbano del Agua: Evaluación de tecnologías innovadoras basadas en UV-C para la regeneración de aguas (TED2021-129969A-C32). **Principal investigator:** Dr. Jorge Rodríguez Chueca. **Funding Agency:** Agencia Estatal de Investigación. **Duration:** 24 months (2022-2024). **Value:** 125.000€
- **Title:** Convenio plurianual entre CM y la UPM (programa de excelencia para el profesorado universitario) (M190020074BJJRC). **Funding Agency:** Comunidad Autónoma de Madrid. **Duration:** 36 months (2020-2022). **Value:** 75.000 €.
- **Título:** INtensification processes for reducing risks on water REUSE (IN_REUSE). **Principal investigator:** Dr. Jorge Rodríguez Chueca. **Funding Agency:** Comunidad Autónoma de Madrid. **Duration:** 24 months (2020-2021). **Value:** 56.550 €.
- **Título:** Integrated treatment for the removal of polycyclic aromatic hydrocarbon (PAH) and pathogen germs for water reuse. **Principal investigator:** Dr. Jorge Rodríguez Chueca. **Funding Agency:** Universidad Politécnica de Madrid. **Duration:** 12 months (2018). **Value:** 5.000 €.
- **Título:** Desafíos emergentes Hacia una economía circular del agua: desinfección y DEGRADACIÓN de microplásticos. **Principal investigator:** Dr. Jorge Rodríguez Chueca. **Funding Agency:** Universidad Politécnica de Madrid. **Duration:** 24 months (2018-2019). **Value:** 15.000 €.
- **Título:** Integrated processes for monitoring and treatment of emerging contaminants for water reuse (MOTREM) (Water JPI JPIW2013-121). **Principal investigator:** Dr. Javier Marugán Aguado. **Funding Agency:** Ministerio de Economía y Competitividad. **Duration:** 2013-2018.
- **Título:** INNOFOOD – Innovation in the food sector through the valorization of food and agro-food by-products (Norte-07-0124-FEDER-0000029). **Principal investigator:** Dra. Ana Barros. **Funding Agency:** Fundación Ciencia y Tecnología (Portugal). **Duration:** 01/01/2014-30/06/2015.

C.4. Contracts, technological or transfer merits

- **Título:** Ensayos de actividad antibacteriana de materiales fotocataliticos. **Company:** Proquicesa S.L. **Duration:** 2020.
- **Title:** Ensayos de análisis de calidad físico-química y microbiológica de aguas residuales simuladas para validación de planta piloto de tratamiento. **Company:** Water Global Solutions S.L. **Duration:** 2021.