

CV Date	06/05/2023
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Part A. PERSONAL INFORMATION

First Name	Juan Carlos		
Family Name	Rad Moradillo		
Sex	Male	Date of Birth	
ID number Social Security, Passport			
URL Web	https://investigacion.ubu.es/investigadores/35459/detalle		
Email Address	crad@ubu.es		
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A.1. Current position

Job Title	Profesor Titular de Universidad		
Starting date	2003		
Institution	Universidad de Burgos		
Department / Centre	Química. Área de Edafología y Química Agrícola / Facultad de Ciencias		
Country		Phone Number	
Keywords	Soil chemistry; Organic fertiliser		

A.3. Education

Degree/Master/PhD	University / Country	Year
Grado en Ciencias Químicas	Universidad de Valladolid	1987
Licenciado en Ciencias Químicas	Universidad de Valladolid	1985

Part B. CV SUMMARY

Dr. Carlos Rad led the international research area of UBUCOMP. The research items of the Group are: (i) the agronomic and environmental application of organic wastes, (ii) the study of biological treatments for organic wastes of agro-industrial or urban origin, through composting, anaerobic digestion or microalgal production (iii) the improvement of biological soil parameters. Dr. Carlos Rad, has participated in research collaborations with regional and local authorities in the evaluation of organic wastes as organic fertilizers in the main agricultural crops of Castilla y León, in collaboration with companies like SOCAMEX, SUFI SA, AQUALIA, Biomasa Peninsular or SYNGENTA.

Dr. Carlos Rad has coordinated the following projects:

- "LIFE+ Integral Carbon: Development and global enforcement of GHG capture photobioreactors in agroindustrial activities", (LIFE13 ENV/ ES/001251) developed between 2014-16, with a total budget of 1.253.361 €. Two publications in STOTEN (Q1) were obtained with results of the project related with the effect of microalgae addition in the soil microbial processes. The research was prolonged with the PhD Thesis of Rajaa Kholssi related to the biofertilizing effect of microalgae and cyanobacteria in different crops and 5 new papers were derived from it.
- "Poll-Ole-GI: Rural green infrastructures for pollinators protection" financed by the European Program Interreg SUDOE 2016-19, with a total budget of 1.468.946,51 €. Two collective papers were published with the participation of consortium members in Ecology (Q1) and Journal of Applied Ecology (Q1) related to the effect of green infrastructure on pollinators abundance and crop performance.

Now, Dr. Carlos Rad is involved as researcher in several EU projects such as:

- "GREENER, inteGRated systems for Effective ENvironmEntal Remediation" financed by H2020 (Grant Agreement 826312, 2019-23) and a total budget 5057622.50 €. Two papers have been published in 2022 as part of the PhD Thesis of Sandra Curiel in Chemosphere (Q1) and

Environmental Toxicology (Q1) related with the use of microbial consortia in the bioremediation of THPS' polluted soils and their ecotoxicological characterization.

– "NOVATERRA: Integrated novel strategies for reducing the use and impact of pesticides, towards sustainable Mediterranean vineyards and olive groves" (Grant Agreement 101000554, 2020-24) and total budget 5507110,20 €. The project is still on going and results have been already presented in international conferences.

– "BIOSYSMO: BIOremediation systems exploiting SYnergieS for improved removal of Mixed pOllutants" (Grant Agreement 101060211, 2022-2026) and total budget 4873331.00 €. The project has been initiated in September 2022.

– "TRIBIOME: Advanced tools for integration and synergistic in The Reconnecton of microBIOMEs in resilient food systems" (Grant Agreement 101084485, 2023-2026) and total budget 4.914.725 €. The project will have its KoM next February.

Dr. Carlos Rad participate in the development of two new Strategic Projects Oriented to the Ecological Transition and the Digital Transition:

- "Sentinel imagery to monitor agricultural practices and their contribution to the initiative «4 per 1000» increase in soil organic carbon (SEN4CFARMING)" with a total budget of 151.225 €.

- "Integrated Biofactory for biogas and bioproducts production, CO2 absorption and agroindustrial effluents depuration (BioTAgro)" with a total budget of 160.000 €.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

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

- 1 **Scientific paper**. Sandra de la Parra; Verónica González; Patricia Solórzano Vives; et al; Carlos Rumbo. 2023. Comparative toxicological assessment of three soils polluted with different levels of hydrocarbons and heavy metals using in vitro and in vivo approaches. *Environmental Pollution*. ELSEVIER. 315, pp.120472.
- 2 **Scientific paper**. Rajaa Kholssi; Evan A.N. Marks; Jorge Miñón; Olimpio Montero; Juliana F. Lorenz; Abderrahmane Debdoubi; Carlos Rad. 2022. Biofertilizing Effects of Anabaena cylindrica Biomass on the Growth and Nitrogen Uptake of Wheat. *Communications in Soil Science and Plant Analysis*. Taylor & Francis. 53-10, pp.1216-1225.
- 3 **Scientific paper**. Allen-Perkins, Alfonso; Magrach, Ainhoa; Dainese, Matteo; et al; Bartomeus, Ignasi. 2022. CropPol: A dynamic, open and global database on crop pollination. *Ecology*. 103-3, pp.e3614-e3614.
- 4 **Scientific paper**. Sandra Curiel Alegre; Blanca Velasco Arroyo; Carlos Rumbo; Aqib HA Khan; Juan Antonio Tamayo Ramos; Carlos Rad; José Luis Rodríguez Gallego; Rocío Barros. 2022. Evaluation of biostimulation, bioaugmentation, and organic amendments application on the bioremediation of recalcitrant hydrocarbons of soil. *Chemosphere*. ELSEVIER. 307-1, pp.135638.
- 5 **Scientific paper**. Sandra Curiel Alegre; Blanca Velasco Arroyo; Carlos Rumbo; Aqib Hassan Ali Khan; Juan Antonio Tamayo Ramos; Carlos Rad; José Luis Rodríguez Gallego; Rocío Barros. 2022. Evaluation of biostimulation, bioaugmentation, and organic amendments application on the bioremediation of recalcitrant hydrocarbons of soil. *Chemosphere*. Elsevier. 307, pp.138638.
- 6 **Scientific paper**. Lucie Mota; Violeta Hevia; Carlos Rad; et al; Sílvia Castro. 2022. Flower strips and remnant semi-natural vegetation have different impacts on pollination and productivity of sunflower crops. *Journal of Applied Ecology*. British Ecological Society. 59-9, pp.2386-2397.
- 7 **Scientific paper**. José Paulo Sousa; Lucie Mota; Violeta Hevia; et al; Sílvia Castro. 2022. Flower strips and remnant semi-natural vegetation have different impacts on pollination and productivity of sunflower crops. *Journal of Applied Ecology*. John Wiley & Sons Ltd on behalf of British Ecological Society.. 59, pp.2386-2397.

- 8 **Scientific paper.** Mercedes Yartu; Carlos Cambra; Milagros Navarro; Carlos Rad; Ángel Arroyo; Álvaro Herrero. 2022. Humidity forecasting in a potato plantation using time-series neural models. *Journal of Computational Science*. Elsevier. 59, pp.101547. <https://doi.org/10.1016/j.jocs.2021.101547>
- 9 **Scientific paper.** Rajaa Kholssi; Evan A.N. Marks; Jorge Miñón; Ana Pascual Maté; Gonzalo Sacristán; Olimpio Montero; Abderrahman Debdoudi; Carlos Rad. (8/8). 2021. A consortium of cyanobacteria and plant growth promoting rhizobacteria for wheat growth improvement in a hydroponic system. *South African Journal of Botany*. Bureau for Scientific Publications. 142, pp.247-258. ISSN 0254-6299.
- 10 **Scientific paper.** Narbarte-Hernandez, Josu; Iriarte, Eneko; Carrancho-Alonso, Ángel; Olazabal-Uzkudun, Asier; Rad, Carlos; Arriolabengoa, Martin; Aranburu, Arantza; Antonio Quirós-Castillo, Juan. 2021. Geochemical fingerprint of agricultural liming as a regular management practice in Modern-period Basque farming. *Science of The Total Environment*. 787, pp.147525-147525. ISSN 0048-9697.
- 11 **Scientific paper.** García-Tojal, Javier; Iriarte, Eneko; Palmero, Susana; et al; Muñiz, Pilar. 2021. Phyllosilicate-content influence on the spectroscopic properties and antioxidant capacity of Iberian Cretaceous clays. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*. 251, pp.119472-119472. ISSN 1386-1425.
- 12 **Scientific paper.** Ahmed Amine Azzaz; Megdi Jeguirim; Evan A.N. Marks; Carlos Rad; Sallah Jellali; Mary-Lorène Goddard; Camelia Matei Ghimbeu. 2020. Physico-chemical properties of hydrochars produced from raw olive pomace using olive mill wastewater as moisture source. *Comptes Rendus Chimie. Academie Sciences France*. 23-11-12, pp.635-652.
- 13 **Scientific paper.** Narbarte-Hernández, Josu; Iriarte, Eneko; Rad, Carlos; Tejerizo, Carlos; Fernández Eraso, Javier; Antonio Quirós-Castillo, Juan. 2020. Long-term construction of vineyard landscapes in the Ebro Valley: The deserted village of Torrentejo (Basque Country, Spain). *CATENA*. 187, pp.104417-104417. ISSN 0341-8162.
- 14 **Scientific paper.** Evan A.N. Marks; Olimpio Montero; Carlos Rad. 2019. The biostimulating effects of viable microalgal cells applied to a calcareous soil: Increases in bacterial biomass, phosphorus scavenging, and precipitation of carbonates. *Science of the Total Environment*. ELSEVIER. 692, pp.784-790.
- 15 **Scientific paper.** Josu Nabarte-Hernández; Eneko Iriarte; Carlos Rad; Ángel Carrancho-Alonso; Penélope González-Sampériz; Leonor Peña-Chocarro; Juan Antonio Quirós-Castillo. 2019. On the origin of rural landscapes: Looking for physico-chemical fingerprints of historical agricultural practice in the Atlantic Basque Country (N Spain). *Science of the Total Environment*. Elsevier. 681, pp.66-81.
- 16 **Scientific paper.** Rajaa Kholssi; Evan A.N. Marks; Jorge Miñón; Olimpio Montero; Abderrahmane Debdoudi; Carlos Rad. 2019. Biofertilizing Effect of *Chlorella sorokiniana* Suspensions on Wheat Growth. *Journal of Plant Growth Regulation*. Springer. 38-2, pp.644-649.
- 17 **Scientific paper.** Narbarte-Hernández, Josu; Iriarte, Eneko; Rad, Carlos; Carrancho-Alonso, Ángel; González-Sampériz, Penélope; Peña-Chocarro, Leonor; Antonio Quirós-Castillo, Juan. 2019. On the origin of rural landscapes: Looking for physico-chemical fingerprints of historical agricultural practice in the Atlantic Basque Country (N Spain). *Science of The Total Environment*. 681, pp.66-81. ISSN 0048-9697.

C.2. Conferences and meetings

- 1 Carlos Rad; Evan AN Marks; Olimpio Montero; Rocío Barros. Effects of Microalgae-based Biofertilizers on Soil Microbiota. 3rd Global Soil Biodiversity Conference. Global Soil Biodiversity Initiative. 2023. Ireland. Conference.
- 2 Rocío Barros; Kieran Germaine; Daniel Garrido Sanz; et al; Rocío Barros. Use of -Omics to determine microbial diversity of hydrocarbon polluted soils. 3rd Global Soil Biodiversity Conference. Global Soil Biodiversity Initiative. 2023. Ireland. Conference.
- 3 Carlos Rad; Sandra Curiel Alegre; Blanca Velasco Arroyo; Carlos Rumbo; Juan Antonio Tamayo Ramos; Aqib H.A. Khan; Rocío Barros. Use of biochars and rhamnolipids as enhancers of TPHs bioremediation processes. 22 World Soil Congress. International Union of Soil Sciences. 2022. United Kingdom.

- 4 Sandra Curiel Alegre; Blanca Velasco Arroyo; Andrea Martínez; et al; Rocío Barros. Vermicompost improves the bioremediation efficiency in an aged contaminated soil with recalcitrant hydrocarbons. 8th European Bioremediation Conference. European Federation of Biotechnology. 2022. Greece.
- 5 Carlos Rad; Sandra Curiel; Blanca Velasco; Carlos Rumbo; Juan Antonio Tamayo; Rocío Barros. New opportunities for bioremediation technologies combining the use of local microbial consortia and organic amendments. EUROSOL 2021. European Confederation of Soil Science Societies. 2021. Switzerland.

C.3. Research projects and contracts

- 1 **Project.** BIOSYSMO: BIOremediation systems exploiting SYnergieS for improved removal of Mixed pOllutants. European Commission Grant Agreement. (Universidad de Burgos). 01/01/2023-31/12/2025. 4.873.331 €.
- 2 **Project.** TRIBIOME: Advanced tools for integration and synergistic inTeRconnectlon of microBIOMes in resilient food systems. European Commission Grant Agreement. (Universidad de Burgos). 01/01/2023-31/12/2025. 4.914.725 €.
- 3 **Project.** NOVATERRA: Integrated novel strategies for reducing the use and impact of pesticides, towards sustainable Mediterranean vineyards and olive groves". European Commission Grant Agreement. (Universidad de Burgos). 01/10/2020-30/09/2024. 5.507.110,2 €.
- 4 **Project.** GREENER. InteGRated systems for Effective ENviroNmEntal Remediation.CE-BIOTEC-04-2018: New biotechnologies for environmental remediation (RIA). Grant Agreement No. 826312. European Commission. Grant Agreement 826312. (Universidad de Burgos). 01/03/2019-28/02/2023. 5.527.031,5 €.
- 5 **Project.** Poll-Ole-GI SUDOE: Protección de Polinizadores y Servicios Ecosistémicos en la. Comisión Europea. (Universidad de Burgos). 01/07/2017-30/06/2019. 1.468.946,51 €.
- 6 **Project.** LIFE13 ENV/ES/001251 Development and global enforcement of GHG capture photobioreactors in agroindustrial activities. LIFE+ Environment Policy and Governance. (Universidad de Burgos). 01/07/2014-31/12/2016. 1.253.361 €.
- 7 **Contract.** Nuevas herramientas digitales, tecnológicas y agro-ecológicas para la producción sostenible y resiliente de cultivos leñosos y hortícolas en climas semiáridos en condiciones de cambio climático. Smartcrops 5.1 Centro para el Desarrollo Tecnológico Industrial. 03/04/2023-03/04/2027. 40.500 €.
- 8 **Contract.** Tecnología avanzada para la adaptabilidad de los cultivos en escenarios de cambio climático. AGRICORE Centro para el Desarrollo Tecnológico Industrial. 01/02/2023-01/02/2026. 35.000 €.
- 9 **Contract.** Economía circular con fangos EDAR y otros productos fertilizantes, biochar y estruvita, mediante su aplicación como enmienda orgánica en restauración ambiental. Aqualia. 01/09/2022-01/09/2024. 10.644,84 €.
- 10 **Contract.** Experiencias Demostrativas de Fertilización con Dosificación Variable Instituto Tecnológico Agrario de Castilla y León . ITACyL; Cooperativa Bureba Ebro; aGRAE Solutions. (Universidad de Burgos). 21/09/2020-21/09/2022. 36.800 €.

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

- 1 201430692. Tratamiento Terciario para la Eliminación de Metales, NTK y Nitratos en Aguas Residuales de Alta Carga Mediante Uso Combinado de Resinas de Intercambio Iónico y Sepiolita Spain. 11/11/2014. CONRESBUR.
- 2 P201330932. Proceso para la producción de enmienda edáfica de algas e instalación diseñada para tal fin Spain. 20/06/2013. Universidad de Burgos.