Part A. PERSONAL INFORMATION

CVA Date	11/02/2025

First name	Santiago		
Family name	Gómez-Ruiz		
Gender (*)	Male	Birth date (dd/mm/yyyy)	18/11/1978
Passport, ID number		**Phone number**	
e-mail	santiago.gomez@urjc.es	URL Web: https://gestion2.urjc.es/pdi/ver/santiago.gomez	
Open Researcher and Contributor ID (ORCID) (*)		0000-0001-9538-8359	

(*) Mandatory

A.1. Current position

Position	Full Professor of Inorganic Chemistry (Catedrático de Universidad)		
Initial date	04/02/2020		
Institution	Universidad Rey Juan Carlos		
Department/Center	Departamento de Biología, Geología, Física y Química Inorgánica, Escuela Superior de Ciencias Experimentales y Tecnología		
Country	Spain		
Keywords	bioinorganic chemistry; organometallic chemistry, nanomaterials; cytotoxicity; antibacterial; catalysis; photocatalysis		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
10/2001-09/2005	Assistant Professor (Profesor Ayudante de Escuela) / URJC / Spain
10/2005-11/2007	Assistant Professor (Profesor Ayudante Doctor) / URJC / Spain
01/2006-05/2007	Alexander von Humboldt Fellow / Universität Leipzig / Germany
12/2007-08/2009	Associate Professor (Profesor Contratado Doctor) / URJC / Spain
03/2008-08/2008	URJC-CAM Postdoc Fellow / Universität Leipzig / Germany
08/2009-02/2020	Professor (Profesor Titular) / URJC / Spain
10/2001-09/2005	Assistant Professor (Profesor Ayudante de Escuela) / URJC / Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Degree in Chemistry	Universidad de Castilla-La Mancha	2001
Diploma of Advanced Studies	Universidad Rey Juan Carlos (URJC)	2004
PhD	Universidad Rey Juan Carlos (URJC)	2004

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

Prof. Santiago Gómez-Ruiz (46) holds a PhD from URJC, Spain, (2004) and since 2020 is Full Professor of Inorganic Chemistry at the URJC. He was an Alexander von Humboldt Fellow with postdoctoral placement at Leipzig Univ. (2006-2007) and a Marie Curie Training Site Fellow (Leipzig Univ. 2003). During his research career he has participated in 25 competitive research projects and has published 198 articles in high impact international journals indexed in JCR (*h*=34, over 4000 citations, ~380 per year in the last 5 years, *h*=38 by Google Scholar and over 5200 citations).

He is PI of the Team “COMET-NANO”, evaluated as a “high output research group at the URJC” and is leading different research topics focused on **“*Design and preparation of metallodrug-functionalized nanomaterials with therapeutic activity*”** and **“*Novel advanced materials with photocatalytic applications in energy and environment*”** that he introduced in the group in 2009, as independent research. These topics have boosted his career as only in these areas, he has published more than 125 articles in journals of high impact in Chemistry and Materials (*Angew Chem Int Ed*; *Coord Chem Rev*; *Carbon*; *J. Catalysis*; *J. Mater. Chem. B, Cancers*, etc.) and various book chapters, for example: “*Environmental Nanotechnology*” (Springer, 2020) and “*Molecules at Work*” (Wiley, 2012). He is internationally recognized in these fields and included in the **list of Top 2%-researchers published by Stanford University in 2021 and 2024**. He has been invited to ca. 40 plenaries, invited or keynote lectures in conferences of high prestige and to ca. 45 lectures in different

top universities and research centres worldwide (Tohoku Univ., Brooklyn College, TU Dortmund, LMU Munich, IICT Hyderabad, National Chemical Laboratory India, etc.). He was awarded as **finalist of the "*3rd European Young Chemist Award 2010*" of EuCheMS**.

His research in these fields has also been recognized **as PI of six projects of the National Program (AEI-MCIN) (one of them a Proof-of-Concept project) and one DAAD-Spain/Germany project.** He has published novel insights on the anticancer action of nanosystems showing a novel therapeutic effect as non-classical drug-delivery systems, which do not need a stimulus to act in the therapeutic target and has developed new theranostic alternatives for treatment of triple-negative breast cancer, bacterial diseases or novel materials against Amyotrophic Lateral Sclerosis, already in preclinical trials. Furthermore, he has been IP of a URJC research project for the development of selective materials as potential therapeutic agents against COVID-19 or other viruses (patent submitted).

In addition, in the field of photocatalysis, the ideas developed by his team have made an impact in the design of versatile ultrareactive photocatalytic materials, used in reactions of industrial, environmental and energy interest (ROS production for water decontamination, H_2 production or waste-to-energy technologies) and is working in the activation of N_2 and CO_2. His research has attracted the interest of companies **being PI of 5 research projects for knowledge transfer** with the company *Chevron Phillips* and is collaborating with companies such as *Tolsa*. He also has a **patent on nanomaterials "*Method for obtaining copper double salt nanocompounds and use thereof as catalyst and microbicide*" WO/2021/005255.**

Transference to society is very important for Prof. Gómez-Ruiz, who has been awarded with a **grant "*Projects for Society*" by *Fundación Eurocaja Rural* for the development of photocatalytic selective sprays against SARS-CoV-2.** In addition, he is committed with research communication by participating in public science, organization of seminars, etc. trying to involve a wide variety of audience to show the social and economic effects of his research in daily life. He is also focused on knowledge transfer to early-stage researchers; therefore, he has **supervised 7 PhD Theses (3 more are ongoing), 4 Erasmus students, 45 Final year Projects and 6 Master Theses and various postdocs**. All his PhD students are either working as researchers in academia, or in the private sector in the fields of chemistry or pharmacy and he has trained three research group leaders (Dr. Polo-Cerón, Dr. Lagua and Dr. Iorhemba, young group leaders at Univ. del Valle (Colombia), Univ. de La Salle (Philippines) and Univ. Makurdi (Nigeria)). Furthermore, more than a half of his final year project students have been hired in research institutes or universities and are or have developed part of their careers in research.

He is **associate editor of *Environm Chem Lett* and reviewer of prestigious journals such as *Nature Commun.*, *Chem Rev*, *Adv Materials*, *Chem Soc Rev* and many others**. He is also evaluator of research proposals of different agencies such as **REA EU-Marie Curie Evaluator,** AEI, UEFISCDI, TACR, and many other institutions and foreign universities. He was one of the founders and Secretary of the Specialized Group of Young Chemists of the RSEQ and has **extensive experience in teaching in higher education institutions (>3400 hours).**

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

C.1. Publications *(see instructions)*

*198 Publications and 4 book chapters. Some of the **most relevant publications in the last 5 years** in inverse chronological order are summarized below:*

1. *Authors*: V. García-Almodóvar, P. Ardiles, S. Prashar, P. L. Páez, S. Gómez-Ruiz*
Title: Unleashing the antibacterial and antibiofilm potential of silica-based nanomaterials functionalized with an organotin(IV) compound
Complete Reference: *J. Mater. Chem. B* **2024***, 12,* 9056 – ***Corresponding Author (5/5)***

2. *Authors*: V. García-Almodóvar, K. Ovejero-Paredes, D. Díaz-García, J. M. Méndez-Arriaga, S. Prashar, M. Filice, S. Gómez-Ruiz*
Title: Albumin-Loaded Silica Nanomaterials Functionalized with Organotin(IV) Agents: Theranostic Materials Against Triple-Negative Breast Cancer
Complete Reference: *Adv. Therapeutics* **2024***, 7,* 2400114 – ***Corresponding Author (7/7)***

3. *Authors*: P.C. Choudante, J. Mamilla, L. Kongari, D. Díaz-García, S. Prashar, S. Gómez-Ruiz*, S, Misra
Title: Functionalized tin-loaded mesoporous silica nanoparticles for targeted therapy of triple-negative breast cancer: Evaluation of cytogenetic toxicity
Complete Reference: *J. Drug-Delivery Sci. Technol.* **2024***, 94,* 105502 –***Corresponding Author (6/7)***

4. *Authors*: I. J. Gómez, K. Ovejero-Paredes, J. M. Méndez-Arriaga, N. Pizúrová, M. Filice, L. Zajíčková, S. Prashar, S. Gómez-Ruiz*
Title: Organotin(IV)-Decorated Graphene Quantum Dots as Dual Platform for Molecular Imaging and Treatment of Triple Negative Breast Cancer
Complete Reference: *Chemistry – A Eur. J.* **2023***. 29,* e202301845 – ***Corresponding Author (8/8)***

5. *Authors*: I. Jénnifer Gómez, M. Díaz-Sánchez, N. Pizúrová, L. Zajíčková, S. Prashar, S. Gómez-Ruiz*
Title: Crystalline F-doped titanium dioxide nanoparticles decorated with graphene quantum dots for improving the photodegradation of water pollutants
Complete Reference: J. Photochem. Photobiol. A: Chemistry, **2023***, 443,* 114875 – ***Corresponding Author (6/6)***

6. *Authors:* D. Díaz-García, A. Ferrer-Donato, J. M. Méndez-Arriaga, M. Cabrera-Pinto, M. Díaz-Sánchez, S. Prashar, C. Fernández-Martos, S. Gómez-Ruiz*
Title: Design of Mesoporous Silica Nanoparticles for the Treatment of Amyotrophic Lateral Sclerosis (ALS) with a Therapeutic Cocktail Based on Leptin and Pioglitazone
Complete Reference: ACS Biomater. Sci. Eng. **2022**, *8*, 4838–4849 – ***Corresponding Author (8/8)***

7. *Authors:* M. Díaz-Sánchez, R. N. Murgu, D. Díaz-García, J. M. Méndez-Arriaga, S. Prashar, B. Urbán, J. Pinkas, M. Lamač, M. Horáček, S. Gómez-Ruiz*
Title: Synergistic Effect of Cu, F-Codoping of Titanium Dioxide for Multifunctional Catalytic and Photocatalytic Studies
Complete Reference: Adv. Sustainable Syst. **2021**, *5*, 2000298 – ***Corresponding Author (10/10)***

8. *Authors:* M. E. Shabestari, O. Martín, D. Díaz-García, S. Gómez-Ruiz*, V. J. Gonzalez, J. Baselga*
Title: Facile and Rapid Decoration of Graphene Oxide with Copper Double Salt, Oxides and Metallic Copper as Catalysts in Oxidation and Coupling Reactions
Complete Reference: Carbon **2020**, *161*, 7 – ***Corresponding Author (4/6)***

C.2. Research projects and grants

Five relevant projects as Principal Investigator *are summarized below:*

1. *Project Title*: 2D F-doped Titanium dioxide mAterials for the development of a New generAtion of cost-effective and high-performance memrisTOrS (TANATOS) (**PDC2023-145884-I00**)
Funding Entity: Ministerio de Ciencia, Innovación y Universidades / AEI
Participant Entities: URJC *Duration, from*: April 2024 *to*: March 2026
Principal Investigator: Dr. Santiago Gómez Ruiz
Number of participants: 15 (Principal Investigator) *Grant*: 253132 Euros

2. *Project Title*: ROS-generating agents based on multiFUNctional nanostructured materials for environmental and therapeutic applications (ROS-FUN) (**PID2022-136417NB-I00**)
Funding Entity: Ministerio de Ciencia e Innovación / AEI
Participant Entities: URJC *Duration, from*: September 2023 *to*: August 2025
Principal Investigator: Dr. Santiago Gómez Ruiz
Number of participants: 8 (Principal Investigator) *Grant*: 125000 Euros

3. *Project Title*: Versatile multifunctional and reusable nanosystems for lowering emissions by capture and valorIzation of carbon dioxide and nitrogen (VOLUPIA) (**TED2021-132175B-I00**)
Funding Entity: Ministerio de Ciencia e Innovación / AEI
Participant Entities: URJC *Duration, from*: December 2022 *to*: November 2024
Principal Investigator: Dr. Santiago Gómez Ruiz

Number of participants: 4 (Principal Investigator) *Grant*: 151800 Euros

4. *Project Title*: Multifunctional nanostructured systems with enhanced biomedical, catalytic and photocatalytic applications (NANOSY-BIOCAT) (**RTI2018-094322-B-I00**)
Funding Entity: Ministerio de Ciencia, Innovación y Universidades / AEI
Participant Entities: URJC *Duration, from*: January 2019 *to*: December 2021
Principal Investigator: Dr. Santiago Gómez Ruiz / Dr. Mariano Fajardo
Number of participants: 5 (Principal Investigator) *Grant*: 113861 Euros

5. *Project Title*: Design of innovative functionalized nanomaterials: Exploring their multifunctional applications in catalysis and medicinal chemistry (**CTQ2015-66164-R**)
Funding Entity: Ministerio de Economía y Competitividad
Participant Entities: URJC *Duration, from*: January 2016 *to*: December 2018
Principal Investigator: Dr. Santiago Gómez Ruiz / Dr. Mariano Fajardo
Number of participants: 6 (Principal Investigator) *Grant*: 100430 Euros

C.3. Contracts, technological or transfer merits

The researcher has worked in ***7 relevant research contracts with companies highlighting the following****:*

1. *Contract/Project Title*: Determination of intracellular ROS and RNS species in cells treated with metal complexes.
Contract type:Art. 83 LOU. *Company*: Chevron Phillips Chemical Company
Duration, from: 23 September 2014, *to*: 31 December 2015
Principal Investigator: Prof. Santiago Gómez Ruiz, *number of participants*: 2
Final amount of the project/contract: 3000 Euros

2. *Contract/Project Title*: Study of the Cell Death Mechanism Promoted by Metal Complexes
Contract type:Art. 83 LOU, *Company*: Chevron Phillips Chemical Company *Duration, from*: 1 July 2012, *to*: 30 November 2012 - *Principal Investigator*: Prof. Santiago Gómez Ruiz, *number of participants*: 3 - *Final amount of the project/contract*: 9000 Euros

C.4. Patents

Co-inventor of ***two patents, one in the last 10 years (and one more submitted). The most important summarized here:***

1. *Inventors*: M.E. Shabestari, O. Martín Cádiz, J. Baselga Llidó, S. Gómez-Ruiz, D. Díaz-García, G. Montalvo García, F. Guillén Carretero, D.M. Videira Quintela.
Title: Method for obtaining copper double salt nanocompounds and use thereof as catalyst and microbicide. *Patent number*: **WO/2021/005255**. *Priority country*: Spain. *Publication date*: 14/01/2021. *Priority date:* 10/07/2019. *Holder entity*: UC3M, UAH, URJC. *International Patent*

C.5. Congress

More than 125 contributions in national or international chemistry or materials research conferences. Plenary Lectures in: 7th International Conference of Materials for a Better Future (7th ICMABF-2022, Indonesia), International Conference on Emerging Trends in Chemical Sciences (ACS, Aligarh, India, 2020), between others. Invited Speaker in: BioGranada 2023, Nanotek-2017, E-MRS Fall Meeting 2016, etc. More than 45 Invited lectures worldwide: MNIT Jaipur (India, 2023), NCL (India, 2020), TU Dortmund (Germany, 2017), Hanyang University (South Korea, 2016), Tohoku University (Japan, 2015), IICT, Hyderabad (India, 2015), Nanjing and Jiangsu University (China, 2014), Brooklyn College (USA, 2014), etc.

C.6. Other merits of interest

Advisor of the EYCN of EuCheMS (2010-2020). Secretary of Young Section of the RSEQ (2008-2011). Academic Director of Innovation of URJC (2021-2022), Academic Director for Promotion of International Research of URJC. **Evaluator of research proposals of different agencies** "**REA-EU**" (**Marie Curie Evaluator**), "**European Science Foundation**", "**Israel Science Foundation**", "**UEFISCDI**" (Romania), **MCTIP and FONCYT** (Argentina), **CINECA** (Italy), **National Research Foundation South Africa**, **Academy of Science and TACR (Czech Republic), DAAD**, and many others. Organization of several activities and conferences (Lectures, Workshops, Courses, etc.)