

**Part A. PERSONAL INFORMATION**

<b>CV date</b>	07/01/2021
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First and Family name	David Díaz Díaz		
Social Security, Passport, ID number	43365938J	Age	46
Researcher numbers	Researcher ID	A-7792-2015	
	Orcid code	0000-0002-0557-3364	

**A.1. Current position**

(1) Name of University/Institution	Universidad de La Laguna, Departamento de Química Orgánica		
Address and Country	Av. Astrofísico Francisco Sánchez s/n, 38296, La Laguna, Spain		
Phone number	922318446	E-mail	ddiazdiaz10@gmail.com
Current position	Disguised Researcher (Beatriz Galindo, Senior)	From	07/01/2020
UNESCO code	2306 – Organic Chemistry; 3312 – Materials Technology		
Keywords	Hydrogels, organogels, gels, polymers, organic synthesis, organic-inorganic hybrid materials, stimuli-responsive materials, adhesives, coatings, multifunctional materials, catalysis, photocatalysis, drug delivery, tissue engineering, supramolecular chemistry, self-assembly, self-healing, dynamic covalent chemistry.		

(2) Name of University/Institution	Universität Regensburg (UR), Fakultät für Chemie und Pharmazie		
Address and Country	Universitätsstr. 31, 93053 Regensburg, Germany		
E-mail	David.Diaz@chemie.uni-regensburg.de		
Current position	Privatdozent	From	01/10/2018

**A.2. Education**

Degree	University	Year
First Degree in Chemistry (Bachelor)	University of La Laguna (ULL)	1997
PhD in Chemistry	University of La Laguna (ULL)	2002

**A.3. JCR articles, h Index, thesis supervised...**

JCR publications: >175 (>75% Q1); citations: 8399 (Google Scholar); citations/year (last 5 years): 1035; h-index: 47; i10: 139; patents: 2; book chapters: 7; outreach articles: >15; participation in funded research projects: >20; invited conferences: >65; participation in scientific conferences: >70; director of 10 PhD theses (inc. 3 in progress), 11 MSc, 9 BSc.

**Part B. CV SUMMARY**

David Díaz Díaz was born in 1974 (Tenerife). He studied there and received his PhD in Chemistry from the ULL under the supervision of Prof. Víctor Martín. His doctoral thesis focused on the synthesis of natural products and the development of new methodologies using transition metal complexes. In 2002, he joined the group of Prof. M. G. Finn as postdoc at TSRI in California (US), where he also worked in close collaboration with Nobel Laureate Prof. K.B. Sharpless. During this period, he focused on the chemistry of amidines, bioconjugation, click chemistry, functional polymers and soft materials. Since 2006, he has held various positions in academia and industry, including the "Ramón y Cajal" position at the Autonomous University of Madrid (Spain), and Sr. Chemist at the Dow Chemical Company in Switzerland. In 2010, he became a Tenured Scientist at the Spanish National Research Council (CSIC) and Alexander von Humboldt Experienced Researcher at the University of Regensburg (Germany) receiving dual affiliation and establishing his independent research group. In 2013, he was awarded with the Heisenberg Professorship (being the first Spanish Scientist holding this distinction) from the German Research Foundation (DFG) and was appointed as Assoc. Prof. at the Faculty of Chemistry and Pharmacy of the University of Regensburg. Among several international honors and awards, he has received the Young Investigator Award from the Polymer Network Group in Japan. He is also the *Editor-in-Chief* of the journal *Gels* and Full Editorial Board Member of *ScienceOpen*. In 2017, he received Honorary Adjunct Professorships from the Universities of Jiangsu (Chinese Advanced Materials Society) and Nigeria (African Nanoscience-Nanotechnology Initiative); Honorary Membership of the Argentine Organic Chemistry

Association; Accreditation as University Professor by the National Agency for Quality Assessment and Accreditation of Spain; and the status of Permanent Member (*venia legendi*) of the Faculty of Chemistry and Pharmacy at the University of Regensburg in Germany. From October 2018 to December 2019, he combined his position as Tenured Scientist at the IPNA-CSIC (Tenerife, Spain) and as permanent Privatdozent at the University of Regensburg (Regensburg, Germany), and since 07/01/2019 he is also Senior Distinguished Researcher "Beatriz Galindo" at the University of La Laguna (Tenerife, Spain). He is member of several scientific societies (i.e., ACS, RSC, RSEQ, GDCh, SSB), and has about 220 scientific publications (>175 JCR). His main research interest focused on the development of functional soft materials for biomedical, catalytic, coatings and energy applications.

### **Part C. RELEVANT MERITS**

#### **C.1. Publications** (*representative publications during the last 10 years*)

1. Maiti, B.; Abramov, A.; Franco, L.; Puiggali, J.; Enshaei, H.; Aleman, C.; Díaz, D. D. Thermoresponsive shape-memory hydrogel actuators made by photo-triggered click chemistry. *Adv. Funct. Mater.*, **2020**, *30*, 2001683 (DOI: 10.1002/adfm.202001683) (2 cites)
2. Tautz, M.; Kuchenbrod, M. T.; Hertkorn, J.; Weinberger, R.; Welzel, M.; Pfitzner, A.; Díaz, D. D. Influence of Epitaxial Composition of N-Face GaN KOH Etch Kinetics Determined by ICP-OES. *Beilstein J. Nanotech.*, **2020**, *11*, 41-50 (DOI: 10.3762/bjnano.11.4) (14 cites)
3. Mumuni, M.A.; Kenchukwu, F.C.; Ofokansi, K.C.; Attama, A. A.; Díaz, D. D. Insulin-mucoadhesive nanoparticles based on mucin-chitosan complexes for oral delivery and diabetes treatment. *Carbohydr. Polym.*, **2020**, *229*, 115506 (DOI: 10.1016/j.carbpol.2019.115506) (14 cites)
4. Dhaware, V.; Díaz, D. D., Gupta, S. S. Biopolymer glycopolyptide blended scaffolds: Synthesis, characterization and cellular interactions. *Chem. Asian J.*, **2019**, *14*, 4837-4846 (DOI: 10.1002/asia.201901227R1) (1 cite)
5. Grijalvo, S.; Nieto-Díaz, M.; Maza, R. M.; Eritja, M.; Díaz, D. D. Alginate hydrogels as scaffolds and delivery systems to repair the damaged spinal cord. *Biotechnol. J.*, **2019**, *14*, 1900275 (DOI: 10.1002/biot.201900275) (5 cites)
6. Maiti, B.; Abramov, A.; Pérez-Ruiz, R.; Díaz, D. D. The prospect of photochemical reactions in confined gel media. *Acc. Chem. Res.*, **2019**, *52*, 1865-1876 (DOI: 10.1021/acs.accounts.9b00097) (14 cites)
7. Häring, M.; Abramov, A.; Okumura, K.; Ghosh, I.; König, B.; Yanai, N.; Kimizuka, N.; Díaz, D. D. Air-sensitive photoredox catalysis performed under aerobic conditions in gel networks. *J. Org. Chem.*, **2018**, *83*, 7928-7938 (DOI: 10.1021/acs.joc.8b00797) (14 cites)
8. Mayr, J.; Saldías, C.; Díaz, D. D. Release of small bioactive molecules from physical gels. *Chem. Soc. Rev.* **2017**, *47*, 1484-1515 (DOI: 10.1039/c7cs00515f) (72 cites)
9. Grijalvo, S.; Alagia, A.; Puras, G.; Zárate, J.; Mayr, J.; Pedraz, J. L.; Eritja, R.; Díaz, D. D. Cationic nioplexes-*in*-polysaccharide-based hydrogels as versatile biodegradable hybrid materials to deliver nucleic acids. *J. Mater. Chem. B* **2017**, *5*, 7756-7767 (DOI:10.1039/C7TB01691C) (9 cites)
10. Pérez-Madrugal, M.; Torras, J.; Casanovas, J.; Häring, M.; Aleman, C.; Díaz, D. D. A paradigm shift for preparing versatile M<sup>2+</sup>-free gels from unmodified sodium alginate. *Biomacromolecules* **2017**, *18*, 2967-2979 (DOI:10.1021/acs.biomac.7b00934) (20 cites)
11. Mitra, S.; Sasmal, H. S.; Kundu, T.; Kandabeth, S.; Illath, K. S.; Díaz, D. D.; Banerjee, R. Targeted drug delivery in covalent organic nanosheets (CONS) via sequential postsynthesis. *J. Am. Chem. Soc.* **2017**, *139*, 4513-4520 (DOI:10.1039/C7CC00765E) (223 cites)
12. Pettignano, A.; Grijalvo, S.; Häring, M.; Eritja, R.; Tanchoux, N.; Quignard, F.; Díaz, D. D. Boronic acid-modified alginate enables direct formation of injectable, self-healing and multistimuli-responsive hydrogel. *Chem. Commun.* **2017**, *53*, 3350-3353 (DOI:10.1039/C7CC00765E) (67 cites)
13. Armelin, E.; Whelan, R.; Martínez-Triana, Y.; Alemán, C.; Finn, M. G.; Díaz, D. D. Protective coatings for aluminum alloy based on hyperbranched 1,4-polytriazoles. *ACS Appl. Mater. Interfaces* **2017**, *9*, 4231-4243 (DOI: 10.1021/acsami.6b14174) (16 cites)
14. Kumari, S.; Häring, M.; Gupta, S. S.; Díaz, D. D. Catalytic macroporous biohydrogels made of ferritin-encapsulated gold nanoparticles. *ChemPlusChem* **2017**, *82*, 225-232 (DOI: 10.1002/cplu.201600454) (3 cites)
15. Dragan, E. S.; Mayr, J.; Häring, M.; Irina, A.; Díaz, D. D. Spectroscopic characterization of azo dyes aggregation induced by DABCO-based ionene polymers and dye removal efficiency

as a function of ionene structure. *ACS Appl. Mater. Interfaces* **2016**, *8*, 30908-30919 (DOI: 10.1021/acsami.6b09853) (17 cites)

16. Feldner, T.; Häring, M.; Esquena, J.; Subhadeep, S.; Banerjee, R.; Díaz, D. D. Supramolecular metallo gel that impart self-healing properties to other gel networks. *Chem. Mater.* **2016**, *28*, 3210-3217 (DOI: 10.1021/acs.chemmater.6b01144) (81 cites)

17. Häring, M.; Pérez-Ruiz, R.; von Wangelin, A. J.; Díaz, D. D. Intragel photoreduction of aryl halides by green-to-blue upconversion under aerobic conditions. *Chem. Commun.* **2015**, *51*, 16848-16851 (DOI: 10.1039/C5CC06917C) (59 cites)

18. Bachl, J.; Mayr, J.; Sayago, F. J.; Cativiela, C.; Díaz, D. D. Amide-triazole isosteric substitution for tuning self-assembly and incorporating new functions into soft supramolecular materials. *Chem. Commun.* **2015**, *51*, 5294-5297 (DOI: 10.1039/C4CC08593K) (36 cites)

19. Panda, C.; Debgupta, J.; Díaz, D. D.; Gupta, S. S.; Dhara, B. B. Homogeneous photochemical water oxidation by biuret modified Fe-TAML: Evidence of Fe<sup>V</sup>(O) intermediate. *J. Am. Chem. Soc.* **2014**, *136*, 12273-12282 (DOI: 10.1021/ja503753k) (145 cites)

20. Díaz, D. D.; Johnson, J. A. Photo-responsive hydrogels for adaptive membranes. In "Smart Membranes and Sensors. Synthesis, Characterization and Applications", Annarosa Gugliuzza (ed.), Scrivener Publishing LLC - Wiley, Ch 2, pp 21-52, **2014** (ISBN: 9781118423790)

21. Zhou, H.; Schön, E.-M.; Wang, M.; Glassman, M.; Liu, J.; Díaz, D. D.; Olsen, B. D.; Johnson, J. A. Isotopic labeling disassembly spectrometry (ILDaS): Crossover experiments in polymer networks reveal cyclic defects. *J. Am. Chem. Soc.* **2014**, *136*, 9464-9470 (DOI: 10.1021/ja5042385) (61 cites)

22. Saha, S.; Bachl, J.; Kundu, T.; Díaz, D. D.; Banerjee, R. Dissolvable metallohydrogels for controlled release: Evidence of a kinetic supramolecular gel phase intermediate. *Chem. Commun.* **2014**, *50*, 7032-7035 (DOI: 10.1039/c4cc02771j) (33 cites)

23. Accurso, A. A.; Delaney, M.; O'Brien, J.; Kim, H.; Iovine, P. M.; Díaz, D. D.; Finn, M. G. Improved metal-adhesive polymers from Cu(I)-catalyzed azide-alkyne cycloaddition. *Chem. Eur. J.* **2014**, *20*, 10710-10719 (DOI: 10.1002/chem.201400137) (12 cites)

24. Bachl, J.; Zanuy, D.; López-Pérez, D. E.; Revilla-López, G.; Cativiela, C.; Alemán, C.; Díaz, D. D. Synergistic computational-experimental approach to improve ionene polymer-based functional hydrogels. *Adv. Funct. Mater.* **2014**, *24*, 4893-4904 (DOI: 10.1002/adfm.201304230) (22 cites)

25. Mallick, A.; Garai, B.; Díaz, D. D.; Banerjee, R. Hydrolytic conversion of a metal-organic polyhedron into a metal-organic framework. *Angew. Chem. Int. Ed.* **2013**, *52*, 13755-13759 (DOI: 10.1002/anie.201307486) (67 cites)

26. Fatás, P.; Bachl, J.; Oehm, S.; Jiménez, A. I.; Cativiela, C.; Díaz, D. D. Multistimuli responsive supramolecular organogels formed by low-molecular-weight peptides bearing side-chain azobenzene moieties. *Chem. Eur. J.* **2013**, *19*, 8861-8874 (DOI: 10.1002/chem.201300796) (62 cites)

27. Kapoor, I.; Schön, E.-M.; Bachl, J.; Kühbeck, D.; Cativiela, C.; Saha, S.; Banerjee, R.; Roelens, S.; Marrero-Tellado, J. J.; Díaz, D. D. Competition between gelation and crystallisation of a peculiar multicomponent liquid system based on ammonium salts. *Soft Matter*, **2012**, *8*, 3446-3456 (DOI: 10.1039/C2SM07183E) (40 cites)

28. Kühbeck, D.; Saidulu, G.; Reddy, K. R.; Díaz, D. D. Critical assessment of the efficiency of chitosan biohydrogel beads as recyclable and heterogenous organocatalyst for C-C bond formation. *Green Chem.* **2012**, *14*, 378-392 (DOI: 10.1039/C1GC15925A) (93 cites)

## **C.2. Research projects and grants (most relevant during the last 10 years)**

1. Desarrollo de formulaciones a base de gel para catalysis redox basada en aniquilación triplete-triplete usando luz visible, MICINN (Spain), PID2019-105391GB-C21, **01/06/2020-31/05/2023**; PI, 134.000 €

2. Development and manufacturing of a highly integrated air treatment module for the use in automotive high performance PEFC. BMBF. UR, **01/2018-01/2021**, PI, 311.146 €

3. Understanding the influence of wet chemical treatment on electro-optical characteristics of epitaxially grown (III-V) compound semiconductor layers. Osram Opto Semiconductors, **01/2017-01/2020**, PI, 210.000 €

4. Gel-based materials as nanoreactors for catalytic processes. Deutsche Forschungsgemeinschaft, Germany, DFG 1748/3-(1-3), UR, **10/2013-10/2018**, PI, 570.800 €

5. Preparation of new acid-based metal organic frameworks and related metallo gels for water adsorption and controlled release. DAAD-Deutscher Akademischer Austauschdienst (Germany), PI, 01/2015-01/2018, PI, 44.700 €

6. Sustainable functional gels with high thermo-resistance and mechanical strength enabled by 'spring-loaded' reactions. UR, 01/2010-01/2013, PI, 50.000 €

### **C.3. Participación en contratos, méritos tecnológicos o de transferencia**

#### **C.4. Patents**

1. Díaz, D. D. Uso de una composición acuosa como adhesivo. CSIC. 2019-07-19, OEPM Madrid, Spain, P201930672.

2. Díaz, D. D.; Fokin, V. V.; Finn, MG, International patent number WO 2007/027493 A2, Stabilization of organogels and hydrogels by copper(I)-catalyzed azide-alkyne [3+2] cycloaddition. The Scripps Research Institute (California, USA), 8 March 2007.

#### **C.5. Editorial activities**

1. Editor-in-Chief of *Gels* (ISSN 2310-2861, <https://www.mdpi.com/journal/gels>). Since 2014.

2. Editorial Board Member of *ScienceOpen* (<https://www.scienceopen.com>). Since 2012.

3. Section Editor (Chemistry) of *The All Results Journals: Chem* (SAC SIS, ISSN 2172-4563, <http://arjournals.com/index.php/Chem>). Since 2010.

#### **C.6. Evaluation activities**

1. Reviewer for scientific journals: >30 JCR journals.

2. Reviewer of grants for international evaluation agencies: ANEP (Spain), DFG (Germany), ERC, FWO (Belgium), ARF (Austria), MCT (Romania).

3. Scientific coordinator and evaluator: (1) International PhD program at the Univ. of Regensburg; (2) SynCat MSc Advanced Synthesis and Catalysis at the Univ. of Regensburg.

4. Referee of PhD and MSc theses: >30.

#### **C.7. Direction of PhD theses (most representative)**

1. "Characterization and Manipulation of N-face Gallium Nitride Etching in Alkaline Solution", Markus Tautz, Universität Regensburg (UR), Defense date: 17/02/2020.

2. "Synthesis, Characterization and Application of New Functional Gels", Marleen Häring, Summa Cum Laude, Universität Regensburg (UR), 27/09/2018.

3. "Synthesis, characterization and application of smart materials based on low-molecular-weight compounds and polymers", Judith Mayr, Magna Cum Laude, UR, 02/06/2017.

4. "Engineering New Supramolecular Gels: From Catalysis to Drug Delivery", Jürgen Bachl, Magna Cum Laude, Universität Regensburg, 12/05/2014.

5. "Investigation of biopolymer-based hydrogels as green and heterogeneous catalysts in C-C bond formation", Dennis Kühbeck, Magna Cum Laude, Universität Regensburg, 28/04/2014.

6. "Preparation, characterization and potential application of new low-molecular-weight organogels", Eva-Maria Schön, Magna Cum Laude, Universität Regensburg, 31/01/2014.

#### **C.8. Organizer of international scientific conferences**

1. XXXVIII Reunión Bional de Química Orgánica – RSEQ, (Tenerife, Spain, June 2020).

2. ACS 70<sup>th</sup> Southeastern Regional Meeting. Symposium: Organic chemistry tools for synthesis, biomedicine, and materials science (Augusta, US, 2018).

#### **C.9. Awards and distinctions**

First Degree Award in Chemistry 1992–1997, ULL (**1997**); Outstanding Award in Chemical Sciences, ULL (**1997**); National Award for Excellence in Academic Performance 1996–1997 (**1997**); Young Researchers Award - Día de Canarias - (**2002**); Best Doctoral Thesis Award, Chemistry Faculty, ULL (**2003**); PhD Award, Experimental and Technical Sciences, ULL (2003); Teresa Pinillos Scientific Outreach Award, La Rioja, AITRi (**2005**); Young Researchers Award, Autonomic Government –Canarias– (**2005**); Young Canarias 2007 Award, Autonomic Government –Canarias– (**2007**); European Young Chemist Award Finalist 2008, EuCheMS, Italy (**2008**); Dow Chemical Company (Switzerland, USA): Performance Award (**2007**), CRI Award, Polyurethanes (**2008**), Performance Award (**2008**), Learning Experience Award (**2009**); Alexander von Humboldt Award for Experienced Researchers, Germany (**2010**); Heisenberg Professorship Award, DFG, Germany (**2013**); Young Investigator Award, Polymer Gels & Networks, Japan (**2014**); Ambassador of Alumni, ULL (**2014**); Extended Heisenberg Professorship Award DFG, Germany (**2016**); Honor. Adj. Prof. at Jiangsu University, China (**2017**); Accreditation as Assoc. Prof. by the ANECA agency (**2017**); Honorary Member, Sociedad Argentina de Investigación en Química Orgánica (Argentina) (**2017**); Privatdozent für Organische Chemie, Universität Regensburg (**2018**); Beatriz Galindo Senior (**2019**).