

## CURRICULUM VITÆ

# Luis Fernando Bautista

### **Personal information**

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Position: Associate Professor  
Department of Chemical and Environmental Technology, ESCET  
Rey Juan Carlos University

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### **Education**

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1997 *PhD* in Chemistry (Chemical Engineering), Complutense University of Madrid, Spain.

1990 B.Sc. in Chemistry (Industrial Chemistry), Complutense University of Madrid, Spain.

### **Academic and Professional Positions**

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2004-ongoing Associate Professor. Department of Chemical and Environmental Technology, Rey Juan Carlos University (URJC), Spain.

2003-2004 Associate Professor. Department of Chemical Engineering, Complutense University of Madrid (UCM), Spain.

2002-2004 Freelance translator (Patents, English-Spanish).

2001-2003 Lecturer. Department of Chemical Engineering, UCM, Spain.

1998-1999 Visiting Postdoc Researcher. Department of Biotechnology, Technical University of Denmark (DTU).

1996-2001 Assistant Lecturer. Department of Chemical Engineering, UCM, Spain.

1994-1996 *PhD* student. Department of Chemical Engineering, UCM, Spain.

1993 Freelance Engineer.

1992 Process Engineer. Técnicas Reunidas S.A., Spain.

1990 Chemist. Productos Bituminosos S.A., Spain.

### **Academic Appointments and Merits**

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2020-2021 Coordinator of the Academic Section "Engineering and Architecture" in the International Masters School, URJC

2019	Member of the Scientific Committee of the "2 <sup>nd</sup> International Meeting on New Strategies in Bioremediation Processes (BioRemid-2019)", 24-25 October 2019, Porto, Portugal.
2018-2019	Elected member of the Faculty Board (School of Experimental Sciences and Technology, URJC)
2017	Member of the Scientific Committee of the "International Meeting on New Strategies in Bioremediation Processes (BioRemid-2017)", 9-10 March 2017, Granada, Spain.
2014-ongoing	Coordinator of two Research Areas ("Biomass and Bioenergy" and "Production and Storage of Hydrogen") of the Doctorate Program in Industrial Technologies (URJC).
2011-2014	Elected member of the Faculty Board (School of Experimental Sciences and Technology, URJC)
2010-2014	Coordinator of the Degree in Environmental Engineering (URJC).
2009-2019	Member of the Doctorate Commission of the URJC.
2008-2013	Coordinator of internships in companies for students of the Degree in Chemical Engineering.
2008	Member of the Organizing Committee of the "XXXII Reunión Ibérica de Adsorción (RIA-2008)", 22-24 September 2008, Móstoles, Spain.
2006-2009	Technical Director of the Laboratory of Spectroscopy, LABTE (URJC).
2005-2010	Coordinator of 4 <sup>th</sup> year of the Degree in Environmental Sciences (URJC).
2005-ongoing	Coordinator of the Laboratory of Chromatography (Group of Chemical and Environmental Engineering, URJC).
2002-2004	Deputy Technical Director of a biodiesel plant (5000 t/y), owned by UCM and IDAE, in Alcalá de Henares, Spain.

### Research outputs (key figures)

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Web of Science: h-Index = 22; >1600 citations

Scopus: h-index = 22; >1700 citations

Google Scholar: h-index = 27; >2400 citations

### Memberships and Societies

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From 2014 Society of Chemical Industry (SCI. [www.soci.org](http://www.soci.org)).

From 2010 Spanish Society of Microbiology (SEM. [www.semicrobiologia.org](http://www.semicrobiologia.org)).

From 2008 Spanish Society of Catalysis (SECAT. [www.secat.es](http://www.secat.es)).

From 2005 European Federation of Biotechnology (EFB. [www.efbiotechnology.org](http://www.efbiotechnology.org)).

### Research Grants

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#### Principal Investigator

2020 GRAS extraction of carotenoids from *Dunaliella salina*. Monzón Biotech S.L.

2019 Bacteriostatic performance of biocides in diesel fuel. Repsol S.A., (10 k€).

- 2019-2022 Development of advanced microalgae technologies for a circular economy. Comunidad de Madrid (P2018/BAA-4532), (749 k€)
- 2019-2021 Management of a laboratory technician fellowship. Comunidad de Madrid (PEJ-2018-AI/AMB-10263), (38 k€)
- 2019-2020 Management of a research fellowship. Comunidad de Madrid (PEJD-2018-PRE/AMB-9557), (25 k€)
- 2017-2019 Management of a postdoctoral fellowship. Comunidad de Madrid (PEJD-2016/AMB-3249), (35 k€)
- 2016-2018 Biodegradable electronics. Austrian Research Promotion Agency (Project No 851254), (48 k€)
- 2010-2012 Microbial growth in fuel tanks. Repsol S.A., (59 k€)
- 2006-2009 Green diesel through hydrogenation of biomass. Repsol S.A., (116 k€)
- 2008-2011 Bioremediation of polluted soils. Fundación Alfonso Martín Escudero, (86 k€)
- 2003-2004 Purification of a veterinary vaccine. Laboratorios SYVA S.A., (43 k€)
- 2000-2001 Chromatographic purification of a plant growth hormone. Universidad Complutense de Madrid (PR52/00-8837), (6 k€)

### Researcher

- 2018-2020 Design of nanoparticles for drug-controlled release. Spanish Government, National Research Plan (CTQ2017-88642-R), (93 k€)
- 2018 Microbial biodiversity to enhance soil fertility. Gaiambiente Environmental Consulting, (2 k€)
- 2015-2017 Research in energy and environmental technology. Universidad Rey Juan Carlos, (530 k€)
- 2015-2018 Nanoparticles for drug controlled release. Spanish Government, National Research Plan (CTQ2014-57858-R), (196 k€)
- 2014-2018 Industrial applications of Spirulina. Comunidad de Madrid (S2013/ABI-2783), (95 k€)
- 2013-2014 Enzymatic process for biodiesel from microalgae. Universidad Rey Juan Carlos (PRIN13 CC05), (4 k€)
- 2012-2014 Oxygenated biofuels from lignocellulosic biomass. Spanish Government, National Research Plan (CTQ2011-28216-C02-01), (173 k€)
- 2012-2013 Sustainable synthesis of biofuels from lignocellulosic biomass. Fundación Iberdrola, (20 k€)
- 2010-2014 Green biofuels from wastes. Comunidad de Madrid (S2009/ENE-1743), (150 k€)
- 2009-2011 Intensification of biodiesel process. Spanish Government, National Research Plan (CTQ2008-01396), (164 k€)
- 2008-2011 Fungal genomics for biodiesel. Región de Murcia (BIO-BMC 07/01-0005), (147 k€)
- 2005-2008 Alternative catalytic processes for pharmaceutical and food intermediates. Spanish Government, National Research Plan (CTQ2005-02375/PPQ), (148 k€)
- 2005-2006 *In-situ* bioremediation of soils polluted with PAH. Spanish Government, National Research Plan (013/2006/2-1.1; 1.1-373/2005/3-B), (119 k€)
- 2005-2006 Cracks in polyethylene pipes. Repsol S.A., (32 k€)

2003-2004	Biotechnological production of bulk chemicals. European Union, V Framework Program (G5MA-CT-2002-00014), (452 k€)
2002-2004	Green technologies for biosurfactants production. Spanish Government, National Research Plan (PPQ2002-03466), (86 k€)
2002-2004	New raw materials for biodiesel production. Spanish Government, National Research Plan (PPQ2002-03468), (81 k€)
2002-2003	New surfactants from glycerol. Universidad Complutense de Madrid (PR78/02-10978), (5 k€)
2002	Biodiesel production from frying oils. Comunidad de Madrid (07M/0049/2001), (47 k€)
2001-2002	Development of a biodiesel pilot plant. Spanish Government, National Research Plan (PPQ 2000-2902-E), (67 k€)
2001-2003	Demonstration plant for biodiesel production. Spanish Government, Profit Program (FIT-120301-2001-2), (499 k€)
2000-2002	Triglycerides for animal feeding. Nutreco Servicios S.A., (45 k€)
2000-2002	Green technologies for fine chemicals. Spanish Government, National Research Plan (AMB 99-0417), (85 k€)
1999-2001	Inorganic membranes for separation processes. Universidad Complutense de Madrid (PR269/98-8198), (33 k€)
1999-2001	Purification and transformation of frying oils. Comunidad de Madrid (07/M/0045/1998), (71 k€)
1996-1997	Design and simulation of industrial bioprocesses. European Union, Alfa Program (ALR/B7 3-0229.7), (5 k€)
1994-1997	Design of biochemical processes. Comunidad de Madrid (AE 265/94), (11 k€)
1994-1997	Design and simulation of integrated biochemical processes. Spanish Government, National Research Plan (BIO 94-1508-CE), (24 K€)
1994-1997	Design and simulation of integrated biochemical processes. European Union, III Framework Program (BRE2-CT94-0623), (670 k€)
1994	Synthesis of $\beta$ -hydroxy- $\alpha$ -aminoesters. Universidad Complutense de Madrid (PR179/91-3473), (48 k€)

## Publications

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### Peer-reviewed research papers

- 58 González N, Bautista LF, Simarro R, Vargas C, Salmerón A, Murillo Y, Molina MC (2020). Bacterial diversity in aqueous/sludge phases within diesel fuel storage tanks. *World J Microbiol Biotechnol* 36:180. (<https://doi.org/10.1007/s11274-020-02956-6>).
- 57 Megía-Hervás I, Sánchez-Bayo A, Bautista LF, Morales V, Witt-Sousa FG, Segura-Fornieles M, Vicente G (2020). Scale-up cultivation of *Phaeodactylum tricornutum* to produce biocrude by hydrothermal liquefaction. *Processes* 8(9):1072. (<https://doi.org/10.3390/pr8091072>).
- 56 Sánchez-Bayo A, Morales V, Rodríguez R, Vicente G, Bautista LF (2020). Cultivation of microalgae and cyanobacteria: Effect of operating conditions on growth and biomass composition. *Molecules* 25:2834. (<https://doi.org/10.3390/molecules25122834>).

- 55 Molina MC, Bautista LF, Catalá M, de las Heras MR, Martínez-Hidalgo P, San Sebastián J, González-Benítez N (2020). From laboratory tests to the ecoremedial system: the importance of microorganisms in the recovery of PPCPs-disturbed ecosystems. *Applied Sciences-Basel* 10(10):3391. (<https://doi.org/10.3390/app10103391>).
- 54 Sánchez-Bayo A, Rodríguez R, Morales V, Nasirian N, Bautista LF, Vicente G. (2020). Hydrothermal liquefaction of microalga using metal oxide catalyst. *Processes* 8(1):15. (<https://doi.org/10.3390/pr8010015>).
- 53 Sánchez-Bayo A, López-Chicharro D, Morales V, Espada JJ, Martínez F, Astals S, Vicente G, Bautista LF, Rodríguez R (2020) Biodiesel and biogas production from *Isochrysis galbana* using dry and wet lipid extraction: A biorefinery approach. *Renew Energy* 146:188-195. (<https://doi.org/10.1016/j.renene.2019.06.148>).
- 52 Mendoza A, Morales V, Sánchez-Bayo A, Rodríguez-Escudero R, González-Fernández C, Bautista LF, Vicente G. (2020) The effect of the lipid extraction method used in biodiesel production on the integrated recovery of biodiesel and biogas from *Nannochloropsis gaditana*, *Isochrysis galbana* and *Arthrospira platensis*. *Biochem Eng J* 154:107428. (<https://doi.org/10.1016/j.BEJ.2019.107428>)
- 51 Montero-Hidalgo M, Espada JJ, Rodríguez R, Morales V, Bautista LF, Vicente G (2019) Mild hydrothermal pretreatment of microalgae for the production of biocrude with a low N and O content. *Processes* 7(9):630. (<https://doi.org/10.3390/pr7090630>)
- 50 Vargas C, Simarro R, Reina JA, Bautista LF, Molina MC, González N (2019) New approach for biological synthesis of reduced graphene oxide. *Biochem Eng J* 151:107331. (<https://doi.org/10.1016/j.bej.2019.107331>).
- 49 Irimia-Vladu M, Kanbur Y, Camaioni F, Coppola ME, Yumusak C, Irimia CV, Vlad A, Operamolla A, Farinola GM, Suranna GP, González N, Molina MC, Bautista LF, Langhals H, Stadlober B, Głowacki ED, Sariciftci NS (2019) On the stability of selected hydrogen-bonded semiconductors in organic electronic devices. *Chem Mater* 31:6315-6346. (<https://doi.org/10.1021/acs.chemmater.9b01405>).
- 48 Sánchez-Bayo A, Morales V, Rodríguez R, Vicente G, Bautista LF (2019) Biodiesel production (FAEEs) by heterogeneous combi-lipase biocatalysts using wet extracted lipids from microalgae. *Catalysts* 9:296. (<https://doi.org/10.3390/catal9030296>).
- 47 Espada JJ, Pérez-Antolín D, Vicente G, Bautista LF, Morales V, Rodríguez R (2019) Environmental and techno-economic evaluation of  $\beta$ -carotene production from *Dunaliella salina*. A biorefinery approach. *Biofuels Bioprod Bioref* 14:43-54. (<https://doi.org/10.1002/bbb.2012>).
- 46 Fedeila M, Hachaïchi-Sadouk Z, Bautista LF, Simarro R, Nateche F (2018) Aerobic biodegradation of anionic surfactants by *Alcaligenes faecalis*, *Enterobacter cloacae* and *Serratia marcescens* strains isolated from industrial wastewater. *Ecotox Environ Safety* 163:629-635. (<https://doi.org/10.1016/j.ecoenv.2018.07.123>).
- 45 Martín A, Morales V, Ortiz-Bustos J, Pérez-Garnes M, Bautista LF, García-Muñoz RA, Sanz R (2018) Modelling the adsorption and controlled release of drugs from the pure and amino surface-functionalized mesoporous silica hosts. *Microporous Mesoporous Mater* 262:23-34. (<https://doi.org/10.1016/j.micromeso.2017.11.009>).
- 44 Rodríguez R, Espada JJ, Moreno J, Vicente G, Bautista LF, Morales V, Sánchez-Bayo A, Dufour J (2018) Environmental analysis of *Spirulina* cultivation and biogas production using experimental and simulation approach. *Renew Energy* 129:724-732. (<https://doi.org/10.1016/j.renene.2017.05.076>).
- 43 Bautista LF, Vargas C, González N, Molina MC, Simarro R, Salmerón A, Murillo Y (2016) Assessment of biocides and ultrasound treatment to avoid bacterial growth in diesel fuel. *Fuel Process Technol* 152:56-63. (<https://doi.org/10.1016/j.fuproc.2016.06.002>).

- 42 Molina MC, González Benítez N, Simarro R, Bautista LF, Vargas C, García-Camero JP, Díaz EM, Arrayás M, Quijano MA (2016) Bioremediation techniques for naproxen and carbamazepine elimination. Toxicity evaluation test. *Chim Oggi/Chem Today* 34:52-55.
- 41 Vasiliadou IA, Sánchez-Vázquez R, Molina R, Martínez F, Melero JA, Bautista LF, Iglesias J, Morales G (2016) Biological removal of pharmaceutical compounds using white-rot fungi with concomitant FAME production of the residual biomass. *J Environ Manage* 180:228-237. (<https://doi.org/10.1016/j.jenvman.2016.05.035>).
- 40 Bautista LF, Morales G, Sanz R (2015) Biodegradation of polycyclic aromatic hydrocarbons (PAHs) by laccase from *Trametes versicolor* covalently immobilized on amino-functionalized SBA-15. *Chemosphere* 136:273-280. (<https://doi.org/10.1016/j.chemosphere.2015.05.071>).
- 39 Mendoza A, Vicente G, Bautista LF, Morales V (2015) Opportunities for *Nannochloropsis gaditana* biomass through the isolation of its components and biodiesel production. *Green Process Synth* 4:97-102. (<https://doi.org/10.1515/gps-2014-0094>).
- 38 Melero JA, Bautista LF, Morales G, Iglesias J, Sánchez-Vázquez R (2015) Acid-catalyzed production of biodiesel over arenesulfonic SBA-15: Insights into the role of water in the reaction network. *Renew Energy* 75:425-432. (<https://doi.org/10.1016/j.renene.2014.10.027>).
- 37 Melero JA, Sánchez-Vázquez R, Vasiliadou IA, Martínez Castillejo F, Bautista LF, Iglesias J, Morales G, Molina R (2015) Municipal sewage sludge to biodiesel by simultaneous extraction and conversion of lipids. *Energy Convers Manag* 103:111-118. (<https://doi.org/10.1016/j.enconman.2015.06.045>).
- 36 Bautista LF, Vicente G, Mendoza A, González S, Morales V (2015) Enzymatic Production of biodiesel from *Nannochloropsis gaditana* microalgae using immobilized lipases in mesoporous materials. *Energy and Fuels* 29:4981-4989. (<https://doi.org/10.1021/ef502838h>).
- 35 Melero JA, Bautista LF, Iglesias J, Morales G, Sánchez-Vázquez R (2014) Production of biodiesel from waste cooking oil in a continuous packed bed reactor with an agglomerated Zr-SBA-15/bentonite catalyst. *Appl Catal B Environ* 145:197-204. (<https://doi.org/10.1016/j.apcatb.2013.02.050>).
- 34 Iglesias J, Melero JA, Bautista LF, Morales G, Sánchez-Vázquez R (2014) Continuous production of biodiesel from low grade feedstock in presence of Zr-SBA-15: Catalyst performance and resistance against deactivation. *Catal Today* 234:174-181. (<https://doi.org/10.1016/j.cattod.2014.01.004>).
- 33 Bautista LF, Vargas C, González N, Molina MC, Simarro R, Salmerón A, Murillo Y (2014) Physical and chemical treatments to prevent the growth of microorganisms in diesel fuel storage tanks. *Chim Oggi/Chem Today* 32:56-61.
- 32 Melero JA, Bautista LF, Iglesias J, Morales G, Sánchez-Vázquez R, Wilson K, Lee AF (2014) New insights in the deactivation of sulfonic modified SBA-15 catalysts for biodiesel production from low-grade oleaginous feedstock. *Appl Catal A Gen* 488:111-118. (<http://dx.doi.org/10.1016/j.apcata.2014.09.023>).
- 31 Simarro R, González N, Bautista LF, Molina MC (2013) Biodegradation of high-molecular-weight polycyclic aromatic hydrocarbons by a wood-degrading consortium at low temperatures. *FEMS Microbiol Ecol* 83:438-49. (<https://doi.org/10.1111/1574-6941.12006>).
- 30 González N, Bautista LF, Molina MC, Simarro R, Vargas C, Flores R (2013) Efecto de la concentración de surfactante y de la temperatura en la biodegradación de naftaleno, antraceno y fenantreno por *Enterobacter* sp., *Pseudomonas* sp. y *Stenotrophomonas* sp. aislados de un consorcio degradador de HAP. *An Química* 109:182-187.
- 29 Simarro R, González N, Bautista LF, Molina MC (2013) Assessment of the efficiency of in situ bioremediation techniques in a creosote polluted soil: change in bacterial community. *J Hazard Mater* 262:158-167. (<https://doi.org/10.1016/j.jhazmat.2013.08.025>).

- 28 Simarro R, González N, Bautista LF, Molina MC, Schiavi E (2012) Evaluation of the influence of multiple environmental factors on the biodegradation of dibenzofuran, phenanthrene, and pyrene by a bacterial consortium using an orthogonal experimental design. *Water, Air, Soil Pollut* 223:3437–3444. (<https://doi.org/10.1007/s11270-012-1122-8>).
- 27 Melero JA, Bautista LF, Iglesias J, Morales G, Sánchez-Vázquez R (2012) Zr-SBA-15 acid catalyst: Optimization of the synthesis and reaction conditions for biodiesel production from low-grade oils and fats. *Catal Today* 195:44–53. (<https://doi.org/10.1016/j.cattod.2012.04.025>).
- 26 González N, Simarro R, Molina MC, Bautista LF, Delgado L, Villa JA (2011) Effect of surfactants on PAH biodegradation by a bacterial consortium and on the dynamics of the bacterial community during the process. *Bioresour Technol* 102:9438–46. (<https://doi.org/10.1016/j.biortech.2011.07.066>).
- 25 Morales G, Bautista LF, Melero JA, Iglesias J, Sánchez-Vázquez R (2011) Low-grade oils and fats: effect of several impurities on biodiesel production over sulfonic acid heterogeneous catalysts. *Bioresour Technol* 102:9571–9578. (<https://doi.org/10.1016/j.biortech.2011.07.082>).
- 24 Iglesias J, Melero JA, Bautista LF, Morales G, Sánchez-Vázquez R, Andreola MT, Lizarraga-Fernández A (2011) Zr-SBA-15 as an efficient acid catalyst for FAME production from crude palm oil. *Catal Today* 167:46–55. (<https://doi.org/10.1016/j.cattod.2010.11.060>).
- 23 Simarro R, González N, Bautista LF, Sanz R, Molina MC (2011) Optimisation of key abiotic factors of PAH (naphthalene, phenanthrene and anthracene) biodegradation process by a bacterial consortium. *Water, Air, Soil Pollut* 217:365–374. (<https://doi.org/10.1007/s11270-010-0593-8>).
- 22 Vicente G, Bautista LF, Gutiérrez FJ, Rodríguez R, Martínez V, Rodríguez-Frómata RA, Ruiz-Vázquez RM, Tórrres-Martínez S, Garre V (2010) Direct transformation of fungal biomass from submerged cultures into biodiesel. *Energy & Fuels* 24:3173–3178. (<https://doi.org/10.1021/ef9015872>).
- 21 Melero JA, Bautista LF, Morales G, Iglesias J, Sánchez-Vázquez R (2010) Biodiesel production from crude palm oil using sulfonic acid-modified mesostructured catalysts. *Chem Eng J* 161:323–331. (<https://doi.org/10.1016/j.cej.2009.12.037>).
- 20 Melero JA, Bautista LF, Iglesias J, Morales G, Sánchez-Vázquez R, Suárez-Marcos I (2010) Biodiesel production over arenesulfonic acid-modified mesostructured catalysts: optimization of reaction parameters using response surface methodology. *Top Catal* 53:795–804. (<https://doi.org/10.1007/s11244-010-9465-0>).
- 19 Bautista LF, Morales G, Sanz R (2010) Immobilization strategies for laccase from *Trametes versicolor* on mesostructured silica materials and the application to the degradation of naphthalene. *Bioresour Technol* 101:8541–8548. (<https://doi.org/10.1016/j.biortech.2010.06.042>).
- 18 Melero JA, Bautista LF, Morales G, Briones D (2009) Biodiesel production with heterogeneous sulfonic acid-functionalized mesostructured catalysts. *Energy & Fuels* 23:539–547. (<https://doi.org/10.1021/ef8005756>).
- 17 Molina MC, González N, Bautista LF, Sanz R, Simarro R, Sanz JL (2009) Isolation and genetic identification of PAH degrading bacteria from a microbial consortium. *Biodegradation* 20:789–800. (<https://doi.org/10.1007/s10532-009-9267-x>).
- 16 Bautista LF, Vicente G, Rodríguez R, Pacheco M (2009) Optimisation of FAME production from waste cooking oil for biodiesel use. *Biomass and Bioenergy* 33:862–872. (<https://doi.org/10.1016/j.biombioe.2009.01.009>).
- 15 Bautista LF, Sanz R, Molina MC, González N, Sánchez D (2009) Effect of different non-ionic surfactants on the biodegradation of PAHs by diverse aerobic bacteria. *Int Biodeterior Biodegradation* 63:913–922. (<https://doi.org/10.1016/j.ibiod.2009.06.013>).

- 14 Vicente G, Bautista LF, Rodríguez R, Gutiérrez FJ, Sádaba I, Ruiz-Vázquez RM, Tórres-Martínez S, Garre V (2009) Biodiesel production from biomass of an oleaginous fungus. *Biochem Eng J* 48:22–27. (<https://doi.org/10.1016/j.bej.2009.07.014>).
- 13 Bautista LF, Casillas JL, Martínez M, Aracil J (2006) Functionalized adsorbents for the purification of cephalosporin C and deacetylcephalosporin C. *Ind Eng Chem Res* 45:3230–3236. (<https://doi.org/10.1021/ie051221m>).
- 12 Soriano R, Bautista LF, Martínez M, Aracil J (2003) Use of a diffusion model for mono- and bicomponent anion-exchange of two isoenzymes of glucoamylase from *Aspergillus niger* in a fixed bed. *Biotechnol Prog* 19:1283–1291. (<https://doi.org/10.1021/bp0340133>).
- 11 Bautista LF, Plata MM, Aracil J, Martínez M (2003) Application of an effective diffusion model to the adsorption of aspartame on functionalised divinylbenzene–styrene macroporous resins. *J Food Eng* 59:319–325. ([https://doi.org/10.1016/S0260-8774\(02\)00479-X](https://doi.org/10.1016/S0260-8774(02)00479-X)).
- 10 Bautista LF, Martínez M, Aracil J (2003) Adsorption of alpha-amylase in a fixed bed: operating efficiency and kinetic modeling. *AIChE J* 49:2631–2641. (<https://doi.org/10.1002/aic.690491016>).
- 9 Soriano R, Bautista LF, Martínez M, Aracil J (2002) Kinetic modeling of the anion-exchange process of glucoamylases I and II from *Aspergillus niger* in batch stirred tank. *Sep Sci Technol* 37:61-75. (<https://doi.org/10.1081/SS-120000321>).
- 8 Bautista LF, Pinilla J, Aracil J, Martínez M (2002) Adsorption isotherms of aspartame on commercial and chemically modified divinylbenzene-styrene resins at different temperatures. *J Chem Eng Data* 47:620-627. (<https://doi.org/10.1021/je010325a>).
- 7 Bautista LF, Aleksenko A, Hentzer M, Santerre-Henriksen A, Nielsen J (2000) Antisense silencing of the *creA* gene in *Aspergillus nidulans*. *Appl Environ Microbiol* 66:4579-4581. (<https://doi.org/10.1128/AEM.66.10.4579-4581.2000>).
- 6 Bautista LF, Martínez M, Aracil J (2000) Modeling of the adsorption of alpha-amylase in batch stirred tank. *Ind Eng Chem Res* 39:4320–4325. (<https://doi.org/10.1021/ie000262+>).
- 5 Bautista LF, Martínez M, Aracil J (1999) Adsorption equilibrium of alpha-amylase in aqueous solutions. *AIChE J* 45:761–768. (<https://doi.org/10.1002/aic.690450411>).
- 4 Soriano R, Bautista LF, Martínez M, Aracil J (1999) Adsorption isotherms of the *Aspergillus niger* glucoamylases I and II on the anionic exchanger DEAE-Toyopearl 650. *J Chem Technol Biotechnol* 74:199-203. ([https://doi.org/10.1002/\(SICI\)1097-4660\(199903\)74:3<199::AID-JCTB42>3.0.CO;2-B](https://doi.org/10.1002/(SICI)1097-4660(199903)74:3<199::AID-JCTB42>3.0.CO;2-B)).
- 3 Bautista LF, Soriano R, Martínez M, Aracil J (1997) Comparative study of the adsorption of  $\alpha$ -amylase for HIC and IEC using the HPLC technique. *LC GC Eur* 10:431-434.
- 2 Bautista LF, Martínez M, Aracil J (1997) Optimization of a process for the synthesis of a sperm whale oil analogue. *Chem Eng Technol* 20:287–292. (<https://doi.org/10.1002/ceat.270200411>).
- 1 Bautista LF, Rubio B (1991) Fraccionamiento de betunes asfálticos mediante cromatografía en capa fina (TLC/FID). *Carreteras* 51:21-32.

## Books

1. Bautista LF (2003) Purificación de  $\alpha$ -amilasa de *Aspergillus oryzae* por adsorción (*Ph.D. Thesis*). Editorial Complutense, Madrid, Spain (ISBN: 9788466916264).

## Book chapters

5. Molina MC, Bautista LF, Belda I, Carmona M, Díaz E, Durante-Rodríguez G, García-Salgado S, López-Asensio J, Martínez-Hidalgo P, Quijano MA, White JF, García LS, González N. (2019) Bioremediation of soil contaminated with arsenic, pp. 321-351. In: *Microbes and enzymes in soil health and bioremediation*. Springer Nature, Singapore (ISBN: 9789811391163)
4. Bautista LF, Vicente G, Garre V (2012) Biodiesel from microbial oil. In: *Advances in biodiesel production: processes and technologies*. Woodhead Publishing Ltd., Cambridge, UK (ISBN: 0857091174).
3. Soriano R, Bautista LF, Escobedo JF, Martínez M, Aracil J (2000) Use of anion exchangers for the separation of two isoenzymes of glucoamylase from *Aspergillus niger*. In: *Ion exchange at the millennium*. Imperial College Press, London, UK (ISBN: 1860942326).
2. Bautista LF, Ferrari F, García E, Martínez M, Aracil J (2000) Valorisation of vegetable oils: product development using chemical and biochemical processes. In: *Chemical technical utilisation of vegetable oils*. Fachagentur Nachwachsende Rohstoffe, Bonn, Germany (ISBN: 3000069593).
1. Bautista LF, Martínez M, Aracil J (1998) Kinetics of ion-exchange adsorption of  $\alpha$ -amylase. In: *Fundamentals of adsorption*. Elsevier, Paris, France (ISBN: 9782842990534).

## Patents

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2. Simarro R, Bautista LF, Vargas C, González N, Molina MC, Díaz EM, Reina JA. Biological process for obtaining reduced graphene oxide, through the use of microorganisms (20 May, 2019). ES 2695310 B2. Priority date: 28 June, 2017.
1. Aracil J, Martínez M, Bautista LF, Guijarro MI. Transesterification of triglycerides with low molecular weight monoalcohols to obtain esters of light alcohols using mixed catalysts (2 March, 2006). ES 2194598 B2, EP1477551, WO03062358. Priority date: 25 January, 2002.

## Congresses

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- 94 Development of Advanced Microalgae Technologies for a Circular Economy. Workshop: Genetic modification tools in cyanobacteria and microalgae. 29 October 2020, Madrid, Spain (Invited Lecture).
- 93 Degradation of clopidogrel by *Pseudomonas* spp. strain isolated from Algerian wastewater. 1<sup>st</sup> International Conference on Water, Energy and Environmental Nexus (WEEN-2019). 5-8 September 2019, Istanbul, Turkey (Poster).
- 92 Biorefinery process for hydrothermal liquefaction of *Phaeodactylum tricornutum*. 27<sup>th</sup> European Biomass Conference & Exhibition (EUBCE 2019). 27-30 May 2019, Lisbon, Portugal. (Poster).
- 91 Production of biofuels and bioproducts from microalgae using ionic liquid-based processes. 27<sup>th</sup> European Biomass Conference & Exhibition (EUBCE 2019). 27-30 May 2019, Lisbon, Portugal. (Poster).
- 90 Optimisation of *Chlorella vulgaris* hydrothermal liquefaction for biocrude upgrading. 27<sup>th</sup> European Biomass Conference & Exhibition (EUBCE 2019). 27-30 May 2019, Lisbon, Portugal. (Poster).
- 89 Kinetics of hydrothermal liquefaction of *Nannochloropsis* sp. 27<sup>th</sup> European Biomass Conference & Exhibition (EUBCE 2019). 27-30 May 2019, Lisbon, Portugal. (Poster).
- 88 Optimisation of *Nannochloropsis gaditana* hydrothermal liquefaction to upgrade biocrude. 27<sup>th</sup> European Biomass Conference & Exhibition (EUBCE 2019). 27-30 May 2019, Lisbon, Portugal. (Poster).

- 87 Environmental and techno-economic evaluation of  $\beta$ -carotene production from *Dunaliella salina*. A biorefinery approach. 4<sup>th</sup> Iberoamerican Congress on Biorefineries (4-CIAB). 24-26 October 2018, Jaén, Spain. (Poster)
- 86 Optimal conditions for two-step hydrothermal liquefaction (HTL) of microalgae. 2<sup>nd</sup> International Conference on Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability (BIORESTEC). 16-19 September 2018, Sitges, Spain. (Poster).
- 85 Bio-oil production by hydrothermal liquefaction of microalga *Nannochloropsis gaditana* with homogenous and heterogeneous catalysts. 2<sup>nd</sup> International Conference on Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability (BIORESTEC). 16-19 September 2018, Sitges, Spain. (Poster).
- 84 Selection of microalga strains for biofuels production under different photoperiods. 2<sup>nd</sup> International Conference on Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability (BIORESTEC). 16-19 September 2018, Sitges, Spain. (Poster).
- 83 Producción de biodiésel (FAEEs) a partir de microalgas mediante catálisis enzimática heterogénea. XXVI Congresso Ibero-Americano de Catálise (CICAT2018). 9-14 October 2018, Coimbra, Portugal. (Oral)
- 82 Extracción de carotenoides a partir de *Nannochloropsis gaditana*. Aprovechamiento Alimentario de las Microalgas (Workshop Inspira1). 2 July 2018, Madrid, Spain. (Poster)
- 81 Arsenic resistance of plant-microbes association as a tool to restored contaminated environments. 7<sup>th</sup> Congress of European Microbiologists (FEMS2017). 9-13 July 2018, Valencia, Spain. (Poster)
- 80 Hydrothermal liquefaction of model compounds for microalgae bio-oil production. 10<sup>th</sup> World Congress of Chemical Engineering. 1-5 October 2017, Barcelona, Spain. (Poster)
- 79 Growth of *Arthrospira maxima*, *Chlorella vulgaris*, *Isochrysis galbana* and *Nannochloropsis gaditana*: A study on the effect of variables and microalgae biomass composition. 7<sup>th</sup> International Conference on Algal Biomass, Biofuels and Bioproducts. 18-21 June 2017, Miami, USA. (Poster)
- 78 Evaluation of aerobic biodegradation of linear-chain alkyl benzene sulfonate (LAS) by isolated microbial consortium. Bioreactors Symposium 2017. 15-16 May 2017, Villeneuve d'Ascq, France. (Poster)
- 77 Metaorganism (plant-rhizosphere-endosphere) as phytoremediation strategy for arsenic contaminated soils. Meeting on New Strategies in Bioremediation Processes (BioRemid-2017). 9-10 March 2017, Granada, Spain. (Oral)
- 76 Bio-oil production of microalgae through hydrothermal liquefaction process. AlgaEurope 2016. 13-15 December 2016, Madrid, Spain. (Poster)
- 75 Simulation and environmental analysis of biogas and biodiesel production from *Spirulina* (*Arthrospira maxima*) using a bio-refinery approach. 1<sup>st</sup> International Conference Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability. 23-26 October 2016, Sitges, Spain. (Poster)
- 74 Hydrothermal liquefaction of microalgae for bio-oil production. 1<sup>st</sup> International Conference Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability. 23-26 October 2016, Sitges, Spain. (Oral)
- 73 Lixiviación de vidrios de silicofosfato y borofosfato y su aplicación al cultivo de la microalga *Arthrospira maxima*. LV Congreso de la Sociedad Española de Cerámica y Vidrio. 5-7 October 2016, Seville, Spain. (Poster)

- 72 Producción de ésteres metílicos y etílicos de ácidos grasos (FAMES y FAEEs) a partir de la microalga *Nannochloropsis. gaditana* mediante catálisis ácida heterogénea. II Encuentro de Jóvenes Investigadores de la SECAT. 27-29 June 2016, Ciudad Real, Spain. (Oral)
- 71 Variables affecting growth of *Spirulina (Arthrospira maxima)*. Biomass Resources for Renewable Energy Production. 2-3 June 2016, Móstoles, Spain. (Poster)
- 70 Biogas production from *Spirulina maxima*: environmental and energy feasibility. Biomass Resources for Renewable Energy Production. 2-3 June 2016, Móstoles, Spain. (Oral)
- 69 Eliminación de PPCPs mediante técnicas de biorremediación. Valoración de la toxicidad tras el ensayo. I Congreso Internacional Desafíos del Derecho del Aguas. 5-6 November 2015, Murcia, Spain. (Oral)
- 68 *In-Situ* transformation of municipal sewage sludge into biodiesel. International Congress and Expo on Biofuels & Bioenergy. 25-27 August 2015, Valencia, Spain. (Oral)
- 67 Producción de ésteres etílicos de ácidos grasos (FAEE) mediante catálisis enzimática heterogénea. Congreso de la Sociedad Española de Catálisis 2015 (SECAT 2015). 13-15 July, 2015, Barcelona, Spain. (Oral)
- 66 Optimization and characterization of biodiesel synthesized by biocatalysts supported on mesoporous material from microalgae oil. 6<sup>th</sup> Czech-Italian-Spanish Conference on Molecular Sieves and Catalysis (CIS-6). 14-17 June 2015, Amantea, Italy. (Poster)
- 65 Acid heterogeneous catalysts for biodiesel production from oleaginous microorganisms. 6<sup>th</sup> Czech-Italian-Spanish Conference on Molecular Sieves and Catalysis (CIS-6). 14-17 June 2015, Amantea, Italy. (Poster)
- 64 Intimate coupling of wastewater treatment and biodiesel production. 7<sup>th</sup> European Meeting on Chemical Industry and Environment (EMChIE 2015). 10-12 June 2015, Tarragona, Spain. (Oral)
- 63 Bacterial identification and assessment of treatments to avoid microbial growth in diesel fuel storage tanks. 10<sup>th</sup> International Colloquium Fuels (Technische Akademie Esslingen). 20-22 January 2015, Stuttgart, Germany. (Oral)
- 62 Utilization of spent biomass after biodiesel production from microalgae in aquaculture. International Conference on Green Chemistry and Sustainable Engineering. 29-31 July 2014, Barcelona, Spain. (Poster)
- 61 Joint production of biodiesel and biogas using spent biomass from microalgae. International Conference on Green Chemistry and Sustainable Engineering. 29-31 July 2014, Barcelona, Spain. (Poster)
- 60 Comparison of acid and enzymatic catalysts for biodiesel production with ethanol from microalgae. II International Congress of Chemical Engineering (ANQUE). 1-4 July 2014, Madrid, Spain. (Oral)
- 59 Biobased fuels and products from oleaginous microorganisms. Widen opportunities for the biorefinery concept. II International Congress of Chemical Engineering (ANQUE). 1-4 July 2014, Madrid, Spain. (Oral Keynote)
- 58 Valorization of sewage sludge for biodiesel production. II International Congress of Chemical Engineering (ANQUE). 1-4 July 2014, Madrid, Spain. (Oral)
- 57 Biocatalytic production of lactose esters catalyzed by mesoporous materials immobilized lipases. 5<sup>th</sup> International Congress on Biotechnology. 25-27 June 2014, Valencia, Spain. (Poster)
- 56 Sustainable alternative for biodiesel production from oleaginous microorganisms using enzyme catalysts. Catalysis of Biomass. 8-11 June 2014, Lublice, Czech Republic. (Oral)

- 55 Biocatalytic production of biodiesel from oleaginous microorganisms. 4th International Congress on Green Process Engineering 2014 (GPE 2014). 7-10 April 2014, Seville, Spain. (Poster)
- 54 Fatty acid methyl and ethyl esters from microalgae using immobilized lipases. Utilisation of Biomass for Sustainable Fuels & Chemicals (Ubiochem IV). 14-16 October 2013, Valencia, Spain. (Poster)
- 53 Agglomerated Zr-SBA-15: Biodiesel production from low-grade oils and fats in a continuous packed bed reactor. 2<sup>nd</sup> International Congress on Catalysis for Biorefineries (CatBior 2013). 22-25 September 2013, Dalian, China. (Oral)
- 52 Diseño de catalizadores ácidos heterogéneos tolerantes a la presencia de impurezas para la producción de biodiésel de segunda generación. Congreso de la Sociedad Española de Catálisis 2013 (SECAT 2013). 26-28 June 2013, Seville, Spain. (Oral)
- 51 Sustainable routes for the production of energy-dense oxygenated biofuels from lignocellulosic biomass. Workshop "Últimos avances en la producción de combustibles limpios a partir de residuos agroforestales y oleaginosos". 23-24 May 2013, Móstoles, Spain. (Poster)
- 50 Prevención de riesgos y seguridad laboral en áreas contaminadas con HAP. 11<sup>o</sup> Congreso Internacional de Prevención de Riesgos Laborales (ORP2013). 3-5 April 2013, Santiago de Chile, Chile. (Poster)
- 49 Biodiesel from spent coffee grounds: oil extraction and transformation with solid acid catalysts. 7<sup>th</sup> International Conference on Environmental Catalysis (ICEC 2012). 2-6 September 2012, Lyon, France. (Oral)
- 48 Continuous production of biodiesel from low grade feedstock in a fixed bed reactor by heterogeneous acid catalysis. Advances in Catalysis for Biomass Valorization (Cat4Bio). 8-11 July 2012, Thessaloniki, Greece. (Poster)
- 47 Selective dehydration of xylose to furfural over sulfonic acid heterogeneous catalysts in DMSO. Catalysis for Clean Energy and Sustainable Chemistry (CCESC 2012). 27-29 June 2012, Madrid, Spain. (Poster)
- 46 Zr-SBA-15 acid catalyst: Optimization of the synthesis and operating conditions for biodiesel production from low-grade oils and fats. 1<sup>st</sup> International Congress on Catalysis for Biorefineries (CatBior). 2-5 October 2011, Málaga, Spain. (Oral)
- 45 Assessment of bioremediation techniques (biostimulation, bioaugmentation and natural attenuation) in a creosote polluted soil and restoration of the microbial community. 15<sup>th</sup> International Biodegradation and Biodeterioration Symposium (IBBS-15). 19-24 September 2011, Viena, Austria. (Oral)
- 44 Effect of surfactants on PAH biodegradation process by a bacterial consortium and dynamics of the bacterial community during the process. 15<sup>th</sup> International Biodegradation and Biodeterioration Symposium (IBBS-15). 19-24 September 2011, Viena, Austria. (Poster)
- 43 Biodegradation of high molecular weight PAHs under cold and warm temperatures. XXIII Congreso Nacional de Microbiología. 11-14 July 2011, Salamanca, Spain. (Poster)
- 42 Modified sulfonic acid-functionalised SBA-15 as robust catalyst for the processing of FFA/water-containing feedstocks for biodiesel production. 5th International FEZA Conference (FEZA 2011). 3-7 July 2011, Valencia, Spain. (Poster)
- 41 Producción de biodiesel a partir de materias primas de bajo coste mediante catálisis ácida heterogénea. Congreso de la Sociedad Española de Catálisis 2011 (SECAT'11). 29 June-1 July 2011, Zaragoza, Spain. (Poster)

- 40 Acid heterogeneous catalysts for FAME production using low-cost oleaginous feedstock. Use of agro-forest and oily residues to produce clean transportation fuels (Workshop ResToEne). 8-10 June 2011, Madrid, Spain. (Oral)
- 39 Biodiesel production from low-cost feedstocks using heterogeneous acid catalysis. 17<sup>th</sup> Rideal Conference. 19-21 April 2011, Cardiff, UK. (Oral)
- 38 Zirconia-silica mixed mesostructured oxides as catalysts for biodiesel. 2<sup>nd</sup> International Conference on Multifunctional, Hybrid and Nanomaterials (Hybrid Materials 2011). 6-10 March 2011, Strasbourg, France. (Poster)
- 37 Optimización del proceso directo de producción de biodiésel a partir del hongo *Mucor circinelloides*. III Congreso de Microbiología Industrial y Biotecnología Microbiana. 17-19 November 2010, Alcalá de Henares, Spain. (Poster)
- 36 Zr-SBA-15 and related materials. Efficient acid catalysts for biodiesel production from FFA-containing feedstocks. Engineering of New Micro- and Mesostructured Materials (IZC16 & IMMS7). 4-9 July 2010, Sorrento, Italy. (Poster)
- 35 Zr-SBA-15: Acid catalyst for biodiesel production. Utilisation of Biomass for Sustainable Fuels & Chemicals (Ubiochem I). 13-15 May 2010, Córdoba, Spain. (Poster)
- 34 Optimization of reaction conditions for crude palm oil methanolysis using arenesulfonic acid-modified mesostructured catalysts. 2<sup>nd</sup> International Congress on Biodiesel. The Science and the Technologies. 15-17 November 2009, Munich, Germany. (Poster)
- 33 Biodegradación de HAPs de alto peso molecular a bajas temperaturas. XXII Congreso de la Sociedad Española de Microbiología. 21-24 September 2009, Almería, Spain. (Oral)
- 32 Estudio y optimización de factores abióticos y descripción de poblaciones microbianas implicadas en procesos de biorremediación de suelos contaminados por hidrocarburos aromáticos policíclicos. XXII Congreso de la Sociedad Española de Microbiología. 21-24 September 2009, Almería, Spain. (Oral Keynote)
- 31 Biodiesel production over sulfonic acid-modified mesoporous silica catalysts. 6<sup>th</sup> World Congress on Catalysis by Acids and Bases (ABC-6). 10-14 May 2009, Geneve, Italy. (Oral Keynote)
- 30 Catalizadores ácidos mesoestructurados con grupos sulfónico para la producción de biodiésel. Congreso de la Sociedad Española de Catálisis 2009 (SECAT'09). 29 June-1 July 2009, Ciudad Real, Spain. (Oral)
- 29 Isolation and genetic identification of PAH degrading microorganisms. 14<sup>th</sup> International Biodeterioration and Biodegradation Symposium (IBBS-14). 6-10 October 2008, Messina, Italy. (Poster)
- 28 Cultivated bacterial community dynamics during polycyclic aromatic hydrocarbon degradation. 14<sup>th</sup> International Biodeterioration and Biodegradation Symposium (IBBS-14). 6-10 October 2008, Messina, Italy. (Oral)
- 27 Effect of different non-ionic surfactants on the biodegradation of PAH by diverse bacteria isolated from hydrocarbon polluted soils. 14<sup>th</sup> International Biodeterioration and Biodegradation Symposium (IBBS-14). 6-10 October 2008, Messina, Italy. (Oral)
- 26 Inmovilización de laccasa sobre materiales mesoestructurados. Evaluación de la actividad enzimática en la oxidación de fenol y degradación de naftaleno. XXI Simposio Iberoamericano de Catálisis (SICAT 2008). 22-27 June 2008, Benalmádena, Spain. (Poster)
- 25 Producción de biodiésel a partir de biomasa del hongo *Mucor circinelloides* sin extracción previa de lípidos. VI Reunión del Grupo de Microbiología Industrial y Biotecnología Microbiana de la SEM (CMIBM2008). 12-14 November 2008, Barcelona, Spain. (Oral)

- 24 Adsorption of indole-3-acetic acid derivatives by hydrophobic interaction chromatography. 7<sup>th</sup> World Congress of Chemical Engineering. 10-14 July 2005, Glasgow, UK. (Poster)
- 23 Estudio de la purificación por adsorción del ácido 6-aminopenicilánico. Congreso Nacional de Biotecnología (Biotec'2004). 19-23 July 2004, Oviedo, Spain. (Poster)
- 22 Purification process of 6-aminopenicillanic acid and phenylacetic acid by simultaneous adsorption in a fixed bed. Fundamentals of Adsorption (FOA 8). 23-28 May 2004, Sedona, USA. (Poster)
- 21 Biodiesel: current trends and technical developments in Spain. 25<sup>th</sup> World Congress of the International Society for Fat Research. 12-15 October 2003, Bordeaux, France. (Oral)
- 20 Adsorption of phenol and cresols on a polymeric hydrophobic resin. IV Congress on Added Value and Recycling of Industrial Waste. 24-27 June 2003, L'Aquila, Italy. (Poster)
- 19 Integrated process for Biodiesel production using different raw materials. 9<sup>th</sup> Mediterranean Congress of Chemical Engineering. 26-29 November 2002, Barcelona, Spain. (Poster)
- 18 Removal of phenolic compounds in aqueous solution. Thermodynamic and kinetic study of the monocomponent adsorption. 9<sup>th</sup> Mediterranean Congress of Chemical Engineering. 26-29 November 2002, Barcelona, Spain. (Poster)
- 17 Estimation of design parameters for the separation of 6-aminopenicillanic acid and phenylacetic acid by hydrophobic adsorption. International Congress on the Process Industries. 18-20 March 2002, Mexico City, Mexico. (Poster)
- 16 Kinetic modeling of the adsorption of aspartame on functionalised XAD-2 resins in batch stirred tank. 5<sup>th</sup> International Symposium on Biocatalysis and Biotransformation (BioTrans 2001). 2-7 September 2001, Darmstadt, Germany. (Poster)
- 15 Modeling of the adsorption kinetics of aspartame in a fixed bed using functionalized resins. 6<sup>th</sup> World Congress of Chemical Engineering. 18-21 September 2001, Melbourne, Australia. (Oral)
- 14 Purification of indole-3-acetic acid from *Rhizobium sp.* by adsorption on a hydrophobic resin. 3<sup>rd</sup> European Symposium on Biochemical Engineering Science (ESBES-3). 10-13 September 2000, Copenhagen, Denmark. (Poster)
- 13 Use of anion exchangers for the separation and purification of two isoenzymes of glucoamylase from *Aspergillus niger*. Ion Exchange at the Millenium (IEX2000). 16-21 July 2000, Cambridge, UK. (Oral)
- 12 Valorisation of vegetable oils. Product development using chemical and biochemical processes. Biotechnology and Industrial Utilisation of Vegetable Oils. 20-21 June 2000, Bonn, Germany. (Poster)
- 11 Study of the immobilization of glucoamylase I from *Aspergillus niger* on the anion exchanger DEAE-Toyopearl 650 and its use as biocatalyst. 8<sup>th</sup> Mediterranean Congress of Chemical Engineering. 10-12 November 1999, Barcelona, Spain. (Poster)
- 10 Partial derepression of heterologous  $\alpha$ -amylase gene in a strain of *Aspergillus nidulans* expressing antisense *creA* RNA. Danish Biotechnology Conference V. 20-21 May 1999, Vejle, Denmark. (Poster)
- 9 Transcription of antisense *creA* RNA in *Aspergillus nidulans* causes partial derepression of *creA*-controlled genes. 20<sup>th</sup> Fungal Genetics Conference. 23-28 March 1999, Pacific Grove, USA. (Poster)
- 8 Adsorption isotherms of the *Aspergillus niger* glucoamylases I and II on the anion-exchanger DEAE-Toyopearl 650. 4<sup>th</sup> International Conference on Separations for Biotechnology. 29-31 March 1999, Reading, UK. (Oral)

- 7 Study of the adsorption and desorption of the isoenzymes of glucoamylase using an ion-exchanger in a packed bed. 4<sup>th</sup> International Conference on Separations for Biotechnology. 29-31 March 1999, Reading, UK. (Poster)
- 6 Phenomenological modelling of chromatographic processes in biotechnology. International Symposium on Preparative and Industrial Chromatography and Allied Techniques (SPICA 98). 23-25 September 1998, Strasbourg, France. (Oral)
- 5 Kinetics of ion-exchange adsorption of  $\alpha$ -amylase. Fundamentals of Adsorption (FOA6). 24-28 May 1998, Presqu'île de Giens, France (Oral)
- 4 Determination of design parameters for the adsorption of  $\alpha$ -amylase in a fixed-bed. 7<sup>th</sup> Mediterranean Congress of Chemical Engineering. 22-24 October 1996, Barcelona, Spain. (Poster)
- 3 Process synthesis, design and simulation of integrated biochemical processes. 5<sup>th</sup> World Congress of Chemical Engineering. 14-18 July 1996, San Diego, USA. (Poster)
- 2 Modelling of hydrophobic and ion-exchange adsorption of  $\alpha$ -amylase. 5<sup>th</sup> World Congress of Chemical Engineering. 14-18 July 1996, San Diego, USA. (Poster)
- 1 Optimización de la síntesis de análogos de ésteres naturales utilizando catalizadores ácidos. Reunión Anual del Grupo Especializado de Catálisis (RAGEC'91). 1-5 July 1991, Bilbao, Spain. (Oral)

## Mentoring and supervision

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### PhD Students

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|--------------|--|
| 2020-ongoing | Antonio Álvarez Pozo. <i>PhD</i> project on "Good practices to avoid delays and costs overrun in industrial projects. UPM.   |
| 2019-ongoing | Jennifer Sánchez Laso. <i>PhD</i> project on "Valorisation of microalgal biomass". URJC.   |
| 2016-2019    | Alejandra Sánchez-Bayo Álvarez. <i>PhD</i> . Thesis "Microalga biorefinery for biofuel production". URJC (29 April, 2019). Qualification: <i>Summa cum Laude</i> . Award "Best <i>PhD</i> Thesis on Engineering 2019", URJC. Award "Best <i>PhD</i> Thesis 2020", Smart Energy International Excellence Campus URJC-UAH. |
| 2016-2019    | Mourad Fedela. <i>PhD</i> . Thesis "Study of the biodegradation of organic pollutants in domestic and/or industrial wastewaters University of Science and Technology-Houari Boumediene, Algeria (19 March 2019). Qualification: <i>Summa cum Laude</i> .   |
| 2013-2017    | Álvaro Mendoza Sevilla. <i>PhD</i> . Thesis "Study of a biorefinery from oleaginous microorganisms". URJC (30 June 2017). Qualification: <i>Summa cum Laude</i> .  |
| 2011         | Nicklas Bengtsson. <i>PhD</i> . Thesis "Photocatalytic contaminant abatement by TiO <sub>2</sub> enriched construction materials: from a parametric study to an attempt to predict the photocatalytic activity". URJC (22 July 2011). Qualification: <i>Summa cum Laude</i> .  |
| 2008-2013    | Rebeca Sánchez-Vázquez. <i>PhD</i> . Thesis "Design of heterogeneous acid catalysts for the production of second-generation biodiesel". URJC (6 May 2013). Qualification: <i>Summa cum Laude</i> .   |
| 2000-2004    | Juan Francisco Escobedo Robles. <i>PhD</i> . Thesis "Purification and immobilization of glucoamylase of <i>Aspergillus niger</i> and its use as bioreactor". UCM (26 November 2004). Qualification: <i>Summa cum Laude</i> .   |

### Researchers and Technicians

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|------|---|
| 2020 | Alejandro Piera Ruiz (Pre-doctoral). Research on the extraction of high-added value products from microalgal biomass. |
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- 2019-2020 Pilar Águila Carricondo (Pre-doctoral). Research on synthesis of enzyme-based biocatalysts.
- 2019-ongoing Jorge William Parra Tauriz (Laboratory Technician).
- 2017-2020 Miriam Montero Hidalgo (Pre-doctoral). Research on hydrothermal liquefaction of microalgal biomass.
- 2006-2010 Antonio Alcázar Martínez (Pre-doctoral). Research on green diesel synthesis from vegetable oils and animal fats.
- 2005-2008 Raquel Sanz Ortega (Pre-doctoral). Research on biodegradation of PAH using bacteria and enzymes.

### Master Students

- 2009-ongoing 9 Master Thesis supervised, corresponding to Master in Chemical Engineering, Master in Energy Technologies and Resources and Master in Chemical and Environmental Process Engineering.

### Undergraduate Students

- 1998-ongoing 65 Final Year Projects supervised, corresponding to Degrees in Chemical Engineering, Environmental Engineering, Energy Engineering, Industrial Engineering, Environmental Sciences, and Biology.

## Teaching

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Teaching in two Universities: Complutense University of Madrid (1996-2004) and Rey Juan Carlos University (2004-continue) at Undergraduate, Master and Doctorate level.

### Undergraduate

- 2020-ongoing Applied informatics (Degree in Environmental Engineering, URJC).
- 2012-ongoing Remediation technologies for polluted soils (Degree in Environmental Engineering, URJC).
- 2012-ongoing Transport of pollutants: modelling and associated environmental risks (Degree in Environmental Engineering, URJC).
- 2011-ongoing Food biotechnology (Degree in Food Science and Technology, URJC).
- 2010-2014 Chemical engineering (Degree in Energy Engineering, URJC).
- 2004-2012 Management and conservation of soils and waters (Degree in Environmental Sciences, URJC).
- 2004-2009 Air pollution (Degree in Environmental Sciences, URJC).
- 2004-2017 Separation processes (Degree of Chemical Engineering, URJC).
- 2001-2004 Chemical engineering (Degree of Chemistry, UCM).
- 2000-2003 Process control (Degree in Chemical Engineering, UCM).
- 1999-2002 Applied chemical thermodynamics (Degree in Chemical Engineering, UCM).
- 1999-2004 Control & instrumentation for biological processes (Degree in Chemical Engineering, UCM).
- 1997-2004 Introduction to research (Degree in Chemical Engineering, UCM).
- 1997-2004 Research project (Degree in Chemical Engineering, UCM).
- 1997-2002 Chemical reactors (Degree in Chemical Engineering, UCM).

- 1997-1998 Control & instrumentation (Degree of Chemistry, UCM).  
1996-2001 Chemical kinetics engineering (Degree in Chemical Engineering, UCM).  
1996-1997 Chemical reactor engineering (Degree of Chemistry, UCM).  
1994-2004 Experimental design (Degree in Chemical Engineering, UCM).

**Master**

- 2013-ongoing Industrial and environmental biotechnology (Master in Chemical Engineering, URJC).  
2009-2012 Environmental biotechnology (Master in Chemical and Environmental Engineering, URJC)  
2009-2010 Pollution treatment by biological processes (Master in Environmental Science and Technology, URJC).  
2006-2010 Fossil fuels: reservoirs, prospection and extraction (Master in Energy Technology and Resources, URJC)

**Doctoral**

- 2014-ongoing Advanced experimental design (Doctoral program in Industrial Technologies: Chemical, Environmental, Energy, Electronic, Mechanic and Materials, URJC).  
2006-2008 Catalysis for energy and environment (Doctoral program in Chemical, Environmental and Materials Engineering, URJC)  
2000-2004 Methodology and development of fine chemicals (Doctoral program in Chemical Engineering, UCM).