Prof. Josè Juan Santana Rodriguez

Department of Chemistry, University of Las Palmas de Gran Canaria, 35017 Las Palmas de Gran Canaria, Spain. E-mail: josejuan.santana@ulpgc.es

Curriculum Vitae

Dr. José Juan Santana Rodríguez is Professor of Analytical Chemistry at the University of Las Palmas de Gran Canaria (ULPGC) since 1998. His PhD was obtained at the University of La Laguna (Spain) (1984) with post-doc stays at the University of Florence (Italy) (1986) and University of Florida (USA) (1990-1991).His teaching activity has been developed at the University of La Laguna (Spain) since 1981 to 1984 and at the University of Las Palmas de Gran Canaria since 1985. Also has taught in the Masters of Coastal Management and Oceanography of the ULPGC. He has been Director of the Master and Doctorate of Coastal Management of the same University. He is Erasmus Program Academic Coordinator for University of Bologna (Italy), Charles University (Czech Republic), University of Coimbra (Portugal), Comenius University (Slovakia) and Pomeranian University (Poland). He has been Invited Professor at the University of Paris 7 (France), Comenius University (Slovakia), Brunel University (United Kingdom), West University of Timisoara (Romania), Institute of Chemical Technology (Czech Republic), Pomeranian University (Poland), University of Sao Paulo (Brasil), University of Florence (Italy), University of Milano (Italy) and University of Technology Sydney (Australia). He is author/co-author of more than 158 scientific articles in indexed journals, of 240 communications to international and national Congresses, 1 book and 12 book chapters. He has also been Principal Investigator or Investigator of 23 Research Projects in the european, national and regional ambits, Supervisor of 13 Doctoral Thesis (6 European Doctorate and 6 awarded with UPLGC Prize) and Supervisor of 21 master and PhD students and postdoc researchers. He is referee of more than 55 international scientific journals and of several international and national Evaluation Agencies (Czech Science Foundation (República Checa), National Research Foundation (Sudáfrica), Agencia Nacional de Promoción Científica y Tecnológica (Argentina), Comisión Nacional de Ciencia y Tecnología (Chile), Ministero dell´ Istruzione, dell´ Università e della Ricerca (Italia), ANECA y ANEP (Spain) and of foreign universities (Politécnico de Bari (Italia), University of Sharjah (Dubai – United Arab Emirates) and University of Punjab (Pakistán). He has also been member of scientific committee of 16 international and national conferences, general chairman of 3 international symposia and invited speaker (plenary and key lectures) at 15 international conferences. Currently, he has a H index of 39 with a citation number of 4784. (Research ID: M-6268-2014; ORCID: 0000-0002-5635-7215). In addition, he has been awarded with the Prize (2019) “Recognition to Scientific Career” at the ULPGC and belongs, as permanent member, to the Royal Sciences Academy of The Canaries (Spain). His research fields are focused in: - optimization, development and application of new analytical methodologies for the determination of organic contaminants in the environment; - control of organic contaminants in the marine medium; - analysis and control of emerging

contaminants in aquatic and terrestrial system. Regarding the university responsibilities, he has been member of university senate during several periods, Secretary of the Department of Chemistry (1986 – 1987) and Dean of Faculty of Marine Sciences (1994 – 1998) at ULPGC and currently he is Director of Institute for Environmental Studies and Natural Resources (i-UNAT) of University of Las Palmas de Gran Canaria and Head of Environmental Chemical Analysis Research Group of ULPGC.

Bibliometric data: SCOPUS (159 articles; 3444 citazioni; h-index 33)

Selection of the 10 most relevant publications and/or patents (Data from Scopus)

1) Sosa Ferrera Z., Padrón Sanz C., Mahugo Santana C., Santana Rodríguez J.J. The use of micellar systems in the extraction and pre-concentration of organic pollutants in environmental samples. Trends in Analytical Chemistry 23 (2004) 469-479. (137 citations, 86th percentile)
2) Padrón Sanz C., Halko R., Sosa Ferrera Z., Santana Rodríguez J.J. Micellar extraction of organophosphorus pesticides and their determination by liquid chromatography. Analytica Chimica Acta 524 (2004) 265 – 270. (109 citations, 94th percentile)
3) Padrón-Sanz C., Halko R., Sosa-Ferrera Z., Santana-Rodríguez J.J. Combination of microwave assisted micellar extraction and liquid chromatography for the determination of organophosphorous pesticides in soil samples. Journal of Chromatography A, 1078 (2005) 13-21. (71 citations, 92th percentile)
4) Monzón A.L., Moreno D.V., Torres Padrón M.E., Sosa-Ferrera Z., Santana Rodríguez J.J. Solid-phase microextraction of benzimidazole fungicides in environmental liquid samples and HPLC-fluorescence determination. Analytical and Bioanalytical Chemistry 387 (2007) 1957-1963. (50 citations, 86th percentile)
5) Vega Morales T., Torres Padrón M.E., Sosa Ferrera Z., Santana Rodríguez J.J. Determination of alkylphenol ethoxylates and their degradation products in liquid and solid samples. Trends in Analytical Chemistry 10 (2009) 1186-1200. (58 citations, 74th percentile)
6) Vega-Morales T., Sosa-Ferrera Z., Santana-Rodríguez J.J. Determination of alkylphenol polyethoxylates, bisphenol-A, 17α-ethynylestradiol and 17β-estradiol and its metabolites in sewage samples by SPE and LC/MS/MS. Journal of Hazardous Materials, 183 (2010) 701-711. (100 citations, 92th percentile)
7) Mahugo-Santana C., Sosa-Ferrera Z., Torres-Padrón M.E., Santana-Rodríguez J.J. Application of new approaches to liquid-phase microextraction for the determination of emerging pollutants. Trends in Analytical Chemistry 30 (2011) 731-748. (107 citations, 89th percentile)
8) Vega-Morales T., Sosa-Ferrera Z., Santana-Rodríguez J.J. Development and optimisation of an on-line solid phase extraction coupled to ultra-high-performance liquid chromatography-tandem mass spectrometry methodology for the simultaneous determination of endocrine disrupting compounds in wastewater samples. Journal of Chromatography A, 1230 (2012) 66-76. (46 citations, 90th percentile)
9) Guedes-Alonso R., Ciofi L., Sosa-Ferrera Z., Santana-Rodríguez J.J., Del Bubba M., Kabir A., Furton K.G. Determination of androgens and progestogens in environmental and biological samples using fabric phase sorptive extraction coupled to ultra-high performance liquid chromatography tandem mass spectrometry. Journal of Chromatography A 1437 (2016) 116-126. (48 citations, 91th percentile)
10) Afonso-Olivares C., Sosa-Ferrera Z., Santana-Rodríguez J.J. Occurrence and environmental impact of pharmaceutical residues from conventional and natural wastewater treatment plants

in Gran Canaria (Spain). Science of total Environment 599-600 (2017) 934-943. (61 citations, 91th percentile)

Topic of the course 1: Advanced Methodologies and Techniques in the Sample Preparation and Determination of Organic Micropollutants in Environmental Matrices

Course summary detailed per lesson of 2 h (possibly with dates and room real or virtual)

Course summary**:** Advanced procedures and techniques in the preparation of environmental liquid and solid samples: extraction and pre-concentration steps. Advanced techniques for the determination of organic micropollutants in environmental samples, mainly chromatographic techniques with different detectors, with special focus on mass spectrometry detection (GC – MS/MS, LC-MS/MS and UHPLC-MS/MS).

Total: 8h

Program of the course 1

1) Sample preparation (Liquid Samples) - 2 hours

- Liquid/Liquid Extraction techniques (with organic solvents and surfactants). Theory and applications to environmental samples. Tutorial References.

- Solid Phase Extraction (SPE) technique. Theory and application examples of environmental samples. Tutorial References.

- Solid Phase Microextraction (SPME) technique. Theory and application examples to environmental samples. Tutorial References.

- Stir Bar Sorptive Extraction (SBSE) technique. Theory and application examples to environmental samples. Tutorial References.

2) Sample preparation (Solid Samples) - 4 hours

- Soxhlet Extraction, Ultrasound Assisted Extraction (USAE), Supercritical Fluid Extraction (SFE), Pressure Liquid Extraction (PLE) techniques. Theory and application examples of environmental samples. Tutorial References. (*2 hours*)

- Microwave Assisted Extraction (with organic solvents and surfactants) technique, QUECHERS methodology. Theory and application examples to environmental samples. Tutorial References. (*2 hours*)

3) Determination techniques and student evaluation – 2 hours

- Gas and Liquid Chromatography with special focus on mass spectrometry detection (GC- GC – MS/MS, LC-MS/MS and UHPLC-MS/MS). Theory and application examples to environmental samples. Tutorial References.

- Students evaluation (written exam)

Period: 26, 27, 28, 29 April

Lessons will be available:

☐ MODE 1 - Pre-recorded lessons available before 30th May 2022 (a meeting must be organized with PhD students in order to clarify eventual doubts)

X MODE 2 (preferred) - Lessons delivered in-person and in remote with simultaneous recording by the WEBEX platform

Students Evaluation:

☐ written exam

X reading and presentation of a scientific article within the topics of the course and critical discussion of its contents

The results of the evaluation must be delivered to the Doctorate School Coordinator within two months from the end of the course and in any case not later than 30th September 2022.