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EDITORIAL

6th International Congress on Water, Waste and Energy Management (WWEM-22). 5th International Conference on Green Chemistry and Sustainable Engineering (GreenChem-22). 2022 International Conference on Green Energy and Environmental Technology (GEET-22)

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It is a great pleasure to publish this Special Issue of the *Environmental Science and Pollution Research Journal (ESPR)* dedicated to the 6th International Congress on Water, Waste and Energy Management (WWEM-22), 5th International Conference on Green Chemistry and Sustainable Engineering (GreenChem-22) and 22 International Conference on Green Energy and Environmental Technology (GEET-22), held in Rome, Italy, from 20th to 29th July 2022.

These were the sixth, fifth, and second editions of a series of biannual academic conferences aimed at creating an international forum for researchers and scientists worldwide to discuss new results regarding the soundest issues related to Water, Waste, Green Chemistry, Green Energy, and Environmental Technologies.

Over 330 communications from 27 countries attended these conferences, including 181 posters, 150 selected oral

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communications, and six plenary talks. Most presentations were based on high-quality original works covering various conference topics.

This Special Issue is dedicated to "post-Covid trends and new insights for the physicochemical and biological treatment of wastewaters and soils."

As conventional treatment processes cannot remove some micropollutants such as pesticides, pharmaceuticals, and personal care products (emerging contaminants), these pollutants are increasingly being detected at low levels in water and soils. In this connection, this Special Issue discusses different technologies to remove this chemical or biological contamination, including other environmental aspects such as photocatalytic hydrogen production, eco-friendly construction materials, ecological indicators of environmental pollution, microplastics in marine feed and food, particulate matter (PM) and VOCs remediation in the urban environment, biomass valorization, support catalysts for CO_2 capture, and methanation.

This Special Issue includes some of the selected papers presented at these conferences. The papers that successfully passed the reviewing process of the ESPR journal are now published in this Special Issue. A relatively short number (about 10) of selected and exciting papers are presented here.

As Guest Editors, we would like to express our cordial gratitude to all Organizing and Scientific Committee members, mainly thanks to the Conference Chairs, Prof. Dr Luis Miguel Minhalma and Prof. Dr Ana Maria de Matos Charas (in GEET-22), Prof. Dr Jose Alcides Silvestre Peres (for GreenCHEM-22) and WEEM-22 Co-chairs, Prof. Dr M. Victoria López-Ramón, and Prof. Dr Manuel Sánchez Polo.

Also, we would like to thank Technical Secretariat Mr. Javier L. and, of course, all the authors for their contributions, the invited speakers for their state-of-the-art plenary presentations, the reviewers for their comprehensive and timely reviewing of the papers, and our sponsors for their unconditional support.

We would also like to express our special thanks to ESPR Editor-in-Chief Prof. Dr. Philippe Garrigues for their efforts in realizing this Special Issue, particularly to their valuable assistants, Ms. Florence Delavaud and Giulia Marinaccio. Without her valuable support, this Special Issue would never have been published.

We hope to see you all again at the next edition of these conferences, planned for the second fortnight of July 2024 in Lisbon (Portugal).

Thanks and best regards,

Prof. Joaquin R. Dominguez Prof. Joaquín R. Domínguez has a degree (1996) and a PhD (2000) in Chemistry from the University of Extremadura, Spain, both with honors and obtaining the research excellence prize of the University in 2001. In 1997–2000, he held a MEC FPU Predoctoral Fellowship with Predoctoral and Post-doctoral stays at the "Instituto Superior Tecnico," Lisbon (Portugal). In 2001, he became an Assistant Lecturer in the Department of Chemical Engineering at the University of Extremadura (Spain). In December 2007, he became an Associate Professor in the Department, and in 2023, Dr. Dominguez reached a Full Professor position. His research interests focus on water and wastewater treatment, removal of micropollutants, and emerging contaminants from water using advanced oxidation processes, AOPs, (ozone, Fenton's reagent, hydrogen peroxide, persulfate, UV and VIS radiation, and their possible combinations). Without leaving this research line, from 2007, he centered his efforts on a new line of electrochemical treatment (anodic electrooxidation of pollutants using boron-doped electrodes) that has been genuinely fruitful. In the last 3 years, Dr. Dominguez added a new line of sonochemical oxidation by ultrasonic waves at the MHz range (sono-oxidation of contaminants at high frequency). Regarding his experience, Prof. Dominguez has actively participated in 24 research projects in Environment Engineering, specifically in water and wastewater treatment and removing micropollutants from water. He is the Chairman of the biannual "International Conference on Water, Waste and Energy Management (WWEM)" from 2015 to the present. Dr. Domínguez has co-authored about 80 papers, 9 book chapters, and 6 scientific books about his research, obtaining an h-index = 33 (WoS). He has directed or co-directed 45 advanced research works, including 20 B.Sc. and 5 Ph.D. Theses. He has also presented 85 Communications at National and International Scientific Congresses.

Prof. Avelino Núñez-Delgado Prof. Núñez-Delgado at the Department of Soil Science and Agricultural Chemistry, Engineering Polytechnic School, campus Lugo, University of Santiago de Compostela (Spain), since 1996. Previous works in France and Spain as a postdoc researcher. PhD at the Department of Soil Sci. and A.C., USC, achieved in 1993. Several patents and research awards were earned. More than 400 publications at the date (March 2023), with around 200 being in Q1 JCR Journals. Currently working with a variety of research teams around the world. Book editor for various top scientific publishers. Editor for various top research journals.

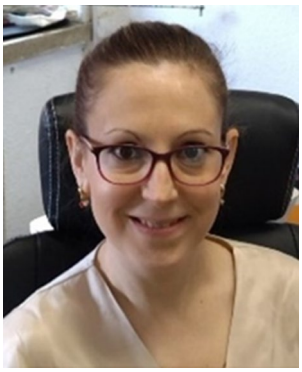
Prof. Helder T. Gomes Helder Gomes is Coordinator Professor at the Polytechnic Institute of Bragança (IPB), Portugal, and Coordinator of the Topic "Process and Product Engineering" of the Mountain Research Center (CIMO). He graduated in Chemical Engineering from the Faculty of Engineering of the University of Porto (FEUP), Portugal in 1997. In 2002, and also at FEUP, he obtained the PhD degree in Chemical Engineering in the area of Heterogeneous Catalysis applied to Wastewater Treatment. He joined the Department of Chemical and Biological Technology of IPB, in 2001, being Chair of his Department since 2019. Between 2016 and 2018, he was President of the Catalysis and Porous Materials Division of the Portuguese Chemical Society and, between 218 and 2022, was Vice President of the Iberoamerican Federation of Catalysis Societies. Its main research interests are focused on the synthesis and characterization of heterogeneous carbon-based materials for environmental, biomedical and bioenergy applications, the valorization of industrial and agro-industrial wastes into materials and fuels, and the development of water/wastewater treatment solutions based on advanced oxidation processes. He has published more than 90 ISI articles and more than 250 communications at international/national congresses. Participated in 40 projects and networks, 9 as coordinator. Acts as project evaluator in several national and international agencies. ORCID: http://orcid.org//0000-0001-6898-2408

Prof. Paulo A. Augusto Paulo Augusto is since 2011 an Associate Professor (Senior Lecturer) at the Faculty of Chemical Sciences and at the Faculty of Agronomy and Environmental Sciences at the University of Salamanca, Spain. Since 1998, he held Assistant Professor and other Academic and Research positions in other Universities, among others, the University of Porto in Portugal, the Health Institute of Porto and The University of Manchester (UK). Since 1994, he has been involved in research mainly in the area of Magnetic Separation and Magnetic Classification but also in Magnetism, Electromagnetism, Cryogenics, Superconducting Magnets, and Nanotechnology and Nanomaterials. In the last decade, he has increased his involvement in Environmental Protection and Remediation, Biotechnology, and Chemical Processing areas. He graduated in Chemical Engineering from the University of Porto, where he also obtained his PhD in the same area, in 2001, after several stays in the University of Manchester. His PhD involved the development and design of the first Magnetic Separator and Classifier including the design of the Superconducting Magnet, Cryogenic System, and Magnetic Shielding. He has been involved in several national and international projects, either as coordinator or as a team member, totaling over 15 million euros, among which it may be pointed out the highly financed MAGPRO2LIFE European Project. He has published over 60 book chapters and papers in top level international scientific media, filed 10 patents, and has presented scientific works in more than 100 conferences and congresses. He has given several invited lecturers in conferences and acted as co-chairman of some of them. He has been the supervisor of dozens of post-doctoral works and PhD, Master, and Graduate Thesis. He works as a regular referee of several top scientific journals, and also has regular experience (more than 300 reviews) as an expert of European, National, and International Projects as well as Graduation courses. He has been also acting as an international expert in review panels of French Universities, and has several publications and projects regarding pedagogical innovation in teaching. He was awarded with an Environmental Protection Prize by the European Comission, due to its work in Magnetic Classification and the Environment and was also awarded by the Jose Castillejo Programme.

Dr. Sunita Varjani Dr. Sunita Varjani is currently working as a researcher at the City University of Hong Kong, Hong Kong. She also holds the position of Adjunct Professor at the University of Petroleum and Energy Studies, Dehradun, Uttarakhand, India. She has worked as Scientific Officer at Gujarat Pollution Control Board, Gandhinagar, Gujarat, India. Her major areas of research are Industrial & Environmental Biotechnology, Wastewater Treatment & Process Engineering, Bioprocess Technology, and Waste Management. Her current research focus is on developing circular waste-based biorefineries for the sustainable production of chemicals and fuels. Dr. Varjani has worked as visiting scientist at EPFL, Lausanne, Switzerland. She has 485 publications, including research and review papers, books, book chapters, and conference communications. She has been enlisted as a "Highly Cited Researchers 2022" list published by Clarivate's Web of Science. She has been enlisted as a Highly Cited Researcher (Top 2% in the World), Elsevier Citation Report (2020, 2021, 2022). She has won several awards, including Young Scientist Awards from The International Bioprocessing Association - An International Forum on Industrial Bioprocesses (2019–2020), Biotech Research Society, India (2018), Microbiologist's Society India (2018–2019), Association of Microbiologists of India (2018), International Society for Energy, Environment and Sustainability (2018), and AFRO-ASIAN Congress on Microbes for Human and Environmental Health, New Delhi (2014); highly cited and highly downloaded papers, Bioresource Technology, Elsevier, Journal of Environmental Management, Elsevier and Bioengineered, Taylor & Francis; Top Reviewer Award - 2018, Bioresource Technology, Elsevier; Top Reviewer Award - 2017, Bioresource Technology, Elsevier, and Best Paper Awards in national and international conferences in 2008, 2012, 2013, 2018, 2019, 2021, and 2022. She has served as deputy editor for Bioengineered journal. She is associate editor for Bioresource Technology, Cleaner & Circular Bioeconomy (CLCB), Sustainable Environment, Spanish Journal of Soil Science and Bioenergy and Biofuels journal(s). She is member of editorial board of Science of the Total Environment, Chemosphere, Current Pollution Reports, Sustainable Chemistry, and Pharmacy and has served as guest editor of special issues of several journals. She is editor for Archives of Microbiology and Indian Journal of Microbiology journal(s). She is Management Council Member of the BRSI and an Executive Committee Member of the International Society for Energy, Environment, and Sustainability.

Prof. Juan García Professor at the Department of Chemical Engineering and Materials, Faculty of Chemistry, University of Complutense de Madrid (Spain), since 2002. He undertook five post-doctoral research (Porto University, Portugal; Bath University, UK; Concepción University, Chile; Extremadura University, Spain and Polytechnic Institute of Bragança, Portugal). He is the author of more than 120 articles in international SCI journals, of which more than 75 are first-quartile SCI articles (Q1) of the JCR epigraph. He has an h-index of 37 (4990 citations). He has participated in over 40 research projects, has been leading research projects since 2003, and has co-supervised eight PhD Theses. His research interests have focused on synthesizing and characterizing carbon materials with enhanced properties and their catalytic application in adsorption, environmental catalysis, and biomass valorization. He is leader-researcher of several active projects related to wastewater treatment and waste valorisation from WWTPs. Prof. Garcia has four 6-year research periods recognized, is a regular assessor for AEI (State Research Agency) and other international bodies.

Prof. Gassan Hodaifa Gassan Hodaifa (h-index 27 in Web of Science) is Food Engineer (Univ. de Al-baath, Syria), Chemical Engineer (Univ. of Granada, Spain) and Dr. by University of Jaén (Spain). He works in the research lines of Microalgae, Treatment of Wastewaters, Chemical Oxidation, Membrane Technology, Adsorption, Pesticide Removal, Olive Oil Processing, Enzyme Biotechnology, and Nematode Biotechnology. He participated in 27 National, European, and Companies Research Projects. Two contracts as adviser for the Mega Japanese Company "Asahi Kasei Corporation." As a result of his research work, 65 articles published. Two patents for water purification of olive oil mill wastewater, 2 books, 46 book chapters in prestigious publishers such as Academic Press (Elsevier), CRC Press, Taylor and Francis Group, and Springer International Publishing AG. He published as editor, two Special Issues in J. Chemistry and Catalysts both from JCR. At this time, he is editor of a topic entitled "Advanced Oxidation Process: Applications and Prospects" for 5 journals (Sci, Water, Catalysts, Processes, and International Journal of Environmental Research and Public Health) and Editor for Special Issue for Catalysts entitled "Industrial Applications of Advanced Oxidation Technologies Past and Future" both to publish in 2022–2023 in the prestigious MDPI publisher. He has participated in more than 125 Congresses, 110 of them have international character, and 35 International Oral Conferences (3 as invite Keynote Speech). He is currently a member of 15 Editorial Boards of International Journals such as Catalysts, and Heliyon. Eight as member of the Organizing Committee in Congresses and International Conferences, and 23 as member of Scientific-Technical Committee of International Congresses and Conferences. He has participated in the organization of 4 Congresses and 4 Conferences at International level. Has received several awards such as the Chemical Engineering Journal Award for the most cited article. It has designed, installed, and automated an industrial pilot plant for wastewater treatment of olive oil mills by Fenton reaction technology (3–5 m3/h). He has participated in several Technology Transfer Seminars to industrial sector. Co-founder of the Start-up "CEPATM Nematode Production for Aquaculture, S.L." Evaluator of European Projects (as MSCA-PF for different years), Projects of the United Arab Emirates University, National Projects from Argentina, National Romanian Project, Croatian National Project, Italian National Projects, etc. He is a member of Spain National Association of Chemists, the Official School of Chemists of Murcia, and England Society of Chemical Industry (SCI). Currently, he works as a professor at Pablo de Olavide University.



Prof. Silvia Álvarez-Torrellas Professor at the Department of Chemical Engineering and Materials, Faculty of Chemistry, University Complutense of Madrid (Spain), since 2017. She undertook four-stay research (Concepción University, Chile; Autónoma University, Spain; Vila Real University, Portugal; and Polytechnic Institute of Bragança, Portugal). Currently, she is Associate Professor in Chemical Engineering at Complutense University in Madrid. Her research focuses on synthesizing and characterizing carbon materials with enhanced properties and their application in Adsorption, Environmental Catalysis, and Biomass Valorization. She has written over 75 scientific articles and several book and book chapters on these subjects in international journals and participated in more than 15 research projects supported by public and private institutions. She has supervised two PhD Thesis (International Mention) and currently co-directs three PhD, one of which is an industrial PhD in collaboration with the company Ecolotum. She has an h-index of 24 and more than 2600 citations. She is Associate Editor of Chemical Engineering Science Journal, and a Spanish member in the Working Party on Fluid Separations, of European Federation of Chemical Engineering (EFCE).