



Low cost organic and inorganic sorbents to fight soil and water pollution

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In this editorial piece, the Guest Editors comment on the Special Issue (SI) of Environmental Science and Pollution Research “Low cost organic and inorganic sorbents to fight soil and water pollution.”

Recycling waste materials and by-products is a main objective for environmental protection. In addition, soil and water pollution suppose global hazards that need to be controlled to avoid serious and increasing damages to public health and the environment as a whole. In this way, previous publications have commented on the promising field of recycling raw and modified waste and by-products to control pollution (Núñez-Delgado et al. 2015). Also, related Special Issues have been previously published (for example, Elleuch et al. 2018; Higuera et al. 2019). However, the field of research is still open, and new findings would be welcome. This is the reason why the Special Issue was developed.

Papers published in this Special Issue

A total of 18 manuscripts were submitted to the SI. After review, 9 very interesting papers were accepted and published. Research teams from different countries worked on various aspects of the theme, covering the following items: adsorption of methylene blue on a variety of sorbent materials (Wang et al. 2018), the use of vegetal fibers and metal oxides for water decontamination (Kesraoui et al. 2018), Cu removal

by means of KOH-modified pumpkin husk (Çelekli et al. 2018), or using a green adsorbent (Banerjee et al. 2018), P sorption on various waste and by-products (Romar-Gasalla et al. 2018), effects of organic amendments on plants subjected to Cd stress (Shahid et al. 2018), fluoride removal by means of raw or modified plant-derived carbons (Vilakati et al. 2018), waste mixtures used to remove a variety of organic pollutants (De-Toledo et al. 2018), and biochar as sorbent for volatile fuel organic compounds in water (Saiz-Rubio et al. 2018).

Perspectives

Since the last decades, this interesting field of research has been growing. In addition, previous special issues have focused on complementary aspects of the matter, some of them providing recent views and findings (for example, Núñez-Delgado et al. 2018). As the generation of residues is increasing, it is expected that the need for developing new strategies, based on new data from research, will also continue to increase in the next years. In fact, the various aspects included in the theme can be considered public health and environmental issues of global relevance.

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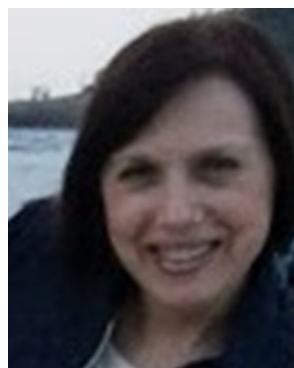
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Teacher-Researcher at the Department of Soil Science and Agricultural Chemistry, Engineering Polytechnic School, University of Santiago de Compostela, campus univ. Lugo, Spain. My PhD Thesis focused on diffuse pollution. Several books, book chapters and publications in Q1 research journals were carried out as a result. At the same time, I carried out research on wastewater treatment plants, and on designs of complementary

wastewater treatment systems. Later on, I worked on biomarkers of water pollution in France. Back in Spain, my research focused on recycling, studying red mud as a sorbent material, sewage sludge, wood ash, and other kinds of waste and by-products, as well as different mixtures of them. I studied retention/inactivation of biotic and abiotic contaminants, and potential for agronomic recycling of these and other wastes. Special cases were those focused on composting. My research group registered up to 8 patents in relation to all these lines of research. Several recognitions, awards, publications, and PhD Thesis, resulted from these works. After that, my research focused mainly on retention of pollutants, using by-products to reach this end, facilitating recycling of these materials. Derived from that, my research team has published more than 50 papers in top journals (most Q1 in the JCR) since 2012, as well as many other works in proceedings, PhD Thesis, and book chapters.



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Full Professor of Soil Science, at the Engineering Polytechnic School, University of Santiago de Compostela (USC), Spain. She graduated in Biological Sciences at the University of Santiago de Compostela, where she also obtained her doctorate. Her research interest has been focused on environmental problems in relation to restoration of mine dumps, as well as on contamination by F, As, heavy metals and antibiotics, and

(bio)geochemistry of potentially toxic elements (particularly aluminum). In the last decade she studied different wastes from various agroforestry and industrial activities, and its potential use as fertilizers and bioadsorbents for heavy metals and antibiotics in contaminated soils and waters. She has authored more than 200 publications, 95 of them in JCR-referenced journals, and has presented more than 135 communications in national and international conferences.

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Professor at the “Departamento de Edafología e Química Agrícola” (Soil Science and Agricultural Chemistry), University of Santiago de Compostela, since 2001. She received a PhD in Biological Sciences from the University of Santiago de Compostela in 1994. She obtained a Marie Curie Grant Fellowship of the TMR Program (Training and Mobility of Researchers - European Community) and she carried out part of her research and teaching at

the Universities of Florence (Italy), Le Marche (Italy) and the Centro Nazionale delle Ricerche-Florence (Italy). She was nominated for outstanding researcher by the Ministry of Education and Science (13 Program-Government of Spain). Her recent research interest is focused on different fields: contamination by metals and antibiotics, adsorption and desorption processes of contaminants in soils and industrial waste, reuse of solid waste in the soil environment, soil fertility, and the study of rhizosphere soil in agroforestry systems and degraded media. She has participated in more than 50 research projects and more than 60 communications to Congresses and she is the author of more than 80 scientific articles included in the JCR index.