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Editorial

Editorial on the Special Issue “Application of Environmentally Friendly Technologies in Green Processes”

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The treatment of wastewater by activated sludge, known as conventional biological treatment, is widely implemented. However, the removal efficiency is very low for biorecalcitrant compounds, such as dyes, drug residues, pesticides, and hydrocarbons, as well as heavy metals [1,2]. Furthermore, novel processes must be developed through a combination of treatments, for example, biological treatment combined with advanced oxidation processes [3], the use of green chemicals [4], and the management of by-products of treatment processes [5–7].

This Special Issue on “Application of Environmentally Friendly Technologies in Green Processes” aims to curate novel advances in the treatment of organic and inorganic micropollutants, with a view to preserving the natural environment. The valorization of treatment co-products is also addressed, for example, on sludge resulting from the biological treatment of wastewater. All articles in this Special Issue were selected after rigorous peer review. There is wide interdisciplinary collaboration with some international partnerships.

Three literature reviews offer an inventory of wastewater treatment techniques. The first concerns the treatment of dyes [8]; the second, slaughterhouse wastewater [9]; and the third, the treatment using UASB reactor technologies [10].

Three articles present innovative approaches based on green processes. In fact, Arabica coffee husk was used as a precursor for biochar preparation, which was then used in the Fenton-like process of Dicamba, an herbicide [11]. In other cases, the leaf extract of *Cascabela thevetia* enables the green synthesis of AgNO₃, which has antibacterial activity [12]. The third study concerns the elimination of heavy metals by adsorption on a biosorbent from *Monotheca buxifolia* seeds [13].

The topic of sludge from wastewater treatment is addressed through either production reduction or recovery. The amount of sludge in electrochemical machining can be reduced through complexing (with EDTA) or reducing (with ascorbic acid) processes. This sludge reduction significantly increases the lifespan of equipment and reduces the cost of the process [14]. Surplus sludge from sewage treatment plants was mixed with Portland cement for application in construction materials [15]. Another approach is to mix sludge with Sorel cement [16].

The last article applies an artificial neural network (ANN) to optimize the removal of several pollutants from aqueous solution, with the aim of optimizing returns [17].

It is expected that this Special Issue will significantly contribute to further research on wastewater treatment with green processes.

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