Special Issue

Recent Advances in Adsorption and Degradation Technologies of Per- and Polyfluoroalkyl Substances (PFAS)

Message from the Guest Editor

Per- and polyfluoroalkyl substances (PFASs) represent a significant group of emerging contaminants due to their extreme chemical persistence, strong C-F bonds, and resistance to conventional environmental treatment.

Recent developments emphasize adsorption as a leading approach, with activated carbon, biochar, and advanced nanomaterials demonstrating strong PFAS capture. Complementary degradation strategies, including electrochemical oxidation and photocatalysis, have shown potential for mineralization, moving beyond mere sequestration. Moreover, hybrid techniques that integrate sorption with destructive processes are gaining prevalence for enhanced treatment performance.

Broader remediation strategies are also emerging such as sorption, filtration, and sonochemical destruction, while water treatment technologies increasingly rely on adsorption, reverse osmosis, ion exchange, and oxidation. For soils, novel techniques such as thermal desorption, phytoremediation, and soil washing are being explored.

Contributions addressing novel material development, fundamental insights into PFAS remediation, field-scale applications, and sustainability assessments are welcome.

Guest Editor

Dr. Chinemerem Ruth Ohoro

Department of Environmental Science, School of Ecological and Human Sustainability, College of Agriculture and Environmental Sciences, University of South Africa, Florida, Roodepoort 1710, Gauteng, South Africa

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
separations@mdpi.com

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Editor-in-Chief

Prof. Dr. Frank L. Dorman
Department of Chemistry, Dartmouth College, Hanover, NH 03755, USA

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