

Editorial

Separation Science and Technology for Environmental Applications

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One of the driving forces behind the significant advancements in environmental separation science is the need for creative solutions to the evolving environmental challenges. Water treatment and purification, environmental remediation, the capture of toxic and greenhouse gases, and the recovery of precious components from wastes are some of the most characteristic examples that “fuel” the evolution of separation science and technology in environmental applications.

The Section, titled “Environmental Separations”, seeks to attract both basic and applied research on methods, processes and materials (micro-nano-bulk) that target existing and emerging environmental challenges. The Section’s aim and scope encompass novel methods, innovative processes, and enhancements to known processes that address new environmental challenges or provide improved solutions to existing problems.

This Section welcomes research papers and critical review articles on the state-of-the-art in the field of environmental separations, with a focus on:

- Water treatment and purification (e.g., treatment of drinking water, decontamination of natural waters, treatment of wastewater, etc.);
- Remediation–restoration (e.g., soil and sediment remediation, improvement of soil fertility, etc.);
- Air filtration (e.g., removal of hazardous gases and particulate matter);
- Oil cleanup (e.g., removal of oils and cleanup of oil spills);
- Gas separation (e.g., removal of gases from fuel gas emissions or fuel combustion processes);
- Hazardous waste treatment (e.g., removal, degradation, or immobilization of hazardous compounds and heavy metals);
- Desalination;
- Recycling and resource recovery (i.e., separation and recovery of precious metals from wastes and wastewater);
- Gas capture (e.g., capture of greenhouse gases);
- Environmental monitoring and analysis (i.e., sample preparation, active and passive sampling in air, water and soil/sediments).

All articles should demonstrate environmental application(s) (through lab-scale experiments or pilot-scale studies, or case studies). Theoretical investigations on methods and processes are also welcome, as long as their findings contribute to the improvement in their environmental applicability.

Conflicts of Interest: The author declares no conflict of interest.

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