

Summary

Dear Colleagues,

Wastewater treatment is a necessity for any modern society. Until a few decades ago, the primary aim of any wastewater treatment plant (WWTP) design attempt was the construction of a plant able to treat wastewater so as to achieve the imposed discharge standards. Today, the primary aim of the consulting engineers is to design the “optimum” WWTP, so as to achieve the imposed discharge limits at minimum capex and opex. Contrary to past designs, which were dominated by various versions of the “activated sludge” process, a large spectrum of technologies is now available to select the most appropriate one. The availability of modern materials (e.g., membranes), the improvement of aeration processes (e.g., microbubbling), the development of new wastewater treatment devices and processes (e.g., microsieves, wet oxidation), new processes for biosolids management (e.g., waste to energy, hydrothermal carbonization), nutrient recovery (e.g., phosphorus), and the employment of novel online monitoring systems have opened new design horizons in wastewater treatment. Moreover, the potential for water reuse and the increasing requirement to control the level of micropollutants at the effluent have enforced the use of novel designs.

The present Special Issue aims at presenting the new trends in WWTP design, operation, and economics. Performances of new materials and techniques for wastewater treatment and biosolids management, studies on WWTPs operation and economics, and well-documented case studies are welcome. Critical review articles are strongly encouraged.

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Keywords:

- Wastewater
- Biosolids
- Sludge
- Economics
- Design
- Operation

- Wastewater treatment plant
- Sewage