

Special Issue on
**Advances in Chemical and Biochemical Treatments of
Industrial Wastewaters**

CALL FOR PAPERS

The treatment of polluted waters coming from a variety of industrial processes or landfill leachate in order to produce water which can be discharged safely into the environment (i.e., its content of contaminants is below the threshold limit values imposed by the law) is a relevant problem to be faced even at present.

Major sources of industrial wastewaters are, for the sake of example, agricultural wastes, breweries, dairy industry, pulp and paper industry, mines and quarries, iron and steel industry, food and complex organic chemical industry, textile, tannery and pharmaceutical industry, and, finally, nuclear plants.

As it is possible to argue, this wide variety of wastewaters needs water treatments techniques as much as possible to remove the target contaminants.

Particularly, both physical-chemical and biological strategies can be applied successfully. Some example are solid removal using either sedimentation or filtration techniques; cavitation (both acoustic and hydrodynamic) and oil and grease removal through oil-water separators; removal of biodegradable compounds using activated sludge processes, trickling filtration, and advanced oxidation processes (e.g., hydroxyl radical-based, ozone-based, UV-based, Fenton related, and sulfate-radical based); treatment of acids and alkalis through controlled neutralization; ions removal using adsorption, membranes, and so on; and removal of toxic metals using chemical substances, precipitation techniques, or electrochemical methods.

All these classic or more recent treatment techniques can be of course improved in order to make them more sustainable from an environmental point of view (e.g., the massive use of chemicals, to be disposed off later, in the water treatment is highly undesirable).

In recent years, the search for both new and low environmental impacting treatment strategies for either the disposal or the reuse of industrial wastewaters is one of the major challenges to be faced.

This special issue aimed at both describing a complete state of the art of all the most advanced industrial wastewaters treatment techniques and collecting all the major advances obtained in this field. Therefore, review articles as well as high original research papers are welcome.

Potential topics include but are not limited to the following:

- ▶ Current state of the art for chemical and biochemical techniques applied to the treatment of industrial wastewaters
- ▶ Advances in modeling and experimental devices for the removal of biodegradable compounds using physical-chemical (nanofiltration, activated carbon adsorption, photocatalytic oxidation, advanced oxidation processes in general, etc.), biological, natural, or combined (chemical-biological) processes (e.g., trickling filtration and activated sludge processes)
- ▶ Advances in modeling and experimental devices for the removal of inorganic compounds (e.g., microbial fuel cells for sulfur compounds oxidation and energy generation)
- ▶ Advances in modeling and experimental prototypes for the removal of metals and ions (e.g., membrane processes and electrocoagulation)
- ▶ Modeling and experimental work on oil and grease separation
- ▶ Other innovative treatment techniques for the removal of either organic or inorganic substances, metals, ions, and so on, described with particular emphasis on their low environmental impact and increased efficiency with respect to the classical ones

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jchem/environmental.chemistry/btiw/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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