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The treatment of wastewaters by supercritical water oxidation

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ABSTRACT

In this study, the treatment performance of SCWO process is evaluated on various industrial wastewaters such as textile dyehouse effluent; pesticide containing model wastewater; olive mill wastewater and cheese whey. These wastewaters have significant pollution potentials due to their high organic loads. The experiments were made under sub- and supercritical conditions in a continuous flow reactor, using H_2O_2 as the oxygen source. The removal efficiencies are evaluated in terms of total organic carbon concentrations (TOC). The results demonstrate that at various experimental conditions, SCWO provides high organic conversion yields up to 100% in very short reaction times within 30 s for each wastewater sample.

Keywords: Supercritical water oxidation; Hydrothermal; Olive mill wastewater; Textile wastewater; Whey; Pesticide; Water reuse

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