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## TEXTILE WASTEWATER TREATMENT BY HOMOGENEOUS OXIDATION WITH HYDROGEN PEROXIDE

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### Abstract

The textile wastewaters have a diverse composition depending both on the used raw materials and applied manufacturing technologies. These wastewaters may contain various pollutants such as organic compounds (e.g. residual dyes), suspended solids, metal ions etc. Most of dyes are synthetic compounds with aromatic molecular structures and non-biodegradable.

The oxidative destruction via homogenous oxidation processes with hydrogen peroxide (simple chemical oxidation with H<sub>2</sub>O<sub>2</sub> or advanced oxidation processes (AOPs) as Fenton oxidation, ozonation, photo-oxidation and photo-Fenton oxidation etc.) are attractive alternatives to conventional treatments, easy to be applied and not so expensive. The use of H<sub>2</sub>O<sub>2</sub> in AOPs has the advantage that the decomposition products of organic pollutants are common harmless compounds. Moreover, H<sub>2</sub>O<sub>2</sub> decomposes itself in water and oxygen.

This paper is a review of authors' researches regarding homogenous oxidation with hydrogen peroxide applied for different types of textile dyes in order to perform high textile dye removals considering some relevant factors: pH, agitation regime, temperature, H<sub>2</sub>O<sub>2</sub> concentration, textile dye concentration, oxidation time, ferrous or metallic ions concentration, etc.

*Key words:* AOPs, dyes, homogenous oxidation, hydrogen peroxide, textile wastewaters

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