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**ADVANCED OXIDATION PROCESSES.
DECOLORIZATION OF SOME ORGANIC DYES
WITH H₂O₂**

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Abstract

Comparative comments about advanced oxidation processes (AOPs) using hydrogen peroxide, namely H₂O₂ photolysis, Fenton and photo-Fenton process, applied for azo dye decolorization, are presented. The most important parameters with high influence on these processes are: pH, concentration of hydrogen peroxide and ferrous ions or dyes together with the contact time and irradiation conditions (the nature, intensity and wavelength of light). The pH values are important only in Fenton- and photo-Fenton processes and need to be smaller than 3; at pH values bigger than 3, the floc formation of ferric hydroxy complexes occurs which lead to the increase of turbidity and sludge deposition. Initial concentration of H₂O₂ can be increased, with favourable consequences on the dye decolorization, but only to a certain dose beyond which the further addition rests quite unuseful. The variation of ferrous ions concentration shows similar trends. The contact time and irradiation conditions can also influence the progress of dye decolorization.

Keywords: AOPs, hydrogen peroxide, UV radiation, ferrous ions, dye decolorization

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