

Photodegradation of Paracetamol by photo-Fenton process

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The presence of pharmaceuticals in wastewaters has been reported to be an environmental issue of great significance because of its consequences over ecosystems and human health. Photo-Fenton process has shown to be effective as an alternative to remediate wastewaters containing this kind of contaminants.

In this work, the photo-Fenton degradation of paracetamol (PCT) (15 L, 40 mg L⁻¹) has been addressed. The treatment performance has been analyzed under a factorial design and the efficiency of the degradation process has been evaluated considering the decay of PCT and total organic carbon (TOC) concentrations and the biological oxygen demand, BOD₅. Light influence has also been assessed and the photonic efficiency for the photooxidation of paracetamol by photo-Fenton process has been determined.

Results characterizing the treatment output dependence on factors such as hydrogen peroxide, iron (II) and photonic efficiency, allow determining enhanced conditions for the photo-Fenton degradation of paracetamol solutions.