

Sonophotocatalysis in advanced oxidation process: A short review

Abstract

Sonophotocatalysis involves the use of a combination of ultrasonic sound waves, ultraviolet radiation and a semiconductor photocatalyst to enhance a chemical reaction by the formation of free radicals in aqueous systems. Researchers have used sonophotocatalysis in a variety of investigations i.e. from water decontamination to direct pollutant degradation. This degradation process provides an excellent opportunity to reduce reaction time and the amount of reagents used without the need for extreme physical conditions. Given its advantages, the sonophotocatalysis process has a futuristic application from an engineering and fundamental aspect in commercial applications. A detailed search of published reports was done and analyzed in this paper with respect to sonication, photocatalysis and advanced oxidation processes. © 2009 Elsevier B.V. All rights reserved.