

## Chemical method for wastewater management: developments of fenton process

### ABSTRACT

Fenton process represents a promising technology for the treatment of recalcitrant wastewaters. In recent years, many studies have been conducted on the applications of Fenton process for the removal of organic pollutants in wastewater. This study presents Fenton and improvements of Fenton process such as photo-Fenton, electro-Fenton and sono-Fenton processes. Previous studies on catalysts and their efficiencies in Fenton and improvements of Fenton process were also analyzed. The effects of many important operational parameters such as pH, Fenton reagents, initial concentration of the pollutants, concentration of inorganic ions and energy input in Fenton process have been discussed and their roles are highlighted. It has been concluded that further investigations are needed to evaluate the cost of Fenton process, especially when it is combined with other energy input processes. Integration of Fenton process with other conventional methods as pre-treatment or post-treatment stage is a strategy that could enhance efficiency and reduce cost of Fenton process, hence, it should be one of the research focus of Fenton process.

**Keyword:** Fenton, Wastewater; Catalyst; Photo-fenton; Sono-fenton; Electro-fenton