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The mineralization of Metronidazole by electro-Fenton method with $LaFeO_3$

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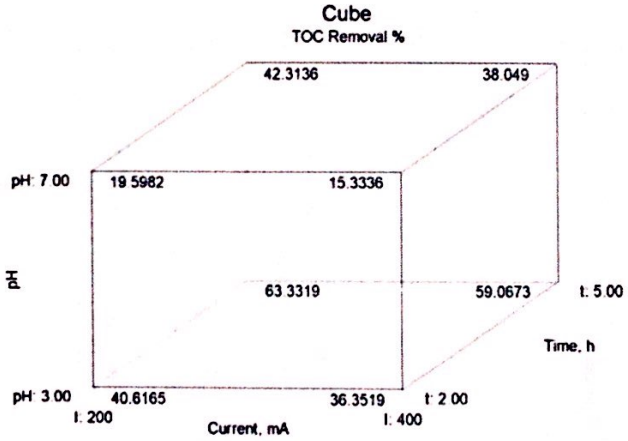
Abstract

Mineralization of metronidazole antibiotic, was accepted as an important environmental pollutant was investigated using electro-Fenton method. Because of the widespread use of antibiotics and resistance to existing wastewater treatment methods, development of both efficient and environmentally friendly advanced chemical oxidation methods such as electro-Fenton is of great importance. iron-containing perovskite $LaFeO_3$ catalysts was prepared by the sol-gel method and used electro-Fenton system. The effect of parameters (pH, current, time and catalyst dosage) on mineralization was determined by response surface methodology (RSM).

$Cat\text{-}Fe^{3+} + H_2O_2 \rightarrow Cat\text{-}Fe^{2+} + HO_2^{\bullet} + H^+$

$Cat\text{-}Fe^{2+} + H_2O_2 \rightarrow Cat\text{-}Fe^{3+} + {}^{\bullet}OH + HO^-$



Keywords: metronidazole, Optimization, Mineralization, Fenton.

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