Scopus

Documents

Aslam, M., Tahir Soomro, M., Ismail, I.M.I., Salah, N., Waqar Ashraf, M., Qari, H.A., Hameed, A.

The performance of silver modified tungsten oxide for the removal of 2-CP and 2-NP in sunlight exposure: Optical, electrochemical and photocatalytic properties

(2015) *Arabian Journal of Chemistry*, . Article in Press. Cited 6 times.

Abstract
The optical and electrochemical characterization of the synthesized Ag+ modified WO3 photocatalysts was performed and its photocatalytic activity was estimated in the visible region (420-800nm) of sunlight for the degradation of 2-chloro and 2-nitrophenol. The catalysts with the varying loading of Ag+ ranging from 0.5% to 10%, exhibited significantly higher activity as compared to pure WO3. Attempts were made to correlate the enhanced activity of Ag+ loaded catalysts with the optical and electrochemical properties. At lower loading (up to 1% Ag+), the enhanced degradation was attributed to the excited electron trap and transfer ability of surface mounted Ag+ species, while the synergic effect between the WO3 support and surface Ag2O resulted the same at higher loadings. The electrochemical properties of the synthesized powders, in comparison with pure WO3, also supported the same findings. The identification of the intermediates and the estimation of the released anions evidenced the contribution of both hydroxyl radicals (HO<sup/>) and superoxide anion (O2 -) radicals in the degradation process. The identification of aliphatic oxygenates as majority intermediates and release of respective ions verified the replacement of Cl- and NO2 groups, insertion of oxygen and aromatic ring cleavage.

2-s2.0-84929646053
Document Type: Article in Press
Publication Stage: Article in Press
Source: Scopus
Access Type: Open Access