Public Abstract
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Title:Photocatalytic Reduction of Hexavalent Chromium in Aqueous Soultions by TiO2/PAN Nanofibers

This study was focused on the fabrication and application of titanium dioxide (TiO2)/polyacrylonitrile (PAN) nanofibers. TiO2/PAN nanofibers were prepared by the electrospinning process from the mixture of titanium isopropoxide (TIIP), PAN, acetone and dimethyl sulfoxide (DMSO). The photocatalytic performance of the PAN/TiO2 nanofibers on the reductive degradation of Cr(VI) under various condition was investigated. Solution pHs, light source and presence of humic acid were studied as the main factors for the reaction. The photocatalytic reduction rates of Cr(VI) by TiO2/PAN nanofibers were significantly higher at the acidic condition than those at alkaline condition. The TiO2/PAN nanofibers could be activated by the visible light. The presence of humic acid promoted the photocatalytic reduction of Cr(VI) by electrons.