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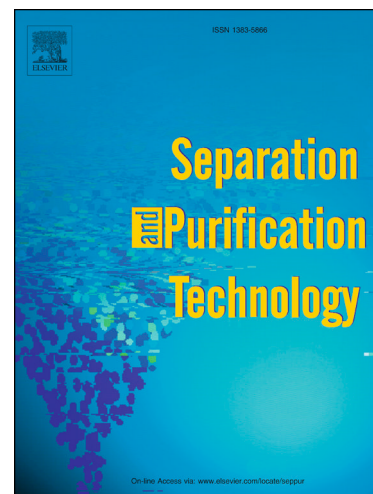
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Influencing Investigation of Metal Ions on Heterogeneous Catalytic Ozonation by Ceramic Honeycomb for the Degradation of Nitrobenzene in Aqueous Solution with Neutral pH

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Abstract

Influence of metal ions on heterogeneous catalytic ozonation by ceramic honeycomb for degradation of nitrobenzene in aqueous solution was investigated through the semi-continuous batch experiments to compare apparent reaction rate constant (k_{app}) and hydroxyl radical ($\cdot OH$) formation rate ($k_{\cdot OH}$) in the presence of different metal ions including monovalent (Na^+ , K^+ and Ag^+), divalent (Zn^{2+} , Ni^{2+} , Co^{2+} , Mn^{2+} , Ca^{2+} , Fe^{2+} , Cu^{2+} and Mg^{2+}) and trivalent ions (Fe^{3+} , Al^{3+} and Cr^{3+}). Each metal ion can increase k_{app} and $k_{\cdot OH}$ in the process of ozonation alone under the present experimental conditions. Except for the positive influence of Mn^{2+} , the others all show the early enhancement effect and the latter inhibition effect on k_{app} and $k_{\cdot OH}$, namely existing a critical maximum concentration of metal ion for

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