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Short Communication

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Effect of Hydrodynamic Mixing Conditions on Wet Oxidation Reactions in a Stirred Vessel Reactor

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Abstract

The aim of this study was to investigate the impact of mixing intensity and mixing flow patterns on solid waste degradation, and production of valuable intermediate by-products such as acetic acid. Total suspended solids generally decreased, soluble chemical oxygen demand, dissolved organic carbon, and acetic acid concentration generally increased with the progress of the reaction and increase in the mixing intensity. The results showed that axial-radial flow pattern (using pitch blade impeller) and medium impeller speed (500 rpm) resulted in a higher degree of solid degradation and production of acetic acid.

Keywords: Wet oxidation; hydrothermal processing; organic waste; hydrodynamics; mixing

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