

Article Abstract

Title:	The oxidative degradation by pyrolusite of p-nitrophenol wastewater after micro-electrolysis pretreatment
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Journal:	<i>International Journal of Engineering, Science and Technology</i> , Vol. 2, No. 7, 2010, pp. 104-109.
Abstract:	P-nitrophenol wastewater was pretreated with iron-carbon micro-electrolysis (ME) technology. After the pretreatment, p-nitrophenol was degraded into p-aminophenol. The degradation ratio of p-nitrophenol could almost be up to 95% when pH value reached 2.0 and the quantity of added iron scrape was 2.0g/100mL. Through the experimental investigation, to identify the changes closely associated with treatment effect on wastewater containing nitrophenol, reaction time, pH, amount, particle size of pyrolusite and shaking speed were analzed. The p-nitrophenol were almost eliminated at a pH value of 3.5, shaking rate of 150 rpm, reaction time of 2h and pyrolusite amount of 1.0g/100mL, mineral grain size of 75-106µm. The removal ratio of COD is over 95% and TOC has been reduced by 89.0% at the same time. P-aminophenol was degraded into H ₂ O and CO ₂ finally. The degradation mechanism of wastewater from pretreatment by pyrolusite has been further investigated based on previous work.
Keywords:	p-nitrophenol; micro-electrolysis; pyrolusite; degrading mechanism