

# # 4072421523 : MAJOR INTER-DEPARTMENT ENVIRONMENTAL SCIENCE

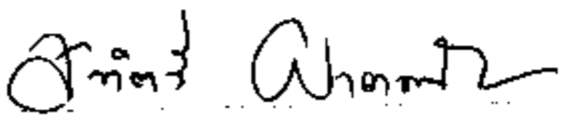

KEY WORD : PULP AND PAPER MILLS WASTEWATER, DECHLORINATION, ZERO-VALENT IRON, 2-CHLOROPHENOL, 2,4-DICHLOROPHENOL, 2,4,6-TRICHLOROPHENOL

SAWITRI PHATAYANON : DECHLORINATION OF CHLORINATED PHENOLIC COMPOUNDS FROM PULP AND PAPER MILLS WASTEWATER BY ZERO-VALENT IRON. THESIS ADVISOR : ASSOC. PROF. AMORN PETSOM, Ph.D.

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Efficiency of dechlorination of chlorinated phenolic compounds from synthetic wastewater was conducted by using zero-valent iron which was depended on type of chlorinated phenolic compounds, particle size of zero-valent iron, pH and contact time. High Performance Liquid Chromatography was employed to determine the amount of chlorinated phenolic compounds remaining in solution.

The results of dechlorination of 2-chlorophenol, 2,4-dichlorophenol and 2,4,6-trichlorophenol in batch studies of synthetic wastewater at 20 mg/l concentration showed 10 micron of zero-valent iron at pH 4 could removed 100 % of the tree compounds at contact time 5, 4 and 4 days, respectively. In wastewater from pulp and paper mills industry 10 micron of zero-valent iron at pH 4 could dechlorinated 95.33, 100 and 100 % of 2-chlorophenol, 2,4-dichlorophenol and 2,4,6-trichlorophenol at contact time 15, 15 and 9 days, respectively.

สหสาขาวิชา วิทยาศาสตร์สภาวะแวดล้อม ... ลายมือชื่อนิสิต ...  ...  
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