STUDENTS PROJECT PROGRAMME

(SPP - 38TH SERIES: 2014 - 2015) PROJECT REPORT

ON

" DEGRADATION OF PHENOL FROM COKE OVEN EFFLUENT OF JINDAL STEEL PLANT (38S1508)"

SUBMITTED TO

KSCST

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Abstract

Present work focuses on degradation of phenol and COD reduction using isolated bacterial strain. A bacterial strain was successfully isolated from the sludge of the BOD treatment plant. The strain was characterized as gram negative rod-shape bacteria. Phenol degradation studies were performed on coke oven effluent (without any dilution). The strain was successful in phenol removal upto 96.2 % at 180 ppm of initial substrate concentration Monod modal was fitted to the data. specific growth rate of the strain was determined as 0.0086 and doubling time of 80.58 hours having maximum biomass of 11.36 produced. Effect of temperature, pH and Inoculum level was also determined. Maximum degradation was achieved at 350C, pH 7 with Inoculum level of 15mg/l The biomass yield was 0.0054 gm per gram of substrate consumed with initial 10 gems of cells having saturation constant of $1.7 \text{ X } 10^{-7}$. The COD of the COEF was reduced to 97.75% after treatment.

Keywords

Phenol removal, coke oven effluent, bioremediation