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## **ELECTROCHEMICAL TREATMENT OF MUSTARD WASTEWATER USING CARBON PAPER ELECTRODE**

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### **Abstract**

Treatment of mustard wastewater with high salinity and organic concentration by electrochemical degradation was studied. The influence of the critical parameters of electro-oxidation such as pH, current density, salt concentration and energy consumption on the removal efficiency of COD and NH<sub>3</sub>-N was studied using porous carbon electrode. It was found that the COD and NH<sub>3</sub>-N removal efficiency could be enhanced by increasing pH, current density and salt concentration. The current density of 0.032A cm<sup>-2</sup> at pH 9 with a salt concentration 7% was found to be optimal, achieving a maximum COD and NH<sub>3</sub>-N removal of 64.2% and 81.2%. The optimum energy requirement for the reduction of 1kg COD is 0.83 kWh at pH 9, salt concentration 7% and current density 0.032A cm<sup>-2</sup>.

*Key words:* electro-oxidation, energy consumption, mustard wastewater, paper electrode, porous carbon

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