

## Electrochemical degradation of 1,4-dioxane by anodic oxidation on boron-doped diamond : Effect of variables

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The electrochemical oxidation of 1,4-dioxane on boron-doped diamond (BDD) electrodes was investigated using bulk electrolysis. Current density, initial concentration of 1,4-dioxane and pH were considered as process variables. COD degradation consisted of two different control regimes – current control and mass transport control. The current efficiency was independent of initial concentration of 1,4-dioxane, and the increase of current density resulted in decrease of time and increase of charge loading to attain a same removal efficiency. There was no effect of initial pH on the electrochemical oxidation of 1,4-dioxane. In all experiments, COD removal efficiency was higher than 95%, and there was the good agreement between experimental data and theoretical models.