

**PENGOLAHAN LIMBAH PEWARNA TEKSTIL DENGAN
METODE ELEKTROLISIS MENGGUNAKAN
ANODA DAN KATODA *STAINLESS STEEL***

INTISARI

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Pengolahan limbah pewarna tekstil dengan elektrolisis menggunakan elektroda *stainless steel* telah dilakukan. Penelitian ini terdiri atas beberapa tahap, yaitu analisis komposisi elektroda menggunakan *Scanning Electron Microscopy-Energy Dispersive X-Ray* (SEM-EDX), elektrolisis limbah tekstil pada berbagai variasi serta analisis degradasi dan Kebutuhan Oksigen Kimia (COD) limbah tekstil secara spektrofotometri. Hasil penelitian menunjukkan bahwa elektroda *stainless steel* yang digunakan memiliki komposisi dan kadar besi (72,2%), krom (18,9%), nikel (7,6%) dan silika (1,4%). Setelah dilakukan elektrolisis pada berbagai variasi dan analisis degradasi secara spektrofotometri didapatkan kondisi terbaik 60 menit (waktu elektrolisis), 3 V (besar potensial) dan 0,5 g NaCl sebagai elektrolit. Persentase penurunan nilai COD limbah tekstil yang dielektrolisis pada kondisi terbaik adalah sebesar 50,3834%.

Kata kunci : limbah tekstil, elektrolisis, *stainless steel*, spektrofotometri

TREATMENT OF DYE TEXTILE WASTEWATER WITH ELECTROLYSIS METHOD USING ANODE AND CATHODE STAINLESS STEEL

ABSTRACT

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Dye textile wastewater processing by electrolysis using stainless steel electrode has been done. The research consists of several stages, namely the electrode composition analysis using Scanning Electron Microscopy-Energy Dispersive X-Ray (SEM-EDX), electrolysis textile waste to wide variations as well as analysis of degradation and chemical oxygen demand (COD) textile waste by spectrophotometry. The research result showing that stainless steel electrode used had a composition and content of iron (72.2%), chromium (18.9%), nickel (7.6%) and silica (1.4%). After electrolysis at all sorts of variation and degradation analysis by spectrophotometry obtained best conditions 60 minutes (time electrolysis), 3 V (potential large) and 0.5 g NaCl as an electrolyte. The percentage reduction in COD value of textile waste electrolyzed in best condition amounted to 50.3834%.

Keywords : textile wastewater, electrolysis, stainless steel, spectrophotometry