



Treatment of Industrial Azo Dye Effluents by Electrochemical Technique And Its COD Measurement

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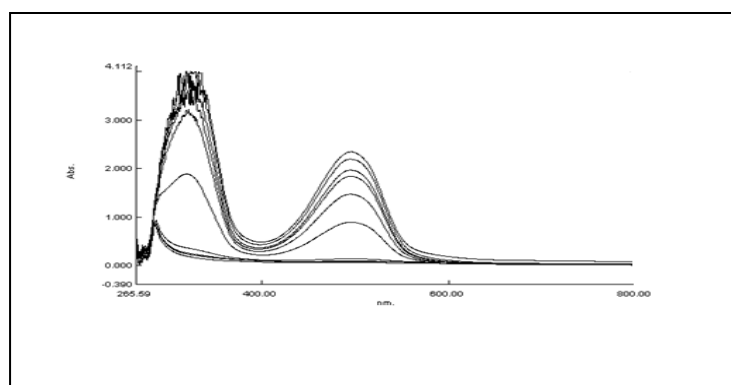
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ABSTRACT

Electrochemical reductive degradation of azo dye such as diazoaminobenzene (DAB) was carried out in dilute sulphuric acid solution on different cathodes such as Lead, Copper and Graphite by galvanostatic technique. The result of the electrolysis of the dyestuff solutions were expressed in terms of chemical oxygen demand (COD) values and the values of absorption intensity of dye solution. The different operating conditions of the treatment process were studied and optimized. The optimum operating conditions for the degradation of dye were determined, where good results for complete removal of the dye and COD were achieved. COD removal efficiency was reached 71%, the value of absorption maxima in both UV and visible region was decreased from 3.982 to 0.179 and 2.341 to 0.065. The % decolorization was 97.2 on lead electrode. Maximum degradation efficiency was observed in 5% acid solution, at 0.15Acm^{-2} current density (1080C) on lead electrode at room temperature.

Graphical Abstract



UV-VIS spectrum of reaction mixture

Keywords: Azo dyes, COD, Diazoaminobenzene, Electrochemical degradation, UV-VIS spectral studies.