

Using electrocoagulation–electroflotation technology to treat synthetic solution and textile wastewater, two case studies

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Description

The purpose of this study was to investigate the effects of the operating parameters, such as pH, initial concentration (C_i), duration of treatment (t), current density (j), interelectrode distance (d) and conductivity (κ) on the treatment of a synthetic wastewater in the batch electrocoagulation (EC)–electroflotation (EF) process. The optimal operating conditions were determined and applied to a textile wastewater. Initially a batch-type EC–EF reactor was operated at various current densities ranging from 11.55 to 91.5 mA/cm² and various electrode gaps (1, 2 and 3 cm). For solutions with 300 mg/L of silica gel, good turbidity removal (89.6%) was obtained without any coagulant when the current density was 11.55 mA/cm², and with initial pH at 7.6, conductivity at 2.1 mS/cm: the treatment time was hold for 10 min and the electrode gap was 1 cm. Application of the optimal operating parameters on a textile wastewater showed ...

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