Bubble Dynamics of Batik Dyeing Waste Separation Using Flotation

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Abstrak

Batik waste can increase water characteristics, such as turbidity, color and total suspended solids (TSS). Thus, an efficient technique for separating Batik from the liquid to decrease these characteristics is needed. The aim of the current study was to understand the results of flotation using electrolysis and to investigate the bubble characteristics that influence the results of the flotation of Batik waste. Flotation studies have been conducted using electrolysis to produce bubbles to separate batik synthetic dye from the liquid. Research conducted with 316L stainless steel electrodes, inside a 100 cm tall acrylic pipe with an inner diameter of 8.4 cm and a voltage variation of 10, 15 and 20 V. Batik waste was mixed with distilled water. Commercial alum powder [aluminum sulfate, Al2(SO4)3.14H2O, that is 17% Al2O3] as the reagent was added to coagulate Batik waste in a ratio of 1 gram per 10 ml of Batik waste. The results showed that flotation of Batik waste can be used to separate Batik waste with the addition of alum. Alum was shown to be capable of acting as a collector in this type of waste separation. The results showed that flotation using electrolysis could be an effective method for reducing turbidity, color and TSS.