

Removal of reactive dyes by quaternized coconut husk

ABSTRACT

Coconut husk modified through the use of N-(3-chloro-2-hydroxypropyl)-trimethylammonium chloride was evaluated for its ability to remove reactive dyes from aqueous solution. Sorption of dyes was pH dependent and favorable sorption occurred at low pH. In contrast, natural coconut husk showed very little uptake of these reactive dyes. The maximum sorption capacities of the modified coconut husks for Reactive Blue 2, Reactive Yellow 2, Reactive Orange 16 and Reactive Blue 4 were 128.9, 182.2, 254.5 and 423.7 mg/g respectively. Column experiments using textile effluent showed that the reactive and disperse dyes in the effluent could be successfully removed.

Keyword: Sorption; Reactive dyes; Quaternized coconut husk; Textile effluent