

## Quaternized wood as sorbent for reactive dyes

### ABSTRACT

Various species of local wood modified with N-(3-chloro-2-hydroxypropyl)-trimethylammonium chloride showed sorption enhancement for hydrolyzed Reactive Blue 2 (HRB) compared to the untreated samples. The enthalpy of sorption of HRB on Simpoh (*Dillenia suffruticosa*) was found to be endothermic. Maximum sorption capacity calculated from the Langmuir isotherm was 250.0 mg/g. Under continuous flow conditions HRB could be successfully removed. Dye removal was a function of bed depth and flow rate. However, the bed depth service time model of Bohart and Adams was not applicable in the HRB-quaternized wood system. The modified wood was applied to a sample of industrial textile effluent, and it was found to be able to remove the color successfully under batch conditions.

**Keyword:** Wood; Chemical modification; Biosorption; Reactive dyes