

Adsorption Properties of Dyestuffs on Hollow Activated Carbon Fiber from Biomaterial Template

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This study focuses on the adsorption behavior of typical dyestuffs (methylene blue and reactive black 5) on hollow activated carbon fibers (ACFs) obtained from Kapok- and Hasuo-seed based biomass. It was found that the adsorption of dyestuffs on ACFs increased with increasing pH and temperature. In addition, the Hasuo-seed based ACFs showed higher adsorption capacities than the Kapok-seed based ACFs for dyestuffs. It was also determined from the adsorption energy distribution results that the ACFs are having energetically heterogeneous surfaces. The results clearly indicated that the prepared ACF in this study could efficiently remove dyes dissolved in water.