

Utilization of Low-Cost Adsorbent Fly Ash for the Removal of Phenol from Water

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Abstract : In this study, a low-cost adsorbent carbon fly ash (CFA) was used for the removal of Phenol from the water. The adsorbent characteristics were observed by the Thermogravimetric Analysis (TGA), BET specific surface area analyzer, Zeta Potential and Field Emission Scanning Electron Microscopy (FE-SEM). The effect of pH, agitation speed, contact time, adsorbent dosage, and initial concentration of phenol were studied on the removal of phenol from the water. The optimum values of these variables for maximum removal of phenol were also determined. Both Freundlich and Langmuir isotherm models were successfully applied to describe the experimental data. Results showed that low-cost adsorbent phenol can be successfully applied for the removal of Phenol from the water.

Keywords : phenol, fly ash, adsorption, carbon adsorbents

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