

Adsorption Ability of Activated Carbon for Organic Removal from Wastewater

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In the field of wastewater treatment, adsorption using activated carbon has proved to be one of the most viable and simple method for the removal of organic carbon, especially those compounds that are chemically and biologically stable. However, the ability of activated carbon to remove organic material largely depends on their physical properties and the material from which the carbon is made. This study analyses the capacity of three different powdered activated carbons (PAC); wood based, coal based and coconut based and granular activated carbon (GAC), in the removal of dissolved organic carbon (DOC) from wastewater. The performance of PAC was far more superior compared to GAC in the ability to remove organic matter. The results indicated that 10 mg/L of wood based PAC was able to remove 90 % of DOC from wastewater with 4.7 mg/L of initial DOC. On the other hand the organic removal ability of 10 mg/L of GAC was only 25 %. The optimum pH values for the three PACs are 8, 9 and 10 for wood based, coal based and coconut based respectively. The nature of DOC removal at various influent organic concentration was also studied for the PACs.