

Textural and chemical characterization of activated carbons prepared from Rice Husk (*Oryza Sativa*) using a Two-Stage Activation Process

ABSTRACT

Activated carbons from agro-industrial wastes; rice husk; were prepared by physical and chemical activation using phosphoric acid as the dehydrating agent. A two-stage activation process method was used; with semi-carbonisation stage at 200oC for 15 minutes as the first stage followed by an activation stage at 500oC for 45 minutes as the second stage. The precursor material with the impregnation agent was exposed straightaway to semi-carbonization and activation temperature unlike the specific temperature progression as reported in the literature. All experiments were conducted in a laboratory scale muffle furnace under static conditions in a self generated atmosphere covering process parameters such as impregnation ratios. We found that by using this method, the AC5 had the highest iodine number and methylene blue adsorption capacity which was 506.6 mg/g and 319.0 mg/g respectively.