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Ferets diameter estimation of activated carbon for effluent treatment application

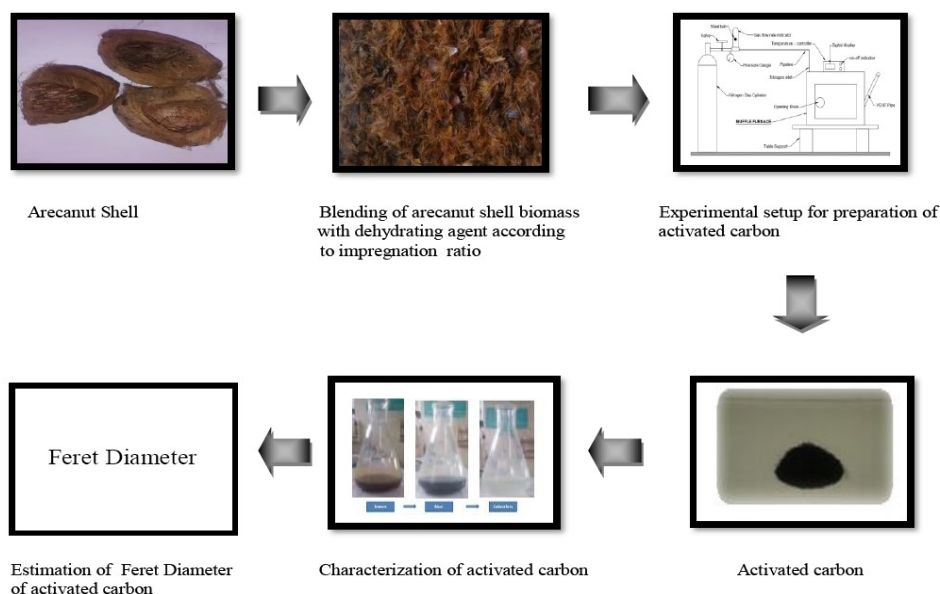
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In this paper, activated carbon was produced by chemical activation with phosphoric acid of agricultural wastes such as *Areca nut shell* of 25 micronmeter at 400 °C by slow pyrolysis. The BET surface area and iodine number surface area is calculated and compared. The FTIR spectra show the presence of activated carbon. The TGA revealed, activated carbon is thermally stable at 480 °C. The SEM shows the incorporation of activated carbon particles leads to the systematic change in morphology of activated carbon. Surface area plot shows the details of morphological change caused by iodine number surface area. Ferets diameter is estimated to know circularity of the particle. Methylene blue number, acid adsorption value is calculated to know adsorption capacity of the carbon. Thus results proves selection of ferets diameter, activation temperature, and impregnation ratio is important in determining the quality of activated carbon obtained and its use in industrial waste water treatment.

Keywords: *Areca nut shell*, activated carbon, phosphoric acid, feret diameter.