

ABSTRACT

This research interestingly revealed findings from microwave carbonization of KOH pretreated pine biomass (pine bark) by the application of response surface methodology (RSM) and central composite design (CCD) experimental design and optimization tool. The activated carbons synthesized under various conditions, *via* the use of RSM and CCD gave high microporosity, low mesoporosity and relatively large surface areas. Their surface microstructures were studied by Fourier transform infra red spectrometry, thermogravimetric analysis, field emission scanning electron microscopy, energy dispersive analysis of X-ray and nitrogen sorptometry–desorptometry. This work provides a synthesis route for cheap activated carbons for various industrial and other scale-up applications.