



## Preparation and Characterization of Activated Carbon from *Brassica Juncea* and its Application for the Removal of Pb(II) from Ground Water at Pydibhimavaram Industrial Area, Srikakulam District, A.P.

J.V.S.K.V. Kalyani<sup>1\*</sup> and Ch. Sudhakar<sup>2</sup>

1. Department of Chemistry, Vignan Institute of Information Technology, Visakhapatnam, **INDIA**

2. Department of Chemistry, GIT, GITAM (Deemed to be University), Visakhapatnam, **INDIA**

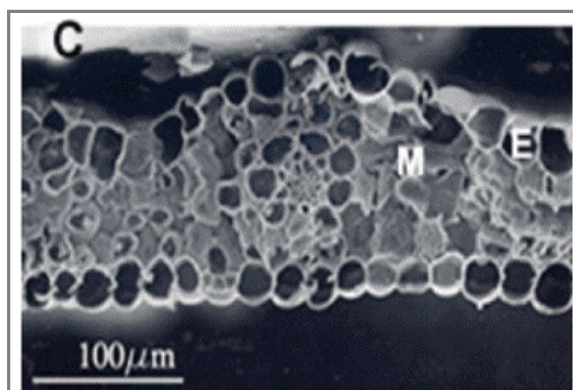
Email: [jvskvk77@gmail.com](mailto:jvskvk77@gmail.com)

Accepted on 13<sup>th</sup> May, 2019

### ABSTRACT

Active surface properties and high adsorption capacities containing activated carbon were prepared from *Brassica juncea* (ACBJ) by chemical process such as chemical activation with conc. sulphuric acid in a wt.ratio 2:1 (Biomaterial:acid). The Fourier transformation infrared spectroscopy and Scanning electron microscopy techniques were used to investigate the surface functional group and the morphology of the resulting sample. The physico chemical characteristics such as moisture, ash, conductivity, total carbon, apparent density, pH, phenol number, methylene blue, iron etc were studied for carbon content. Based on the results of the characterization studies, the activated carbon prepared by the impregnation of with sulphuric acid (30% solution followed by activation at 800 degrees centigrade) was selected as best quality adsorbent due to the highest surface area with large number of pores and low ash content for the removal of metals from aqueous solutions. The experimental results indicated that the prepared activated carbon is suitable for the removal of toxic Pb(II) from the ground waters of industrial area.

### Graphical Abstract



SEM Image of ACBJ (Magnification X2000)

**Keywords:** Activated carbon from *Brassica juncea*, FTIR, SEM, Adsorption, Lead.