

## **Biosorption of Zn(II) from aqueous solution by jatropha curcas press cake**

### **Abstract**

Biosorption of Zn (II) from aqueous solution using *Jatropha curcas* press cake was comparatively investigated over a range of variables (contact time, pH, and initial metal concentration) by batch adsorption experiments. Highest Zn (II) removal (~40 mg/L) was attained using 0.5g adsorbent for 100 minutes with initial Zn (II) concentration of 50 mg/L and pH 4. The adsorption data was best fitted with Langmuir isotherm ( $R^2 = 0.99$ ) and follows second order kinetic rate equation ( $R^2 > 0.99$ ). FTIR analysis revealed the availability of phenol, alcohol and carboxyl functional groups in *Jatropha curcas* press cake for the biosorption. XRD results confirmed the presence of Zn (II) in the press cake after adsorption process. These findings concluded that *Jatropha curcas* press cake is a suitable biosorbent for removing Zn (II) in heavy metal polluted wastewater.

**Keyword:** Zn (II); Adsorption; *Jatropha curcas* press cake; Wastewater; Heavy metal