

**REMOVAL OF Zn(II) FROM AQUEOUS SOLUTIONS USING
NH₄OH TREATED *Annona muricata* LEAF POWDER**

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ABSTRACT

REMOVAL OF Zn(II) FROM AQUEOUS SOLUTIONS USING NH₄OH TREATED *Annona muricata* LEAF POWDER

The potential of *Annona muricata* leaf powder as an adsorbent for the removal of Zn(II) in the aqueous solution was investigated. The *Annona muricata* leaf powder was characterized before and after the adsorption using a Fourier Infrared (FTIR) spectrometer. The zero-point charge for the adsorbent surface was determined and the result shows that the value of pH_{zpc} was 7.01. The effect of pH, sorbent dosage, initial concentration and contact time were investigated. The maximum uptake of Zn(II) was at pH 6 with 19.15 mg/g. The adsorption equilibrium was established after 20 minutes. The adsorption of Zn(II) by *Annona muricata* leaf powder increased with its initial concentration. Pseudo-second-order showed the best fitting with high correlation ($R^2 = 0.9722$). It was found that the adsorption fits well with the Langmuir isotherm equation. The maximum adsorption capacity for Langmuir isotherm was 77.39 mg/g. AHAMLPP can be used as an adsorbent for Zn(II) removal from wastewater due to the fast removal and high adsorption capacity of Zn(II).