

Biosorption of Cu (II) and Zn (II) from Real Wastewater onto *Cajanus cajan* Husk

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Abstract : In this preliminary work, locally available husk of *Cajanus cajan* (commonly known in India as Tur or Arhar), a bio-waste, has been used in its physically treated and chemically activated form for the removal of binary Cu (II) and Zn(II) ions from the real waste water obtained from an electroplating industry in Bangalore, Karnataka, India and from laboratory prepared binary solutions having almost similar composition of the metal ions, for comparison. The real wastewater after filtration and dilution for five times was used for biosorption studies at the normal pH of the solutions at room temperature. Langmuir's binary model was used to calculate the metal uptake capacities of the biosorbents. It was observed that Cu(II) is more competitive than Zn(II) in biosorption. In individual metal biosorption, Cu(II) uptake was found to be more than that of the Zn(II) and a similar trend was observed in the binary metal biosorption from real wastewater and laboratory prepared solutions. FTIR analysis was carried out to identify the functional groups in the industrial wastewater and EDAX for the elemental analysis of the biosorbents after experiments.

Keywords : biosorption, *Cajanus cajan*, multi metal remediation, wastewater

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