



Removal of Selective Metal Ions by Using Phenolic Resin Blended with Sulphonated *Solanum xantho carbum*, Link. Carbon

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ABSTRACT

In the present study, the removal of some selective metal ions was studied by using Ion Exchange Resins (IERS) synthesized from phenol formaldehyde resin (PFR) blended with sulphonated Solanum xantho carbum, Linn. Carbon (SXCC). In a new composite, ion exchanges were prepared by using different amount of SXCC in the blend of 0% to 100% (w/w). The CEC (Cation Exchange Capacity) of the composite was found to decrease with increasing the percentage of SXCC in PFR matrix. The synthesized ion exchange resins (IERS) are characterized by IR spectral, SEM images and thermal studies. All significant physico-chemical properties of ion exchangers were determined. The thermodynamic equilibrium constants are calculated by $Mg^{2+} - H^+$ and $Zn^{2+} - H^+$ ion exchanges on the resin having different amount of SXCC. It was concluded that the PFR sample could be blended with 30% (w/w) of SXCC, without affecting physico-chemical and thermal properties. Hence the blending with SXCC will absolutely lower cost of the ion exchange resin.

Keywords: Phenol formaldehyde resin, Composites resin, Cation exchange capacity, Sulphonated Solanum xantho carbum Charcoal.
