



## Novel Adsorbent prepared from *Passiflora foetida* seeds for the adsorption of Nickel(II) in aqueous solution

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**Abstract:** Water contamination by heavy metals creates lot of illness to human being and animals owing to its bio accumulation. Exploration of a suitable technology for the removal of heavy metals in water and waste water is highly warranted. In this work an activated carbon prepared from *Passiflora foetida* plant seed by chemical activation with KOH is used for the adsorptive removal of Ni(II) in aqueous solution. The effect of various controlling factors like pH, contact time, initial concentration of adsorbate and temperature on the adsorption of Ni(II) was investigated. The Ni(II) adsorption followed the pseudo second order kinetics with good correlation coefficient. The Langmuir model best described the adsorption with high correlation coefficient. The thermodynamic parameters such as Free energy change ( $\Delta G^\circ$ ) Enthalpy change ( $\Delta H^\circ$ ), Entropy change ( $\Delta S^\circ$ ) were evaluated. The negative value of  $\Delta G^\circ$  confirmed the feasibility and spontaneity of the process.

**Key words:** Activated carbon, Ni(II), Adsorption, *Passiflora foetida*, Kinetic models.

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