

**O 17. REMOVAL OF Cr (VI) FROM AQUEOUS SOLUTIONS USING APRICOT STONE
BASED ACTIVATED CARBON-IRON OXIDE MAGNETIC COMPOSITE**

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ABSTRACT: This work examines the adsorption of chromium ions on the magnetic-apricot stone shell-activated carbon (m-ASAC). ASAC was produced by the chemical activation of the apricot stone shell (AS) with phosphoric acid (H₃PO₄) in N₂ inert atmosphere. m-ASAC was regulated by co-precipitation method which is a combination of ASAC with Fe²⁺: Fe³⁺ salts. The prepared m-ASAC was characterized by Fourier Transform infrared spectrophotometer (FT-IR). The impacts of initial pH, amount of m-ASAC, temperature, contact time, and the beginning concentration of Cr (VI) were explored during the equilibrium studies. Adsorption isotherms of the Cr (VI) on m-ASAC was determined and correlated with Langmuir, Freundlich, Scatchard and D-R isotherm equations. Adsorption information appeared that the adsorption of Cr (VI) was equipped with Langmuir isotherm model. Under optimal conditions, the maximum adsorption capacity of Cr (VI) ions determined by Langmuir model was recorded as 69.44 mg/g. Thermodynamic parameters such as ΔG° , ΔH° , ΔS° , and E_a were calculated and the interaction of Cr (VI) with m-ASAC was found to be endothermic and spontaneous in nature.

Keywords: Activated carbon, Apricot stone, Fe₃O₄, Isotherm