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### Comparative characteristic Study of Agricultural Waste Activated Carbon and AC/Fe<sub>3</sub>O<sub>4</sub>–Nano Particles

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**Abstract:**Removal of dyes and other impurities in industrial polluted water at low cost using adsorption process. Large number of adsorbent materials used in this field based on the adsorption capacity and cost. In this paper deals about the preparation of activated carbon and activated carbon magnetic nano composite from cajanuscajan stem as a agricultural waste and X-ray Diffraction study, FTIR study of cajanuscajan stem activated carbon as well as activated carbon Fe<sub>3</sub>O<sub>4</sub>magnetic nano composite. From the obtained result of the XRD and FTIR we can confirm that the materials are pure with specific characteristics.

**Keywords :** activated carbon; adsorption; nanoparticle; pores; cracks.

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