

## **AGRICULTURAL WASTES AS ADSORBENTS FOR EFFECTIVE REMOVAL OF DYE FROM EFFLUENTS**

Adsorption is a process in which a soluble chemical substance (adsorbate) is removed from a fluid by contact with a solid surface (adsorbent). In adsorption, the forces of interaction between surface atoms and the adsorbate molecules depend on the distance between the surface of the adsorbent and the adsorbate molecule. In general, adsorption is the process by which a component moves from one phase to another while crossing some boundary. It was found that the observed effect of adsorption was achieved within porous solids and that it was the result of interactive forces of physical attraction between the surface of porous solids and component molecules being removed from the bulk phase. It is used It is used in industry for product separation and waste treatment.

The main objectives of this project are i) to evaluate the potential of seasonal agricultural wastes carbon prepared by activating with acid, alkali, heat and nano-particles for the treatment of textile effluents; ii) to study the influence of contact time, initial concentration of adsorbate, pH, temperature and adsorbent dose on the percentage removal of dye and adsorption capacity; iii) to develop proto-type bench scale reactor for batch and continuous studies on dye effluent treatment using agricultural wastes carbon

The expected outcome of this project are i) to train the students to become a consultant after graduation; ii) to provide hands on experience to design and fabricate ETP; iii) for process patenting; iv) technology transfer to clients on chargeable basis; v) waste utilization and solid waste Management



**STATIONERY ADSORBER DEVELOPED  
UNDER VMKVEC – IEDC PROJECT**

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