

## PREPARATION OF THE CARBON SORBENT FROM RICE HUSK AND WALNUT SHELLS FOR ELECTROADSORPTION

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Electroadsorption is the potential induced adsorption of solutes from electrolytic solution on the surface of an electrode. The simplest case is the adsorption of ions on an electrode with an opposite charge. Among the many features and properties of carbons and graphites, the electrical double layer and electroadsorption properties are well known. The readily accessible high surface area, and the specially designed pore structure suggest new and intriguing promises such as:

1. understanding the electrochemistry of carbon and graphite surfaces;
2. electrically controlled adsorption and separation processes;
3. electrical energy storage and delivery.

Activated carbon was prepared from carbonized rice husks and walnut shells by chemical activation process. Synthesized materials were characterized by scanning electron microscopy (SEM), Energy-dispersive X-ray spectroscopy (EDAX), X-ray diffraction (XRD), Raman spectroscopy, the Brunauer Emmett Teller (BET) method. The specific surface area of the products were increased from 20 to 4500 m<sup>2</sup>/g by the activation process in the new designed reactor. Raman spectroscopy analysis confirmed the presence of graphitic structure. The graphite content in the product also has a significant effect on the conductivity of the electrodes.