The Influence of Functional Groups on the Carbon Paper by Chemical Activation

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The adsorption and electrosorpion behavior of inorganic ions was studied at the activated carbon in relation to development of procedures for purification of wastewater. This carbon paper, which is from Donacarbo Co., for improving electrosorption capacitance was treated by acidic and base agents, KOH and HNO3 for several hours at a boiling point. These carbon electrodes were estimated by means of SEM and BET, and also evaluated surface acidity of chemically treated carbon papers by Boehm method. It was founded that activated carbon electrodes were made into variously different surface microstructure and chemical species. Cyclic voltammetry with various scan rates were performed to study the electric double layer capacitance of activated carbon electrodes. The activating agent, HCl and HNO3 had effect to increase double layer capacitance. The evaluation of electrical ion adsorption was carried out by self-fabricated CDI equipment using activated carbon electrode. Reversibility of adsorption and desorption electrically on carbon electrodes was excellent.
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