Property changes of activated carbon fibers surface modified by electric characterization

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In order to diversify application of carbonaceous adsorbent, ACF(activated carbon fiber) was characterized by electric decomposition. A commercial ACF was used as raw material and modified with various DC current in the acid bath of HNO_3, HF, H_2SO_4 and HCl solution. The specific surface area and pore size distribution of characterized ACFs were measured by adsorption analyzer to estimate their property changes and amount of hydrogen adsorption was measured by high pressure thermogravimetric analyzer for application of hydrogen storage. Morphology of modified ACFs were observed by scanning electron microscopy and transmission electron microscopy. In the result adsorption properties of ACFs were changed with the electric modification and hydrogen adsorption properties were also varied according to changes of adsorption properties.