

担持活性炭の細孔物性に関する研究

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Pore properties of reagent-loading activated carbon

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In this work, a mixture of potassium hydroxide, phosphoric acid and 2-imidazolidinone was used as catalyst for the removal of acetic acid, ammonia and acetaldehyde via loading the reagent on activated carbon. The influence of reagent-loading on the surface area and pore properties of activated carbon was investigated with the expectation to apply them as air purifier or filters. The results show that both the surface area and pore properties vary obviously when the reagent-loading is high. With a reagent-loading of 20%, the specific surface area and micro-pore volume of the activated carbon change with the pretreatment temperature for removing acetaldehyde despite an opposite situation for removing ammonia. Moreover, the external surface area and meso-pore volume hardly change with the different preparation temperatures. The peaks corresponding to micro-pore and meso-pore volumes are smaller with a higher reagent-loading. However, the size decrease of specified micro-pore is not evidenced.

Keywords : reagent-loading , activated carbon, filter, specific surface area, pore volume