

Influence of KOH Activation on CO₂ Capture of Carbon Nanofibers

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In this work, carbon nanofibers were successfully expanded intercalating KOH followed by thermal treatment in the different KOH/carbon nanofibers ratios. The aim was to improve the CO₂ capture properties of the carbon nanofibers by increasing the microporosity of carbon nanofibers. The influence of thermal treatment on the pore structures of carbon nanofibers were investigated by N₂ full isotherms, XRD, SEM, and TEM. The CO₂ capture capacity was measured by CO₂ isothermal adsorption at 298 K and 1 bar. From the results, it was found that the KOH/carbon nanofibers ratio had a major influence on CO₂ capture properties and textural properties of carbon nanofibers. The specific surface area and total pore volume, and pore size of the carbon nanofibers increased after thermal treatment.