

Toluene, NH_3 adsorption of ordered mesoporous carbon adsorbents with controlled pore size

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These days, factories are becoming more integrated and advanced, the need for air control technology with ultra-low concentrations is required. Adsorption is being used as one of the most useful methods as it shows high efficiency at low cost. Ordered mesoporous carbon(OMC) has a large surface area, a stable framework, and has ordered mesoporous channel, which makes it suitable for the development of advanced adsorbents. Also, it can be used as a model material that finds out which factors play an important role in the target gas by controlling the pore size and surface area. We compare adsorption of OMC made with different carbon precursors and find out the most suitable carbon precursor source for our target gas. Also, we developed more micropores in OMC by using phosphoric acid as acid catalyst. The materials were characterized by XRD, N_2 -adsorption, SEM, Raman, TPD and FT-IR.