Gas Adsorption Behaviors on Porous Silica Materials

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Porous silica materials have been vigorously studied owing to their scientific importance and great potentials in practical applications such as catalysis, separation and adsorption. We synthesized silica nanotubes, silica bulk and SBA-15 by using sol-gel method. Especially, silica nanotubes were synthesized using sol-gel template method. These materials have different pore structure and the characterization of pore structure of those has been performed via nitrogen adsorption and desorption isotherm at 77K. H_2, CH_4 and CO_2 adsorption behaviors on porous silica materials are investigated and the effects of pore structures on gas adsorption are discussed in this study.