

**Amphiphilic graft copolymer template-directed synthesis of MgO/TiO<sub>2</sub> composite nanoparticles and their applications in CO<sub>2</sub> capture**

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We previously reported an higher CO<sub>2</sub> capturing-ability of alumina templated by the amphiphilic graft copolymer, PVC-g-POEM. The porous alumina nanoparticles were fabricated by using selective interaction of alumina precursor to POEM hydrophilic domain and removal of hydrophobic PVC domain by annealing.

Herein, we prepared magnesium oxide-titanium oxide hybrid nanoparticles using PVC-g-POEM as a structure-directing agent with different weight ratios of each precursor. The combination of a benefit of PVC-g-POEM template and effect of mixing metal oxides was investigated in terms of improvement surface area and CO<sub>2</sub> adsorption capability.