

## Fabrication of mesoporous SiC from nanoporous silica templated preceramic polymers

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Silicon carbide is a promising material for various applications such as catalyst support, adsorption/separation, sensor technology and other fields. In this study, ordered mesoporous SiC material was prepared for the first time using allylhydropolycarbosilane as a preceramic polymer by utilizing ordered mesoporous silica molecular sieve SBA-15 as a template which was subsequently etched off after pyrolysis in a nitrogen atmosphere. For the good infiltration of the preceramic polymer, we modified SBA-15 template to hydrophobic by introducing trimethylsilyl onto its channel surface. The obtained samples were characterized using XRD, TEM and adsorption isotherm of nitrogen. The pore size of the mesoporous SiC is 3.6nm and the surface area is 260m<sup>2</sup>/g. The ordered structure of the prepared mesoporous SiC material was exactly an inverse replica of SBA-15 without involving structural transformation during the removal of the silica template.