# Preparation of heat-resistant and well-ordered mesoporous SiCBN ceramic using CMK-3 Template

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Well-ordered Mesoporous SiCBN ceramics have been successfully synthesized by using SiCBN precursor, which was prepared from borazine and 2,4,6-trimethyl-2,4,6-trivinylcyclotrisilazane via hydroboration using mesoporous carbon, CMK-3, as a hard template. The mesoporous SiCBN ceramic was simply prepared by pyrolysis of preceramic precursor incorporated into CMK-3 at 1400oC under inert gas followed burning the template without chemical etching. The prepared mesoporous SiCBN ceramic was characterized by FT-IR, 29Si MAS-NMR, small-angle XRD, TEM, and BET surface area. This resulting mesoporous SiCBN ceramic was extraordinary stable at high temperature, with fully amorphous up to 1600oC having little loss of mass and oxidation of durability.