

Supporting Information for

Synthesis and Structural Evolution of Dual-Boron-Source-Modified Polysilazanes Derived SiBCN Ceramics

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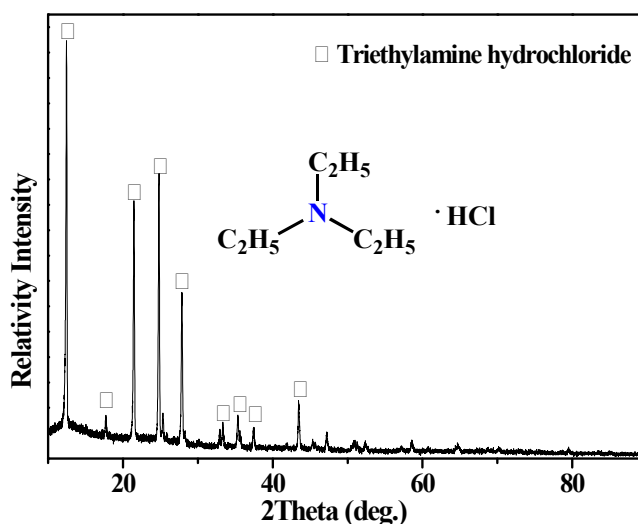


Fig. S1 X-ray diffraction (XRD) of the byproduct of PBSN2.

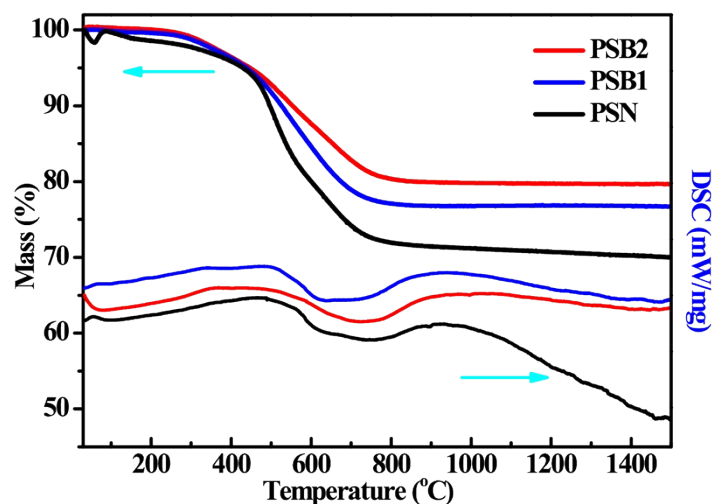


Fig. S2 Thermogravimetric analysis of precursor polymers PSN, PBSN1 and PBSN2. The temperature ranges of RT~1500 °C; heating rate: 10 °C min⁻¹; Ar atmosphere.

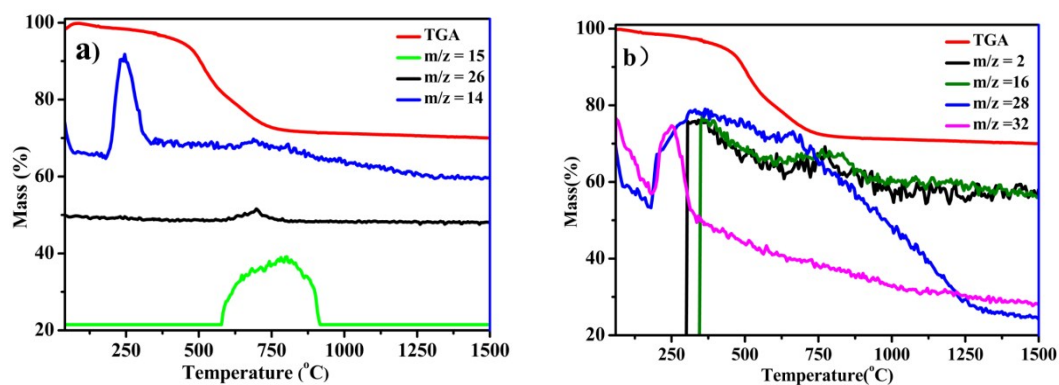


Fig. S3 TGA-QMS spectra of PSN showed the release of (a) CH₃, C₂H₂ and CH₂ fragments; (b) H₂, CH₄, C₂H₄ and CH₃NH₃ fragments. The temperature ranges of RT~1550 °C; heating rate: 10 °C min⁻¹; Ar atmosphere.

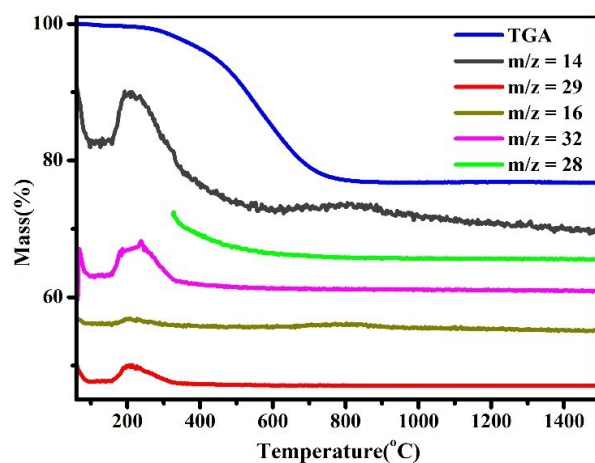


Fig. S4 TGA-QMS spectra of PBSN1 showed the release of CH₂, C₂H₅, CH₄, CH₃NH₃ and C₂H₄ fragments. The temperature ranges of RT~1550 °C; heating rate: 10 °C min⁻¹; Ar atmosphere.

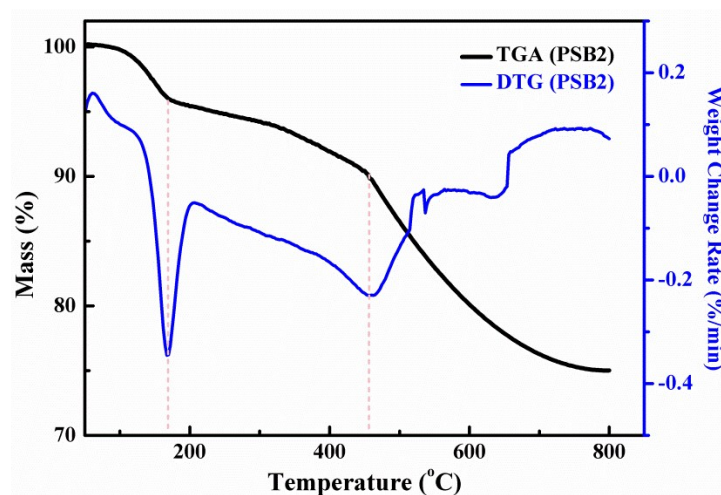


Fig. S5 TGA-DTG curves of liquid PBSN2 before thermal curing which decomposed in flowing Ar atmosphere. The temperature ranges of RT~800 °C; heating rate: 5 °C min⁻¹. To make sure the cure point of PBSN2.

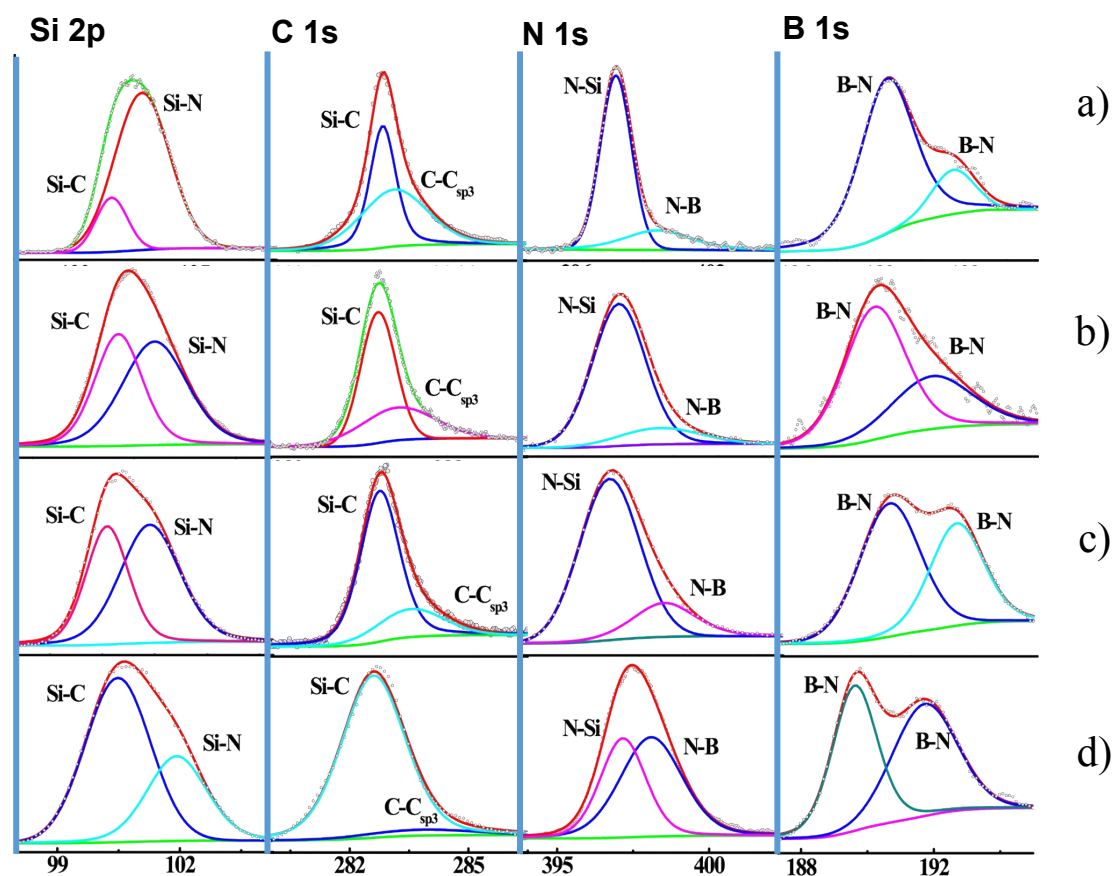


Fig. S6 Elemental XPS spectra of PBSN1 pyrolyzed at (a) 800 °C, (b) 1100 °C, (c) 1400 °C and (d) 1600 °C, respectively.