

HIGH TEMPERATURE CREEP OF A  $\text{Si}_3\text{N}_4$   
CERAMIC PREPARED BY HOT ISOSTATIC PRESSING

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High temperature creep deformation of hot isostatically pressed (HIP)  $\text{Si}_3\text{N}_4$  containing 4% wt. of  $\text{Y}_2\text{O}_3$  was investigated in an ambient-air atmosphere in the temperature range 1200-1400 °C in four point bending mode. A high temperature creep machine was designed and constructed for creep testing. The stress variation tests were conducted in the stress range of 75-300 Mpa at 1300 and 1350 °C the temperature variation tests were conducted in the temperature range 1200-1400 °C. The tests showed non linear dependence of creep rate on stress indicating a possible cavity growth mechanism during high temperature deformation. This was confirmed by the microstructural investigations on deformed samples.

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