

# Low Temperature Rapid Densification and Oxidation Behavior of $ZrB_2$ -SiC Using Spark Plasma Sintering



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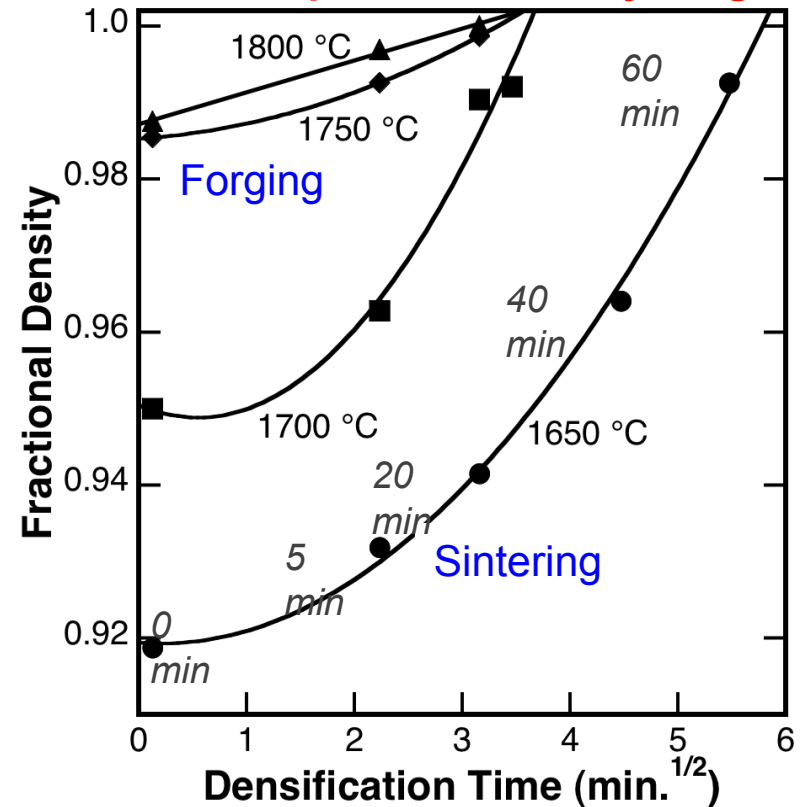
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• The goal of the CAREER Award project is to investigate oxidation mechanisms of multilayered ultra-high temperature ceramics. However, we first need to

1. Investigate effects of powder processing and SPS conditions on chemical and physical mechanisms enabling densification; and
2. Perform a critical analysis of high temperature oxidation rate measurements methods

in order to develop a fundamental understanding of complex oxidation behavior of UHTCs as related to their processing method.

**$ZrB_2$ -SiC**  
**Time-Temperature-Density Diagram**



(Walker, et al, J. Am. Ceram. Soc., 2012)