

## NASA GLENN HIGH TEMPERATURE EB-COATED CVI SiC/SiC MINICOMPOSITE TESTING AND CHARACTERIZATION

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Keywords: environmental barrier coating (EBC), thermally grown oxide (TGO), ceramic matrix composites (CMC), minicomposites, SiC/SiC

EB-coated SiCf/SiC minicomposites were used to investigate high temperature steam effects on the formation of TGO (thermally grown oxide) on the CVI (chemical vapor infiltrated) SiC matrix and the mechanical properties of that EBC-CMC (environmental barrier coating/ceramic matrix composite) system. A dual layer oxide-based EBC was applied to Hi-Nicalon™ Type S SiC fiber-reinforced, CVI SiC matrix minicomposites via a slurry-based spray deposition approach. The environmental barrier coating layers were sintered at high temperature (>2732°F). Next, coated minicomposites were exposed to a steam environment for 50 and 100 hours at temperatures ranging from 2200 - 2600°F prior to fast fracture tensile testing at room temperature. Fracture surfaces of tested samples were examined, then polished sections were prepared and characterized using SEM. The experimental procedure and results are described in this presentation.