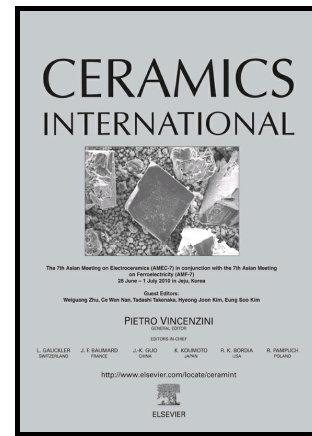


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Laser ablation resistance and mechanism of Si-Zr alloyed melt infiltrated C/C-SiC composite

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Abstract: Ablation resistance of C/C-SiC composite prepared via Si-Zr alloyed reactive melt infiltration was evaluated using a facile and economical laser ablation method. Linear ablation rates of the composite increased with an increase in laser power densities and decreased with extended ablation time. The C/C-SiC composite prepared via Si-Zr alloyed melt infiltration presented much better ablation resistance compared with the C/SiC composite prepared by polymer infiltration and pyrolysis process. The good ablation resistance of the composite was attributed to the melted ZrC layer formed at the ablation center region. Microstructure and phase composition of different ablated region were investigated by SEM and EDS, and a laser ablation

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