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论文

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3-D C/SiC复合材料的氧化行为

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OXIDATION BEHAVIOR OF 3 D C/SiC COMPOSITES

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摘要

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摘要 研究了 3-D C/SiC 复合材料的氧化行为。在航空发动机燃气环境中的实验结果表明, C/SiC 复合材料的氧化失重与材料内部的大量孔隙以及涂层和基体中的微裂纹有关, 其中基体内部的孔隙起着主要作用。在燃气中氧化后, C/SiC 复合材料力学性能的降低幅度比在干燥空气中的小, 这是由于燃气中的氧分压较低。

关键词: 碳化硅 复合材料 燃气 氧化

Abstract: The oxidation properties of SiC sealed 3 D C/SiC composites were researched in this paper. The test results obtained in combustion environments showed that the weight losses of the composites were related to the pores and the microcracks in coating and matrix, where the pores produced a main effect on the results. The mechanical properties of C/SiC oxidized in combustion gas decreased less apparently than in dry air, which resulted from the low partial pressure of oxygen in the combustion atmosphere.

Keywords: silicon carbide compo sites combust ion gas oxidat ion

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