



Environmental Thermal Barrier Coatings for Ceramic Matrix Composites: Thermal Tradeoff Studies

By -

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 22 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. Recent interest in environmental thermal barrier coatings (EBCTBCs) has prompted research to develop life-prediction methodologies for the coating systems of advanced high-temperature ceramic matrix composites (CMCs). Heat-transfer analysis of EBCTBCs for CMCs is an essential part of the effort. It helps establish the resulting thermal profile through the thickness of the CMC that is protected by the EBCTBC system. This report documents the results of a one-dimensional analysis of an advanced high-temperature CMC system protected with an EBCTBC system. The one-dimensional analysis was used for tradeoff studies involving parametric variation of the conductivity; the thickness of the EBCTBCs, bond coat, and CMC substrate; and the cooling requirements. The insight gained from the results will be used to configure a viable EBCTBC system for CMC liners that meet the desired hot surface, cold surface, and substrate temperature requirements. This item ships from La Vergne, TN. Paperback.



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