

**INDIGENOUS DEVELOPMENT OF THERMAL BARRIER COATING  
TECHNOLOGY ON SINGLE CRYSTAL  
GAS TURBINE ENGINE COMPONENTS AT DMRL**

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**Abstract**

Efforts made at DMRL for indigenous establishment of TBC coating deposition technology are presented. Details about the deposition of both Pt-aluminide bond coat and 7YSZ ceramic top coat on two single crystal gas turbine engine components are provided. Extensive micro structural characterization of the TBC has been carried out along with the evaluation of thermal cycling performance of the coating and study of the effect of coating on tensile and creep properties of the substrate superalloy.

**Keywords:** TBC; Thermal barrier coating; Pt-aluminide bond coat; 7YSZ coating; Superalloy