

METHOD AND APPARATUS FOR COOLING AN AIRFOIL

Abstract

[057] An improved cooling design and method for cooling airfoils within a gas turbine engine is provided which includes a plenum longitudinally located within the leading edge of the airfoils. Within the plenum are positioned a plurality of turbulence promoters to provide enhanced heat transfer within the leading edge. Also, the cooling design includes a plurality of inlets to receive cooling air from an internal cavity of the airfoil as well as a plurality of outlets located within a trench on the exterior surface of the leading edge through which the cooling air exits to film cool the leading edge.