METHOD FOR FORMING A THERMAL BARRIER COATING

ABSTRACT

Method including providing a nickel aluminide intermetallic overlay coating (24) on a superalloy substrate (22) and growing a controlled aluminum oxide on the overlay coating. The overlay coating is pre-oxidized to promote the growth of predominantly alpha phase alumina scale (28). The pre-oxidizing conditions may include heating the coated substrate to 1121 °C for two to eight hours under vacuum. The pre-oxidized overlay coating may be used as an environmental coating or as a bond coat for a thermally insulating ceramic barrier coating (26).

FIG.1