trodeposition or sputtering technique).

Although platinum aluminide coatings have not yet been applied to compressor components (run at temperatures of ~ 300 to 500°C) made from titanium alloys, the present results clearly show the superior performance of such coatings even at very high temperatures. The results also indicate that there is excellent compatibility between the coefficients of thermal expansion of the substrate and the platinum aluminide coating, so this may not pose a problem in coating actual components.

Hot corrosion can be a life limiting factor in gas turbine components, especially where aircraft fly at low altitudes across salt-laden seas. It is therefore desirable that any coating developed should have sufficient hot corrosion resistance, under the aircraft operating conditions, to enhance component durability against both oxidation and hot corrosion. Hot corrosion tests on platinum aluminide coatings applied on nickel-based superalloys have reported good performance under aggressive environments (13–14). Recently, the superior performance of platinum aluminide coatings in combating both oxidation and hot corrosion for nickel-based superalloys was confirmed (11). Platinum aluminide coatings therefore appear to be a possible coating material to protect titanium alloys from oxidation and hot corrosion, and to prevent alpha case formation.

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