trominium electrolytic plating). 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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References


Rhodium Bicentenary Competition

Johnson Matthey is marking the 200th anniversary of the discovery of rhodium by holding a competition for a new research project on any aspect of rhodium science, preferably aimed towards a new application. The prize will be a sponsored Ph.D. studentship and a loan of metal with which to conduct the investigation. The competition is open worldwide to scientists in universities and institutes of advanced research who train future scientists. Further details of the competition are available on the Internet at: http://www.platinum.matthey.com.

Scientists wishing to participate should E-mail to: rhodium@matthey.com, with a 1-page attachment of their research proposal. The successful project will have contact with Johnson Matthey scientists over its duration. The closing date for applying is 1st October 2001.

The winning proposal will be selected by a panel chaired by the Director of the Johnson Matthey Technology Centre. The winning entry will be announced in the January 2002 issue of Platinum Metals Review.