

ABSTRACT OF THE DISCLOSURE

A process is disclosed for forming an improved aluminide coating which includes one or more oxygen active elements. A metallic substrate is coated with an overlay coating, such as an MCrAl coating, including one or more oxygen active elements such as yttrium, hafnium and silicon, by a conventional overlay process such as low pressure plasma spray. A metal, preferably a Series VIII transition metal such as platinum, is applied to the substrate, for example by electroplating. The substrate is then aluminized, for example by chemical vapor deposition, and is preferably heat treated. A ceramic thermal barrier may also be applied. The present invention provides an active element containing aluminide coating having a more consistent composition and having improved durability, either as a standalone coating or as a bond coat for a subsequently-applied thermal barrier coating.