

METHODS OF PROVIDING ARTICLE WITH CORROSION RESISTANT COATING
AND COATED ARTICLE

ABSTRACT OF THE DISCLOSURE

According to the invention, an article that is exposed to high temperatures, e.g., over 1000°C during operation is disclosed. In one embodiment, a method for a gas turbine engine includes a directionally solidified metallic substrate, e.g., a superalloy, which defines an airfoil, a root and a platform located between the blade and root. The platform has an underside adjacent the root, and a corrosion resistant overlay coating such as an MCrAlY or a noble metal containing aluminide or corrosion inhibiting ceramic is located on portions of the blade not previously covered with such coatings, e.g., the underside of the platform and the neck. The applied coating prevents corrosion and stress corrosion cracking of blade in these regions. Where the airfoil is also coated, the airfoil coating may have a composition different from that of the coating on the underplatform surfaces.

Figure 1



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