

ABSTRACT

CERAMIC COATING COMPRISING YTTRIUM WHICH IS RESISTANT TO A REDUCING PLASMA

Particulate generation has been a problem in semiconductor device processing in highly corrosive plasma environments. The problem is exacerbated when the plasma is a reducing plasma. Empirically produced data has shown that the formation of a plasma spray coated yttrium-comprising ceramic such as yttrium oxide, Y_2O_3 - ZrO_2 solid solution, YAG, and YF_3 provides a low porosity coating with smooth and compacted surfaces when such ceramics are spray coated from a powder feed having an average effective diameter ranging from about 22 μm to about 0.1 μm . These spray-coated materials reduce the generation of particulates in corrosive reducing plasma environments.

Figure 6