

ABSTRACT

Proposed is an yttrium-based granular powder for thermal spraying. The yttrium-based granular powder includes at least one yttrium compound powder selected from the group consisting of Y_2O_3 , YOF , YF_3 , $Y_4Al_2O_9$, $Y_3Al_5O_{12}$, and $YAlO_3$, and a silica (SiO_2) powder. The yttrium-based granular powder is prepared by mixing the yttrium compound powder having a mean grain diameter of 50 nm to 900 nm and the silica powder having a mean grain diameter of 50 nm to 900 nm. The yttrium-based granular powder includes less than 10 wt% of a Y-Si-O mesophase. A thermal spray coating produced using the yttrium-based granular powder can exhibit low porosity, high density, and excellent plasma resistance.

Fig. 1