

Air plasma sprayed coatings of self-fluxing powder materials

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Abstract

© Published under licence by IOP Publishing Ltd. The article discusses the structural features of self-fluxing coatings obtained by plasma spraying air from entering the hub ring and the gas-dynamic focusing powder. It was shown that, unlike the unilateral spot powder inlet into the plasma jet, the use of the annular input node allows to increase heating efficiency and to accelerate the particles in the plasma stream. By optical and scanning electron microscopy that most of the particles forming the coating, in the plasma jet is in a molten or plasticized condition. Transmission electron microscopy revealed that high cooling rates of such particles contribute to the formation of γ -SMC supersaturated solid solution Ni-based average grain size of 80 nm.

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