

Deposition of Hard Chrome Coating onto Heat Susceptible Substrates by Low Power Microwave Plasma Spray

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ABSTRACT

Microwave plasma spray requires relatively low power, which is lower than 1 kW in comparison to other plasma spraying method. Until now, we are able to deposit Cu and Hydroxyapatite coating onto heat susceptible substrate, CFRP which are difficult for conventional plasma spray due to the excessive heat input. In this paper, a hard chromium coating was deposited onto SUS304 and CFRP by a low power microwave plasma spray technique. By controlling the working gas flow rate and spraying distance, a hard chrome coating with thickness of approximately 30 μm was successfully deposited onto CFRP substrate with hardness of 1110 Hv0.05. Furthermore, the coating produced here is higher than that produced by hard chrome plating.

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