

Titanium Carbide Laser Coating on Stainless Steel Substrate

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Abstract: *A sophisticated material processing technique called laser coating offers the ability to locally deposit different materials on extremely complicated and non-planar surfaces. It can be applied to restore or enhance wear, corrosion, and other surface-related characteristics of the base metal components. In this study, the primary attributes we take into consideration are surface hardness, wear resistance, and corrosion resistance. In the current work, TiC will be deposited on the base metal (stainless steel) using a pulsed Nd:Yag laser. By adjusting various laser coating parameters, such as laser power, laser scan speeds, etc., the resulting laser coating samples will be subjected to various mechanical (hardness, wear resistance) and metallurgical (microstructure and composition by SEM and XRD) studies*

Keywords: laser coating