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SURFACE MODIFICATION BY ELECTRO DISCHARGE COATING – A REVIEW

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Abstract

Electro-Discharge (ED) is one of the most successful machining technologies. It is used for removing material by application of heat energy by electrical sparking between metal and electrode. For several decades, Electrical-discharge machining has been an important machining process for the tool, mould and dies industries. It is now increasingly used owing to its ability to produce geometrically complex shapes, as well as its ability to machine hard materials. Recent innovative technologies in ED are Electro-discharge Coating, EDM of non conducting materials and Dry EDM. At present the available techniques for enhancing the surface, mechanical/physical/ topographical properties of components subject to wear, corrosion/ oxidation etc. include carburizing, nitriding, chromium plating and in some instances chemical/ physical vapour deposition (CVD/PVD), ion beam technique and plasma arc spraying. Such Processes are secondary operations which either require expensive in-house equipments or the use of sub-contract companies. They add to costs and lead times, significantly in some instances [1]. An alternative approach is deliberate surface alloying/ modification during EDM.

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