

عنوان مقاله:

Experimental Study on the Surface Modification by Electrical Discharge Process

محل انتشار:

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خلاصه مقاله:

The creation of modified layer on metal surfaces using new methods is one of the procedures in surface engineering which can improve the surface mechanical properties. The electrical discharge process is a new method that can form a modified layer on the metal surfaces. This study aims to improve of pure aluminum surface properties through Electrical Discharge process with Monel 400 electrode. In order to design the experiments, the pulse on time and the pulse current were considered as input parameters. The SEM images indicated that the increase in the pulse on time and the pulse current can increase the thickness of the modified layer. Based on the obtained results, the thickness of improved layer varied between 35 to 75 microns. The results of the EDX analysis showed the diffusion of the copper and nickel to the aluminum surface. Moreover, the results of microhardness testing of the surface layer showed that after Electrical discharge process, the surface hardness has increased and the surface hardness as 35 Vickers has reached more than 400 Vickers.

کلمات کلیدی:

Microardness, Electrical discharge, Pulse on Time, Pulse current

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