

Optimization Machining of Titanium Alloy Ti-6Al-4V by WEDM with Emphasis on the Quality of the Machined Surface

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The objective of this work is to assess cutting speed during the wire electrical discharge machining (WEDM) depending on the machine parameters setting (gap voltage, pulse on time, pulse off time, wire speed and discharge current) and follow-up assessment of the surface quality achieved. In order to achieve efficient machining the maximum cutting speed is required, however maintaining of the required quality and functional characteristics of the machined surface must be considered. Surface morphology during the wire electrical discharge machining is formed by a high number of craters, of which depth has direct effect on area parameters and profile parameters of the surface quality. These parameters were evaluated using Contactless 3D profile-meter based on the principle of coherence correlation interferometry IFM G4 from the Alicona producer.

Keywords: WEDM, Electrical Discharge Machining, Design of Experiment, surface roughness, titanium alloy

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