

# EFFECTS OF TITANIUM POWDER CONCENTRATIONS DURING EDM MACHINING EFFICIENCY OF STEEL SKD61 USING COPPER ELECTRODE

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## TÓM TẮT:

Electrical discharge machining (EDM) has found a widespread application in both tool and mould and aerospace industries. Therefore, improving the quality of the EDM process has become a major research area. In this paper, the effect of various titanium powder concentrations on the material removal rate (MRR), tool wear rate (TWR), and surface roughness (SR) using powdermixed electrical discharge machining (PMEDM) was carried out. The workpiece material used was SKD61 hot work steel and the electrode tool material was copper (Cu). The polarity of the electrodes and the concentrations of abrasive powder in the dielectric fluid were used as the input process parameters. Results showed that titanium powder suspended in the dielectric fluid of the EDM process enhanced the MRR without increasing the TWR. TWR and SR were improved in both cases of the polarity. The results showed an improvement in machining efficiency.

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