

# MACHINING PROPERTIES EVALUATION OF COPPER AND GRAPHITE ELECTRODES IN PMEDM OF SKD61 STEEL IN ROUGH MACHINING

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## TÓM TẮT:

Electrode materials have a great impact on the productivity and quality of electrical discharge machining (EDM). This study investigated the material removal rate (MRR) and surface quality after EDM using powder mixed dielectric fluid (PMEDM). The chemical composition of the surface which affected the tool wear rate (TWR) was evaluated. Titanium powder, copper (Cu) and graphite (Gr) electrodes were used. Results showed that mixing titanium powder in the oil dielectric fluid significantly affected MRR, TWR and the quality of the machined surface using EDM. Titanium powder mixed in the dielectric fluid increased MRR, decreased TWR, surface roughness (Ra) and thickness of the temperature-affected machined area. The chemical composition and the surface profile changed in a positive direction and the microscopic surface hardness increased. Results indicated that PMEDM is a viable method to improve the productivity, accuracy and surface quality in EDM.