## Abstract

This research studies the integrity of modified tungsten carbide surface that mixes with titanium powder in dielectric liquid by electrical discharge machining (EDM). The experiment was carried out on a tungsten carbide workpiece. The micro-cracks seem to disappear when the workpiece is discharge with technique that mixes titanium powder into working oil along with varying peak current and pulse duration. The EDMed surface morphology was examined with a Scanning Electron Microscope (SEM) and Energy Dispersive Spectrometers (EDS). Surface hardness was determined with a macro-hardness tester. The experimental results reveal that Ti powder suspended in the dielectric liquid can be deposited on a tungsten carbide with EDM method. The hardness of surface can reach 1750 HV which it close to the hardness of TiC layer.