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Development of Cu-SiC composite for electrical discharge machining electrode using powder metallurgy technique (Conference Paper)

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Abstract

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In this research, composites containing 10-50 vol% **SiC** whiskers reinforced **Cu** matrix were fabricated using **powder metallurgy technique**. The mixtures were blended in a ball milling machine with the addition of ethanol for 2 hours at 150 rpm. The mixtures were allowed to dry in an oven at temperature of 40 °C. Then, the mixtures were uniaxially compacted into a cylindrical pallet of Φ 13.5 x 2 mm under compaction pressure of 472 MPa. It was followed by sintering in vacuum furnace at temperatures of 800-950 °C for 4 hours. The density, microhardness, **electrical** resistivity, thermal conductivity and microscopy analysis of the sintered composites were studied and reported in this paper. © (2012) Trans Tech Publications, Switzerland.

Author keywords

Copper; **Electrical discharge machining**; **Powder metallurgy**; Silicon carbide

Indexed keywords

Compaction pressure; **Electrical discharge machining**; **Electrical** resistivity; **SiC** whisker; Sintering in vacuum

Engineering controlled terms: Ball milling; Copper; Electric conductivity; Electric **discharge machining**; Ethanol; Manufacture; Mixtures; **Powder metallurgy**; Sintering; Thermal conductivity; Vacuum furnaces

Engineering main heading: Silicon carbide

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