

Investigation of Ceramic-Metal Composites Produced by Electroless Ni Plating of AlN- Astaloy Cr-M

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Abstract : The microstructure, mechanical properties and metalgraphic characteristics of Ni plated AlN-Astaloy Cr-M powders were investigated using specimens produced by tube furnace sintering at 1000-1400 °C temperature. A uniform nickel layer on AlN powders was deposited prior to sintering using electroless plating technique. A composite consisting of ternary additions, metallic phase, Ni and ceramic phase AlN within a matrix of Astaloy Cr-M had been prepared under Ar shroud and then tube furnace sintered. The experimental results carried out by using XRD (X-Ray Diffraction) and SEM (Scanning Electron Microscope) for composition (10% AlN-Astaloy Cr-M) 10% Ni at 1400 °C suggest that the best properties as 132.45HB and permittivity were obtained at 1400 °C.

Keywords : composite, electroless nickel plating, powder metallurgy, sintering

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