

Abstract

In this work alumina samples were used to be joined with kovar alloy by using different filler types . Fillers were formed with different concentrations of Silver , Copper , and Titanium powdered metals . These fillers where by mixing powders and compacting by hydraulic press , and sintering by tube furnace with argon atmosphere of 1100 C and time of 60 min. Alumina/Kovar assemblies were joined in vacuum furnace of pressure of 2×10^{-4} torr at temperature of 850 C and time of 20 min. .X-ray radiography was used evaluates and detect the defect in contact area Thrtree types of defects were detected namely craqcks , voids and Non uniformity . Shear test was achieved to determine joint strength . Correlation between shear test (destructive test) and X- ray radiography (Non destructive test) was found.