

## ABSTRACT

The shear strength and microstructural characteristics of titanium-nickel joints joined by spot brazing technique was investigated in this work. The spot brazing process was performed with and without addition of 71Ag-28Cu-1Mg filler alloy at the interfacial region of titanium and nickel. The spot brazing was done with a current in a range of 1.0 kA to 4.0 kA with current interval of 0.5 kA. Welding voltage was kept at 2 V, electrode force was kept at 3.0 kgf / cm<sup>2</sup> and welding time of 50 ms was used. The strength of the joints was assessed using a shear test mode and the microstructure was studied using optical microscope, scanning electron microscope and energy dispersive spectroscopy. The strength of Ti/Ag alloy/Ni joints is higher than that of Ti/Ni joints when welding current was in the range of 2.0 kA to 4.0 kA had been applied due to the elimination of void and enlargement of weld nugget.

**Keywords:** Spot welding; Brazing; Microstructure; Strength