World Academy of Science, Engineering and Technology
International Journal of Materials and Metallurgical Engineering
Vol:10, No:03, 2016

Effect of Welding Parameters on Mechanical and Microstructural Properties of Aluminum Alloys Produced by Friction Stir Welding

Authors : Khalil Aghapouramin

Abstract : The aim of the present work is to investigate the mechanical and microstructural properties of dissimilar and similar aluminum alloys welded by Friction Stir Welding (FSW). The specimens investigated by applying different welding speed and rotary speed. Typically, mechanical properties of the joints performed through tensile test fatigue test and microhardness (HV) at room temperature. Fatigue test investigated by using electromechanical testing machine under constant loading control with similar since wave loading. The Maximum stress versus minimum got the range between 0.1 to 0.3 in the research. Based upon welding parameters by optical observation and scanning electron microscopy microstructural properties fulfilled with a cross section of welds, in addition, SEM observations were made of the fracture surfaces

Keywords : friction stir welding, fatigue and tensile test, Al alloys, microstructural behavior
Conference Title : ICFMPCA 2016 : International Conference on Fracture Mechanics, Polymers, Composites and Adhesives
Conference Location : Madrid, Spain
Conference Dates : March 24-25, 2016