

Many specific properties of aluminum alloys including light weight and good structural strength enable them to be applied for structural parts. Therefore, all the defects related to the presence of brittle inter dendritic and eutectic phases are eliminated [6]. But conventional fusion welding of aluminum alloys results in numerous welding defects which includes voids, hot cracking, distortion, precipitates dissolution, loss of work hardening and lack of penetration in the joints [2,3]. The aluminum alloys AA6XXX and AA5XXX are extensively used in the fabrication of aircraft structures and other structural applications [1]. Structural parts and frames composed of these aluminum alloys can be welded using sound welding techniques commonly used in industries. Friction stir welding (FSW) is an appropriate solid state welding technique to effectively join any combination of dissimilar aluminum alloys [4]. Shigematsu et al. [9] attempted to join 3 mm thick dissimilar AA5083 and AA6061 alloys using FSW and examined the microstructure and the mechanical properties. A nonconsumable rotating tool harder than the base material is plunged into the abutting edges of the plates to be joined under sufficient axial force and advanced along the line of the joint.