

Title: Texture dependence of residual stresses in diffusion bonded titanium to vanadium

Residual stresses may naturally develop from various processing and bonding techniques, and ultimately affect mechanical properties and material interfaces in either beneficial or detrimental ways. Before learning how to control residual stresses in materials, they must first be better understood. In this work, samples of commercially pure titanium and titanium alloy Ti-6Al-4V have both been separately diffusion bonded to vanadium. Residual stresses have been considered through a cross-correlation electron backscatter diffraction technique with sensitivities of 1×10^{-4} in strain and rotation.