**Residual stress measurement of Inconel 600 on different welding techniques by using conventional and XRD methods**

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**ABSTRACT:**

Residual stress is one type of secondary stress which exits even after eliminating all the loads. Components which are fabricated through welding will contain both residual stresses, either compressive or tensile. Estimation of residual stress is vital for analyzing distortion, service life prediction and to determine the failure reasons. Inconel 600 is widely used in applications such as gas turbine components, heat treating industry and aerospace which require good weldability at different temperatures, high strength and also for its excellent mechanical properties. The main motto of this research is to compare the residual stresses for Inconel 600 plates which were welded using different welding techniques by experimental and X-Ray diffraction analytical methods.

*Keywords: Inconel 600, residual stresses, TIG, resistance strain gauge*