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Studies on weldment performance of Ti/Al dissimilar sheet metal joints using laser beam welding

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Description Laser beam welding is more advantageous compared to conventional methods. Titanium/Aluminium dissimilar alloy thin sheet metals are difficult to weld due to large difference in melting point. The performance of the weldment depends upon interlayer formation and distribution of intermetallics. During welding, aluminium gets lost at the temperature below the melting point of titanium. Therefore, it is needed to improve a new metal joining techniques between these two alloys. The present work is carried for welding TI6AL4V and AA2024 alloy by using Nd:YAG Pulsed laser welding unit. The performance of the butt welded interlayer structures are discussed in detail using hardness test and SEM. Test results reveal that interlayer fracture is caused near aluminium side due to low strength at the weld joint.