

**A
REPORT ON
FRICTION STIR WELDING OF AA5052 AND AA6061
SIMILAR&DISSIMILAR ALLOY METALS AND
EFFECT OF MECHANICAL PROPERTIES**

**A Project report submitted for the partial fulfillment of the requirements for award of
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BACHELOR OF TECHNOLOGY

IN

MECHANICAL ENGINEERING

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CERTIFICATE

This is to certify that the project entitled “**FRICTION STIR WELDING OF AA5052 AND AA6061 SIMILAR & DISSIMILAR ALLOY METALS AND EFFECT OF MECHANICAL PROPERTIES**” is the record of the work carried out by **B. SAI BHASKAR VARMA (18815A0306), CH. RAKESH SIVA RAJ (18815A0310), G.SRAVAN SAI SRINIVAS (17811A0318), G. ADITYA PAVAN (17811A0319), AND S.PAVAN CHANDRA RAJU (17811A0354)** students of final year B. Tech in the department of Mechanical engineering. This work is done for the partial fulfillment for the award of **BACHELOR OF TECHNOLOGY** during the year 2017-2021.


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ABSTRACT

The recently developed innovative joining process, Friction stir welding (FSW) is connected to make the best quality of strength and hardness of the welded joints.. AA6061 & AA5052 aluminum alloys are widely used for fabrication of lightweight structures requiring a high strength to weight ratio in aerospace, naval, rail and automotive industries. As compared to the traditional fusion welding processes which are commonly used for joining structural aluminum alloys, friction stir welding (FSW) process is an emerging solid-state joining process in which the material that is being welded does not melt and recast. In this research work, an experimental investigation is to analyze the effect of welding parameters such as welding speed, tool tilt angle, and tool rotational speed on welding strength. The investigation was made on the tensile strength and hardness as well. aluminium alloy joints are tested by following sequential operation at digital equipment. The specimen cuttings are following American society for mechanical engineers (ASME). We are going to define the aluminium detailed strengths at different feeds and speeds for Similar and Dissimilar alloy metals at solid state.