

A

REPORT ON

**EFFECT OF MECHANICAL PROPERTIES ON FRICTION STIR  
PROCESSING WITH NANO MATERIAL**

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

IN

**MECHANICAL ENGINEERING**

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CERTIFICATE

This is to certify that the project entitled “**Effect of mechanical properties on friction stir Processing with nano material**” is the record of the work carried out by BolisetiLoksai (18815A0309), Seelamanthula Madhu babu (17811A0356), Nuthalapati Naveen Babu (17811A0346), KonaPavanKumar(17811A0333),Aerlanki Bhanu Prasad (18815A0301)students of final year B. Tech in the department of Mechanical engineering. This work is done for the partial fulfilment for the award of BACHELOR OF TECHNOLOGY during the year 2019-2020.

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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. The lightweight nonferrous materials are focused on aircraft hydraulic systems, fuel tank and transportation ventures due to its high strength to weight ratio and corrosion resistance. The joining of aluminium alloys is extremely troublesome in the conventional fusion welding process because of its cementing shrinkage, hot breaking, scatter, fumes and residual stresses. The friction stir processing is connected to enhance the mechanical properties of the friction stir welded joints by the addition of Nanoparticles. 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 and after reinforced with the nanomaterial at solid state.