

A
PROJECT REPORT
ON
“FABRICATION AND CHARACTERIZATION OF ALUMINIUM
METALMATRIX COMPOSITE REINFORCED WITH LIMESTONE
DUST”

Dissertation submitted to the
AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
Affiliated to JNTU Kakinada
For the partial fulfillment of award of the degree

B. Tech.

In

Mechanical Engineering

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CERTIFICATE

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This is to certify that the project entitled “FABRICATION AND CHARACTERIZATION OF ALUMINIUM METAL MATRIX COMPOSITE REINFORCED WITH LIMESTONE DUST” is the bonafied work carried out by S SATEESH (18815A0357), S SURYA TEJA (18815A0354), G MADHAV RAO (18815A0316), and P KIRAN (18815A0381) student of B.Tech (Mechanical Engineering), Avanathi Institute of Engineering and Technology during the academic year 2020-21 in partial fulfillment of the requirements for the award of the degree of Bachelor of technology in Mechanical Engineering.

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ABSTRACT

Aluminium metal matrix composites with reinforcements have a great potentials to satisfying recent demands of advanced engineering applications due to improved mechanical properties such as hardness, stiffness, ultimate tensile strength, toughness etc. The performance of these materials mostly depends upon selecting reinforcing materials. The aim of our work is deals with the fabrication, characterization and mechanical investigation in the effect of change in mechanical properties of aluminium metal matrix composites when limestone powder is added to it. Stir casting is the method is used to fabricate aluminium metal matrix composites reinforced with limestone powder in different weight fractions of 2.5, 5, 7.5, 10 and 12.5%. Specimens were cut from the fabricated laminate according to the ASTM standards for different experiments. We conduct the Rockwell hardness tests on the specimens to find its mechanical properties. The dry sliding wear behavior of composites is studied by using Pin-On-Disc wear and friction testing machine. Mechanical properties of such as the hardness are studied and compared the obtained results with the results of unreinforced aluminum alloy.

KEYWORDS

Metal matrix composites; Limestone powder; Mechanical properties; Wear properties