

A Project Report on

**DEVELOPMENT AND FABRICATION OF LOW COST
CORRUGATED ROOFING SHEETS USING RED MUD (AN
INDUSTRIAL WASTE) COMPOSITES**

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ABSTRACT

Metal matrix composites are used mostly in space ships, aerospace, automotive, nuclear, biotechnology, electronic and sporting goods industries, but due to their high cost, experiments are usually done to reduce the cost of the composites and inexpensive materials are utilized for metal matrix composites.

Red mud emerges as the major waste material during production of alumina from bauxite by the Bayer's process. It comprises of oxides of iron, titanium, aluminium and silica along with some other minor constituents. Based on economics as well as environmental related issues, enormous efforts have been directed worldwide towards red mud management issues i.e. of utilization, storage and disposal. Different avenues of red mud utilization are more or less known but none of them have so far proved to be economically viable or commercially feasible. It is generally agreed that micro hardness and resistance to wear of MMCs is created by reinforcement and also the wear properties are improved remarkably by introducing hard intermetallic compound into the aluminium matrix. The reinforcing materials are generally SiC, Al₂O₃, TiO₂ etc and are costly. The present research work has been undertaken with an objective to explore the use of red mud as a reinforcing material due to its easy availability and contains all these reinforcement elements.