ABSTRACT

Since a piston is subjected to very high temperature condition along with extreme and sudden compression and tensile forces on combustion as well as on thrust sides, it calls for a material which has very high strength to weight ratio and has very high heat conductivity in order to minimize thermal fatigue. Usually sand-cast or die-cast aluminium is used for engines. pistons made of aluminium alloys are preferred when the alloys are lighter than their cast iron counter parts, provide suitable strength at high temperatures and show good thermal properties.

Aluminium and its alloys have an ever-growing demand in many industries such as aerospace, automotive due to their high strength to weight ratio and corrosion resistance. Our current work focuses on synthesis and tribological studies of aluminium LM27, boron carbide composites. In this case AL LM27 and boron carbide is reinforced with metal matrix composite in different percentages. Which results in higher tensile strength, hardness and significantly improved wear resistance as compared to the base alloy.

Keywords: AL-LM27, boron carbide, stir casting.