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Experimental Investigation on Dry Sliding Wear Behaviour of Hybrid Metal Matrix (Al-Al_2O_3-B_4C) Composite

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Abstract : Aluminium Metal Matrix Composites are being used in aerospace, marine and automotive industries since they give superior strength, stiffness and enhanced tribological behavior. In this investigation, Aluminium metal matrix composites reinforced with 5%wt. of Al_2O_3 and 5%wt. of B_4C particles was prepared by stir casting technology. Dry sliding wear behavior of the composite test was conducted by pin-on-disc testing apparatus. The most influence wear parameters such as applied load, sliding velocity and time period was selected. The Taguchi L27 (3^{13}) orthogonal array was selected for conducting the experiments. By using analysis of variance (ANOVA), the most influence parameters of wear rate of the composite was determined. It was found that the applied load as the most influencing the wear rate followed by the sliding velocity and time period.
Keywords: Dry sliding wear behaviour, Taguchi technique, Analysis of variance.

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