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Study of Tribological Behaviour of Al6061/Silicon Carbide/Graphite Hybrid Metal Matrix Composite Using Taguchi's Techniques

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Abstract : Al6061 alloy base matrix, reinforced with particles of silicon carbide (10 wt %) and Graphite powder (1wt%), known as hybrid composites have been fabricated by liquid metallurgy route (stir casting technique) and optimized at different parameters like applied load, sliding speed and sliding distance by taguchi method. A plan of experiment generated through taguchi technique was used to perform experiments based on L27 orthogonal array. The developed ANOVA and regression equations are used to find the optimum coefficient of friction and wear under the influence of applied load, sliding speed and sliding distance. On the basis of “smaller the best” the dry sliding wear resistance was analysed and finally confirmation tests were carried out to verify the experimental results.

Keywords : analysis of variance, dry sliding wear, hybrid composite, orthogonal array, Taguchi technique
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