

Article Abstract

Title:	Investigation on two-body abrasive wear behavior of titanium carbide filled glass fabric-epoxy composites- a Box-Behnken approach
Author(s):	C. Anand Chairman ¹ , S. P. Kumaresh Babu ^{1*} , Muthukannan DuraiSelvam ² , K.R.Balasubramanian ³
Address(es):	^{1*} Department of Metallurgical and Materials Engineering, National Institute of Technology Tiruchirappalli, INDIA ² Department of Production Engineering, National Institute of Technology, Tiruchirappalli- 620 015, INDIA ³ Department of Mechanical Engineering, National Institute of Technology, Tiruchirappalli- 620 015, INDIA *Corresponding Author: e-mail: babu@nitt.edu, Tel +91-431-2503462, Fax. +91-431-2500133
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Abstract:	The two-body abrasive wear behavior of Glass-Epoxy (G-E) composites has been evaluated by the addition of Titanium carbide (TiC) as a secondary reinforcement using pin-on disc equipment at an applied load of 5, 10 and 15N for various sliding distances (25, 50,75m) with 400 grit water proof Silicon Carbide (SiC) abrasive paper. By using Box- Behnken design the significant controlling factors and the interactions influencing the weight loss of the composites are identified. The results indicate that the addition of TiC in G-E composite increases the wear resistance considerably. It was found that highest wear resistance of G-E composite was achieved by the addition of 2wt. % TiC in particulate form. The presence of different wear mechanisms were analyzed and supported by SEM-micrographic examinations.
Keywords:	polymer matrix composites; wear; scanning electron microscopy; Box-Behnken Approach.