

Studies on wear behavior of flyash cenosphere filled carbon fiber reinforced polymer composite

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Abstract:

All composite samples were fabricated by hand lay-up technique. The mechanical tests were evaluated using Universal Testing Machine. The tribological tests were conducted using pin-on-disc apparatus and Dry sand/rubber wheel abrasive tester. The surface morphology of the worn surface in different wear experiments were analyzed using scanning electron microscope. The mechanical properties such as tensile strength, tensile modulus, % elongation, hardness, flexural strength and flexural modulus of the unfilled C-E and silane-treated FAC filled C-E composites were studied. Friction and dry sliding wear behaviour of unfilled C-E and silane treated FAC filled C-E composites for different applied load, sliding velocity and sliding distance were studied. The results of the study revealed that improved tribological properties and mechanical properties of carbon fabric reinforced epoxy matrix composites can be obtained by adding silane-treated FAC particulate fillers.