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EFFECT OF TiO2 NANO PARTICLES CONTENT ON TENSILE AN WEAR PROPERTIES OF GFRE COMPOSITES

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Abstract

In the present work, the effect of adding TiO2 nano particles with different contents (0, 1, 2, 3, 4, and 5 wt.%) to unidirectional glass fiber reinforced epoxy (GFRE) composite rods manufactured using pultrusion technique on the tensile strength and sliding wear resistance is studied. Pin-on-disk wear tests were conducted using different sliding speeds and applied loads. Results indicated an enhancement in the tensile strength and wear resistance of the GFRE rods as a result of adding TiO2 nano particles with a maximum improvement obtained at a content of 5 wt.%.