

Effect of TEOS Electrospun Nanofiber Modified Resin on Interlaminar Shear Strength of Glass Fiber/Epoxy Composite

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Abstract : Interlaminar shear strength (ILSS) of fiber reinforced polymer composite is an important property for most of the structural applications. Matrix modification is an effective method used to improve the interlaminar shear strength of composite. In this paper, EPON 862/w epoxy system was modified using Tetraethyl orthosilicate (TEOS) electrospun nanofibers (ENFs) which were produced using electrospinning method. Unmodified and nanofibers modified resins were used to fabricate glass fiber reinforced polymer composite (GFRP) using H-VARTM method. The ILSS of the Glass Fiber Reinforced Polymeric Composites (GFRP) was investigated. The study shows that introduction of TEOS ENFs in the epoxy resin enhanced the ILSS of GFRP by 15% with 0.6% wt. fraction of TEOS ENFs.

Keywords : electrospun nanofibers, H-VARTM, interlaminar shear strength, matrix modification

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