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Improvement of the Interlaminar Shear Strength on Surface Modified Glass Fibre/Stainless Steel Wire Mesh Reinforced Hybrid Composites

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Abstract: This paper investigates theinterlaminar shear behavior of surface modified glass fiber/ stainless steel wire mesh reinforced epoxy hybrid composites. The glass fiber is treated either by 1N solution of sulfuric acid or sodium hydroxide. The stainless steel wire mesh is also surface treated by either electro dissolution or sand blasting. The hybrid composites are fabricated using epoxy resin reinforced with glass fiber and fine stainless steel wire mesh by hand lay up method. The hybrid composite consisting of acid treated glass fiber and electro dissolved or sand blasted stainless steel wire mesh exhibits superior interlaminar shear property in comparison with the composites made without any surface treatment. The fine modifications identified on the surface texture of the glass fiber and stainless steel wire mesh enhances the bonding between the resin and reinforcement which improves the interlaminar shear strength.

Key words : Interlaminar shear strength, laminate.

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