

عنوان مقاله:

Curvature changes and weight loss of GFRP composites under thermal fatigue

محل انتشار:

ششمین کنفرانس بین المللی کامپوزیت، مشخصه سازی، ساخت و کاربرد (سال: 1397)

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خلاصه مقاله:

Study of the cured shape of unsymmetrical laminated composites has been extensively carried out by many researchers. In this paper, the curvature changes and weight loss of nano-composite plates under thermal fatigue are studied experimentally. All samples were made using unidirectional glass fibers and epoxy resin with stacking sequence of cross-ply laminates. Different weight fractions of multi-walled carbon nanotubes were considered (0%, 0.1%, 0.25%, 0.5%). The specimens were subjected to different number of thermal cycles. Then, the mass and curvature of composites were measured. It was observed that the rate of curvature changes of nano-composite plates under thermal fatigue condition decreases with addition of appropriate amount of MWCNTs. The most curvature changes were occurred during initial 50 cycles. Experimental results revealed that the number of thermal cycles is more noticeable parameter on the weight loss of composites than the addition of nanoparticles.

کلمات کلیدی:

Curvature, Weight loss, Glass fiber reinforced polymer (GFRP), Thermal fatigue

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