عنوان مقاله:

Effect of Nano SiO۲ Addition and Core Density on Buckling Behavior of Novel Sandwich Bulkheads Used in High-Speed Crafts Structure: A Comparative Study Using Taguchi Approach

محل انتشار:

پنجمین همایش ملی شناورهای تندرو (سال: ۱۳۹۶)

تعداد صفحات اصل مقاله: ۶

نویسنده:

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خلاصه مقاله:

This study analyzes the buckling behavior of balsa cored sandwich materials, which are commonly used as the bulkhead in the high-speed crafts structure. The sandwich specimens are prepared under different manufacturing conditions by changing the core density, the nano SiO۲ content at interfacial region between skins and core, and the nano SiO۲ content within the composite skins. The critical buckling load is adopted as the quality target. Experiments of nine experimental runs are based on an orthogonal array table and apply the Taguchi method approach to determine an optimal parameter setting. In this study, the identified models were utilized to predict the buckling properties of sandwich structures at each considered combination of input variables.

کلمات کلیدی:

Taguchi method/Buckling properties/Sandwich structures/Balsa wood/Nano SiO۲