

The Use of Real-Time Monitoring System Utilizing Single Fibre Bragg Grating Sensor for Composite Plate under Static Loading

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ABSTRACT

Embedment of FBG sensor in composite structures leads to the development of the smart structure. The smart structure has the ability to give real-time response under critical loading circumstances. The main objective of this paper was the development of a smart structure to view real-time changes when the structure undergoes static loading. The implementation of matched edge filter FBG interrogation system to convert wavelength variations to strain reading shows that the structure able to response instantly in real time when undergoing several loadings. The smart structure is capable of updating the changes instantly in real time and shows the weight detected without any error.

KEYWORDS: FBG sensor, smart structure, structural health monitoring, optical strain gauge