

Use of FBG sensors for SHM in aerospace structures

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- ...[show all 4](#)[hide](#)[Download PDF](#) (933 KB)

Abstract

This paper details some significant findings on the use of the fiber Bragg grating (FBG) sensors for structural health monitoring (SHM) in aerospace fiber reinforced polymer (FRP) structures. A diminutive sensor provides a capability of imbedding inside FRP structures to monitor vital locations of damage. Some practical problems associated with the implementation of FBG based SHM systems in the aerospace FRP structures such as the difficulty of embedding FBG sensors during the manufacturing process and interrelation of distortion to FBG spectra due to internal damage, and other independent effects will be thoroughly studied. An innovative method to interpret FBG signals for identifying damage inside the structures will also be discussed.

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Page %P

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