

# Impact location determination on thin laminated composite plates using an NIR-FBG sensor system

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## ABSTRACT

An integration of Structural Health Monitoring (SHM) into composite structures contribute towards the development of smart composites structure. Smart-structure offers an ability have a continuous and real-time information of its circumstances under critical loading applications. One of the main objectives in this research study was the development of the Fiber Bragg grating (FBG) sensor system for SHM of thin composite laminates. Not only that, this work has been utilizing the FBG sensors in the Near Infra-red (NIR) range; ~830 nm, as an alternative to the applications of the conventional 1550 nm FBG sensors. The capability of this sensor system was validated with the impact location determination test on a thin composite plate. It showed a very promising result whereby the relative error falls below 10%.

## KEYWORDS

NIR fibre Bragg grating; Optical sensors; Location detection; Composite plate

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