

MATERIALS AND STRUCTURES SYMPOSIUM (C2)  
Smart Materials and Adaptive Structures (5)

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RESEARCH ON THE APPLICATION OF FIBER BRAGG GRATINGS SENSORS FOR  
STRUCTURAL HEALTH MANAGEMENT OF COMPOSITES IN SPACECRAFT

**Abstract**

Fiber bragg gratings sensors(FBGs) were exceedingly compatible for composites because they could be embedded to real-timely monitor the composites structure without merely depression of its performance. Technics for the embedding of FBGs in the spacecraft composites structure were researched. FBGs were pre-embedded in the preprag to co-cured inspecting the composites' curing parameters of temperature and strain. Both data from the FBGs and strain gauges were contrasted for good consilience. It is explored that FBGs were used to identify the integrity of composites structure by distinguishing its eigenfrequency change. FBGs were prospective in the structural health management of composites in spacecraft with their signal multiplexing.