

## An approach and experimental technique for damage detection of composite panels using PZT sensor

### ABSTRACT

At present, the advanced composite materials have gained it acceptance in the aerospace, civil structures and mechanic industries and had increased dramatically from the late eighties to the beginning at this decade. This paper describes an experimental analysis of laminated composite panels made of three different types of fibers reinforced epoxy. The design and dimensions of Al-6061-T6 floor's panels are taken, while the same design and dimensions of these composite panels are used as well. The objective is to compare the mechanical properties, microstructure and thermal plastic analysis of these laminated composites with AL 6061-T6 alloy characterizations. In addition, vibration analysis of composite's panels is also performed using NI-LabVIEW and compared with experimental results of Al 6061-T6 panels.

**Keyword:** Structural health monitoring; Damage identification; PZT sensor; Data Acquisition; Composites; Statistical Analysis