



Wireless Monitoring Sensor

UTA (09-45)

Technology Need:

The aerospace industry is pushing toward condition-based maintenance which requires real-time monitoring and off-line inspection of mission critical components. Current temperature and crack detection schemes can only detect large-scale cracks and temperature variations because the sensors are too heavy to cover a small enough area to detect small variances. Also, many work by taking periodic measurements opposed to a continual monitoring due to the need for a continual power source.

Solution/ Offering:

To address this issue, researchers at UT Arlington have developed a passive wireless sensor based on MMV patch antenna technology that can be used for strain measurement, crack detection, fatigue measurement and temperature measurement.



Value Proposition:

- ✓ Remote interrogation without the need of a battery
- ✓ Frequency division sensor multiplexing
- ✓ High sensitivity to small deformations
- ✓ Compact size, low profile, conformal, and low fabrication cost

Industrial application:

- ✓ Strain measurement
- ✓ Crack Detection
- ✓ Fatigue measurement
- ✓ Temperature measurement

Patent Status:

- ✓ Issued Patent # US [8,594,961](#)

Current Stage:

- ✓ Prototype

Meet the Inventor



Professor Huang has an extensive industrial and academic experience at Bell Laboratories, FMC Corporation, and Purdue University prior to joining the University of Texas at Arlington. Her research interests are focuses on the development of various sensing technologies for structural health monitoring and material damage state evaluation. Dr. Huang's current research projects include the development of whitelight interferometry-based optical fiber sensors for absolute distance measurement, the study of early fatigue damage using 3D surface profiling, and the development of MEMS optical fiber sensors for real time monitoring of material microstructural changes.

Contacts:

Rakesh V. Pandit
202 E. Border Street, Suite 102
Arlington, TX 76019
P 817.272.1132
F 817.272.5808

rpandit@uta.edu
otm@uta.edu