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## Sensing Resolution and Measurement Range of a Passive Wireless Strain Sensor

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In this research, folded patch antennas are explored for the development of low-cost and wireless smart-skin sensors that monitor the strain in metallic structures. When the patch antenna is under strain/deformation, its resonance frequency varies accordingly. The variation can be easily interrogated and recorded by a wireless reader that also wirelessly delivers power for the antenna operation. The patch antenna adopts a specially selected substrate material with low dielectric constant, as well as an inexpensive off-the-shelf radiofrequency identification (RFID) chip for signal modulation. This paper reports latest tensile test results on the strain sensing limit of the prototype folded patch antenna. In particular, it is shown that the passive wireless sensor can detect small strain changes lower than 20 ue, and can perform well at a strain range higher than 10,000 ue.

**Ключевые слова:**

### Содержание.

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