The Office of Technology Management

UNIVERSITY OF TEXAS ARLINGTON

Tech ID: UTA 14-03

Artificial Skin: Self Powered, Tactile Pressure Sensing

INVENTOR: Zeynep Celik- Butler

TECHNOLOGY NEED

Increasing advances in the field of robotics, machines are more reliant on artificial electronic sensors to mimic the functions of the five human senses. Tactile sensing (sense of touch) is identified as a vital source of information for robots especially in applications involving human interaction. Sense of touch/pressure is also essential for prostheses as a feedback to the user. Mimicking the human skin requires the robot surface to be draped in a large area network of tactile sensors. Effective coverage requires the sensor network to conform to the robot surface, which is frequently non planar.

INVENTION DESCRIPTION/SOLUTION

Researchers have developed novel tactile sensors which are self-powered and do not need any external voltage bias for operation. The sensors can be conformed to non-planar surfaces and packaged robustly with environmental protection. These flexible tactile sensors would be suitable for a variety of applications in medical instruments and devices as well as smart cards. This invention provides means for dense pressure tactile sensing on non-planar surfaces with no powering equipment.

APPLICATIONS

- Wearable consumer electronics and Touch screen
- Robotics in the medical device industry
- Smart medical prosthetic devices
- Real-time healthcare monitoring

KEY BENEFITS

- Self-Powered
- Conformity to non-planar, irregular surfaces
- Fully packaged to withstand dust, moisture, temperature extremes and mechanical shocks

STAGE OF DEVELOPMENT

Prototyped and tested

INTELLECTUAL PROPERTY STATUS

Patent Granted

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