Docket #: S17-093

Flexible Three-axis Capacitive Static and Dynamic Tactile Sensor

Researchers in Professor Zhenan Bao's group at Stanford University have developed capacitive tactile sensors used to detect static and dynamic forces with varying magnitudes and directions. Common pressure sensors only measure one contact force which limits tactile sensing in robots. However, the circuitry in these improved sensors are specially configured to classify forces in a three-dimensional axis thereby effectively defining both the magnitude of the force and the direction of the force whether they be static or dynamic. The sensors are also created on flexible substrates for applications on curved surfaces, such as the human skin or a robotic hand, increasing the efficiency for dexterous robotic applications.

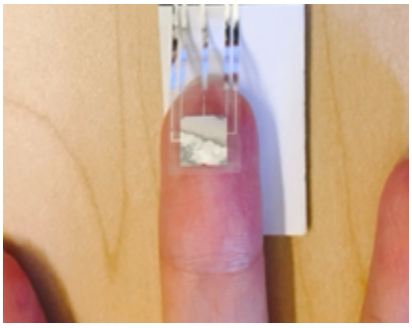


Figure description - The thin and flexible capacitive tactile sensor efficiently covers curved surfaces such as the human finger or robotic limbs

Applications

- Pressure Sensors
- Tactile Sensors
- Artificial Skin for use on prosthetic limbs or robots
- Biomedical Use
- Touch Sensors

Advantages

- Distinguish forces in three-dimensional axis
- Measure both static and dynamic forces
- Flexible
- Skin-like

Patents

- Published Application: 20200141818
- Issued: 11,860,048 (USA)

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