



TECHNOLOGY

Piezoelectric Paint Sensor

OVERVIEW

Problems with the gait and balance of a robot can interfere with its performance. Better understanding of how robot feet respond in contact with the ground can help correct such malfunctions. However, traditional piezoelectric sensors, which obtain ground reaction force data, are brittle, do not conform easily to the shape of the host structure, and can be difficult to work with.

Researchers at the University of Maryland have developed a novel piezoelectric paint to address these challenges. This paint may be sprayed or painted to conform to a substrate surface and can be applied to curved or irregular surfaces. No separate adhesive layer is required to keep it in place. Additionally, no moving or suspended parts are involved, unlike in conventional sensors. Finally, bending, stretching, squeezing, and deforming the composite produces electricity that can be harvested for many applications, including charging batteries.

Applications:

- Vibration and acoustic emission measurements for health monitoring of large structures.
- Research on the walking behavior of small-scale robots.
- Energy harvesting from bending, stretching, squeezing, and deforming the composite.

Advantages:

- Applicability to any irregular surface.
- No need of adhesive layer between the sensor and the substrate.

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Additional Information

INSTITUTION

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PATENT STATUS

Patent(s) pending

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Sensors/Monitors
- Microelectronics

EXTERNAL RESOURCES

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