



## TRIBOELECTRIC SELF-POWERED PRESSURE SENSOR AND METHOD

WARF: P240383US01

Inventors: Joseph Andrews, Vanessa Barton

Pressure sensors play a vital role in providing valuable information in a wide array of applications, including health monitoring, robotics, and wearable devices. To date, research efforts have greatly improved the sensitivity of sensors and their performance in ultrasensitive applications. However, these sensors often face limitations in their pressure range, with most focusing on optimizing the sensor's operation in the low and ultralow ranges. For intermediate, high-pressure, and high-speed applications, a sensor with a wide pressure range and high temporal resolution is exceedingly desirable.

### The Invention

UW Madison researchers have developed a pressure sensor that can measure pressure accurately over a wide range and with high speed. It is more durable than existing models, is easy to manufacture and low-cost. The pressure sensor includes two electrodes placed close to each other, with a friction layer positioned between them. When pressure is applied, the friction layer slides relative to the electrodes. This movement generates electrical signals (open circuit voltages) across the electrodes, which are used to measure the pressure. This technology enables self-powered force sensing which is beneficial to many fields, including wearable sensors and robotics.

### Additional Information

#### For More Information About the Inventors

- [Joseph Andrews](#)

#### Tech Fields

- [Analytical Instrumentation, Methods & Materials : Sensors](#)

For current licensing status, please contact Michael Carey at [mcarey@warf.org](mailto:mcarey@warf.org) or 608-960-9867