

Triboelectric nano-device for human health monitoring including vocal cord characterization

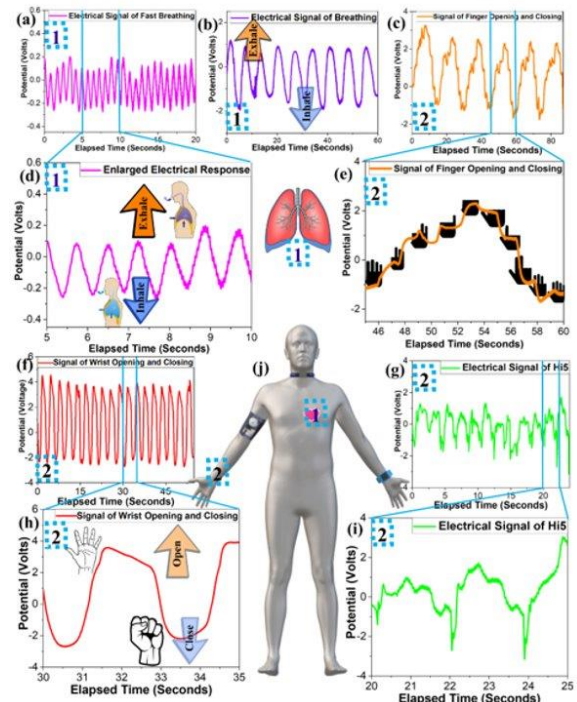
The present technology is a highly sensitive, triboelectric based, self-powered health monitoring device. It accurately detects small changes on diverse body motions and vocal cord vibrations (sound system quantification).

Problem

Current motion-sensors use piezoelectric, pyroelectric technologies consisting of ceramics, lead, and other materials that are not FDA approved, which can be toxic and expensive.

Solution

This technology is a ceramic-less body motion sensor of copolymer and paper. Materials are inexpensive and can be used inside the human body with jacketing of PTFE or PVDF polymer. Further, integration of triboelectric generator (TEMG) can reduce necessities of charging. The device is durable and can be used in everyday life for body movement sensory application.



Value Proposition

Cost-effective, highly sensitive sensing device, with the potential of replacing costly movement sensors worth \$65 to less than \$1 in mass production

Competitive Advantages

- A self-powering device that is flexible, lightweight, versatile, non-toxic, and biocompatible. Its compact size allows it to be integrated with wearable devices.
- High sensitivity with notable identical signals
- Structurally simple

Status of Development

- Prototype is near commercial grade and has been tested in an operational environment

IP Status

- Patent Pending
- Licensing Available