

**TITLE OF THE INVENTION: PIEZOELECTRIC SENSORS COMPRISING
ELECTROSPUN POLY[(R)-3-HYDROXYBUTYRATE-CO-(R)-3-
HYDROXYHEXANOATE] (PHBHX) NANOFIBERS**

ABSTRACT

Disclosed herein is a device comprising a PHA based copolymer layer comprising at least one of an electrospun ribbon of fibers of a polyhydroxyalkanoate based copolymer or the polarized polymeric composition obtained by the process of claim 1, wherein the layer is configured to exhibit one or more of a piezoelectric effect, a pyroelectric effect and a ferroelectric effect, wherein each of the electrospun ribbon of fibers and the polarized polymeric composition comprises a β -form of the PHA based copolymer present in an amount of from about 10% to about 99%, as measured by x-ray diffraction. The device can be configured for use as a sensor, an actuator, a nanomotor, or a biobattery.

[FIGURE 37]