



Shoe power generator (ROI #2007-10)

Description

- A piezoelectric polymer is integrated inside shoe heel or insole.
- The polymer generates electrical power from walking or running.
- Large power output, 2 to 20 mW depending on the design, is possible.

Advantages

- Simple. The generator works on compression and no complex bimorphs are needed.
- Large power output. Power output of 20 mW is feasible (2 mW has been demonstrated).
- Piezoelectric. No voltage bias is needed and the generator works with no external power.
- Light weight. The generator weighs only 6 grams – less than Lithium AAA Battery.
- Low cost and ecological. The transducer material cost is ~\$0.02 and contains no toxic chemicals and organic solvents.
- Soft for shock absorption. The stiffness is comparable to a regular shoe filling.

Areas of Application

- Shoe power generation.
- Pedometers.
- Running computers.
- Shoe integrated electronics.
- Safe lights (“blinking shoes”)

Patent Status

- US 8,076,825