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 is 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 weights 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