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* éclat - sparkle, brilliance, glamour; éclater - to burst

piezo powered high heels

Xiao Xiao DIY Manufacturing 3-22-12

- * Elegant way to power e-fashion garments
- * Stylish design for existing technology
- (* I want to make myself a pair of cool shoes)

<u>Tech</u>

Adapted Mark Feldmeier's circuit for piezo clicker





Built circuit with small clicker to light up LEDs (2 mJ/push)



Using BBQ grill igniter for more power (up to 20 mJ/push)

<u>Tech</u>



Currently getting up to 5mJ/push Need to source bigger transformer Hoping to get at least 10mJ/push

Given 2 steps/sec...

- 2mJ/push -> 4 mW
- 5mJ/push -> 10 mW
- 10mJ/push -> 20 mW
- 20mJ/push -> 40 mW

Applications

- Low power LEDs: 1.6 mW (red), 1.9 mW (yellow), 2.8mW (white)
- Accelerometer: 3.5V * 1.5mA = 5.25mW
- ATtiny13 (small microcontroller): at 3v, 0.72mW
- Speaker: .25W = 250 mJ/s. Let's say we want to play 10 seconds of sound, that's 2500 mJ
- Vibration motor: 3v * 75mA = 225 mW
- Spinning motor: 3v * 320 mA = 960 mW

<u>Form</u>

Played with clay, sketched more



Form:

- Electronics inside
- Connection to e-garments

Construction:

- Create 3d model
- Building with actual materials

Tech:

- Get better transformer
- Outputting steady voltage