

Dong-Kou Kim

Senior Division Engineering

Piezo Generator

Energy harvesting has grown from long-established concepts into devices for powering ubiquitously deployed sensor systems and mobile electronics. The following describes a compact piezoelectric generator and associated minimal circuit that is able to harvest electrical energy without batteries or other energy sources. I have developed a wheel consisting of a flexible piezoelectric structure which is mounted so that power is generated when the wheel rotates. When the piezoelectric materials are compressed, energy is safely extracted and stored. By using a rigid piezoceramic element in the wheel, power is provided to drive electrical devices such as LED's. The contributions of this project are twofold. First, the energy harvest wheel generates electric energy without pollution. Second, there is no additional power source or energy consumption.