

Device and method for harvesting energy

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Abstract: A miniature energy harvesting device for producing electricity from acoustical energy, stray electromagnetic energy, noise and from energy of different anatomical motions. The device comprises a housing, a mechanical spring engaged with the housing between a static and dynamic state and a first magnet engaged with the mechanical spring. The device further comprises a conductive grid freely moveable within a cavity of the housing. The device further comprises a composite structure comprising a fixed magnet and a piezoelectric material. The composite structure is engaged with the grid and in communication with the first magnet. The first magnet and the fixed magnet apply a force upon the piezoelectric material when the mechanical spring is in the static state to produce a base voltage. Excitation of the mechanical spring causes the piezoelectric material to generate an alternating voltage output having a peak voltage greater than the base voltage.

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