TECHNOLOGY

Segment-Type Energy Harvester

OVERVIEW

Background: Continual advances in portable electronics and wireless devices have created a large demand for compact energy sources. Batteries are one solution but are limited in lifespan and their need to be periodically replaced and disposed of creates environmental problems and can be inconvenient. Another solution is a mechanical energy harvester often found in the form of piezoelectric material. Piezoelectric materials convert mechanical energy into electrical energy by deforming or bending. Piezoelectric energy harvesters can recover electrical energy from mechanical vibrations, and can thus prolong battery life or provide all of the power to a device. However these devices must be tuned to a certain vibrational frequency, and are inefficient at other frequencies.

Researchers at the University of Maryland Department of Mechanical Engineering have created piezoelectric energy harvesting devices that are efficient at multiple frequencies. These devices allow a wider range of use around a given vibrational frequency, making them more efficient than current energy harvesters. This aspect also gives these new devices a wider range of applications.

Applications:
• Portable electronics such as cell phones
• Micropower applications
• Portable sensors

Advantages:
• Capable of generating electricity in multiple vibrational modes
• 7x power output increase over conventional technology

For additional information, please contact the Office of Technology Commercialization, University of Maryland College Park, via e-mail at otc@umd.edu or phone at 301-405-3947.

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Additional Information

INSTITUTION

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PATENT STATUS

Patent(s) pending

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Power Electronics
- Clean Technology

EXTERNAL RESOURCES

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