TECHNOLOGY

Hybrid Frequency-Adaptive Vibration Energy Harvester

OVERVIEW

Due to the ever increasing miniaturization of electronic systems that are ubiquitous in our daily lives, providing power for these small scale applications poses a significant problem. Supplying power with power lines can be difficult or simply not possible, while battery supplies at a smaller scale furnish limited power for a limited amount of time. As a result of these aforementioned problems, the development of power harvesting techniques within various systems has been of increasing interest. More particularly, harvesting of vibrations is rapidly emerging as a potential power source for small scale electronics applications, among others.

While harvesting energy from ambient vibration has been disclosed in the past, researchers at the University of Maryland have developed an improved adaptive harvesting technique via a tuned system which captures and converts the vibration energy into supplied power. A mechanical resonator is coordinated within a control electronics circuit to convert the mechanical energy into usable power. In addition, the tuned systems avoid using power-hungry or elaborate control electronics, thereby conserving a large portion of the harvested energy.

This novel energy harvesting approach more efficiently converts any lost vibration energy into a readily accessible power supply. Thus, the improved energy harvesting technique may provide power for additional electronics equipment for longer periods of time.

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

- Devices

EXTERNAL RESOURCES

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