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new circuit, which is the dual of s the SECE circuit, is named SMFE for Synchronous Magnetic Flux Extraction.

Electromagnetic vibration energy harvesting device ...
Electromagnetic Vibration Energy Page 16/44

Harvesting Devices introduces an optimization approach which is applied to determine optimal dimensions of the components (magnet, coil and back iron). Eight different commonly applied coupling architectures are investigated.

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comparison with respect to theirs

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3 It is not influenced by the ces environment since a device can be built without being exposed to the outside, so it can be applied as a plug-in type device, unlike other harvesting systems. 4 The vibration energy harvesting systems are electrostatic,

Page 26/44

electromagnetic, piezoelectric, and so on. Electrostatic harvesting systems are advantageous for miniaturization, but they have ....

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The concept Vibration Energy es Harvesting is the concept of converting vibration energy to electrical energy. It basically is as simple as it sounds. This is possible through different technologies, e.g. electromagnetic induction (used Page 28/44

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kinetic (vibration) energy. The es chapter introduces the fundamental principals of electromagnetism and describes how the voltage is linked to the product of the flux linkage gradient and the velocity. The flux linkage gradient is largely Page 30/44

dependent on the magnets used to produce the field, the arrangement of these magnets, and the area and number of turns for the coil.

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The kinetic energy caused by earthquakes, wind or traffic loads is not only dissipated by EM

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connected to EM dampers.

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A review of the vibration energy harvesting literature has been

undertaken with the goal of ces establishing scaling laws for experimentally demonstrated harvesting devices based on ton electromagnetic transduction. Power density metrics are examined with respect to scaling length, mass, frequency and drive Page 41/44

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