

MEMS based Vibration Energy Harvesting: An overview

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Abstract : The current race of miniaturization of circuits, systems, modules and networks has resulted in portable and mobile wireless systems having tremendous capabilities with small volume and weight. The power drivers or the power pack, electrically driving these modules have also reduced in proportion. Normally, the power packs in these mobile or fixed systems are batteries, rechargeable or non-rechargeable, which need regular replacement or recharging. Another approach to power these modules is to utilize the ambient energy available for electrical driving to make the system self-sustained. The current paper presents an overview of the different MEMS (Micro-Electro-Mechanical Systems) based techniques used for the harvesting of vibration energy to electrically drive a WSN (wireless sensor network) or a mobile module. This kind of system would have enormous applications, the most significant one, may be in cell phones.

Keywords : energy harvesting, WSN, MEMS, piezoelectrics

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