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(54) **SELF-POWERED PORTABLE ELECTRONIC DEVICE**

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(57) **ABSTRACT**

The present invention is directed to devices, systems, and methods having energy harvesting capabilities for self-powering portable electronic devices. The energy harvesting system preferably includes piezoelectric ceramic fibers that harvest mechanical energy to provide electrical energy or power to operate one or more features of the portable electronic device. The piezoelectric ceramic fibers may be in and/or on a structure of a portable electronic device and/or auxiliary devices/structures associated with a portable electronic device. The piezoelectric ceramic fibers allow generation of charge from mechanical inputs seen in everyday use of the portable electronic device and provide for the collection of generated energy. The energy harvesting capabilities also provide for conversion and storage of the harvested energy as electrical energy that may be used for powering one or more features of the portable electronic device. The piezoelectric ceramic fiber energy harvesting system may reduce and/or eliminate the need for external power sources and/or battery power.

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