

Pedestrian as generator

Implementing a stand-alone piezo power generating device in the urban context

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Abstract. During the past decade the implementation of energy harvesting sensor technology, at micro scale, has occurred due to the rapid growth of low-powered device usage, such as mobile phones, laptops, and the development of LED lights significantly increasing in efficiency. Studies have demonstrated that the ability of this technology to harvest energy from the human body, such as footfalls, can be used in the generation of electricity. Piezoelectric sensor technology has been investigated for this purpose, due to its significant advancement in the efficiency and its application in a variety of designs. This research investigates how pedestrians can become generators of their own service, through the use of piezoelectric sensor technology, in the form of safety lighting. Proposed urban design scenarios explore the opportunity implementing a piezo power-generating device along high traffic pedestrians pathways in the City of Melbourne (Australia), evaluating real time and storage options, considering harvesting the energy during the day and using it at night time when needed.

Keywords: Piezoelectric sensor technology, micro-scale distributed generation, public space.