

SHARE Durability is a key for energy harvesting

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Shi Hyeong Kim, et al., wrote the article entitled "Harvesting electrical energy from carbon nanotube yarn twist" (1). We conducted the large scale experiment at Tokyo station since 2006 for testing energy harvesting floors using piezoelectric modules where nearly million commuters go through the station everyday (2). Durability is a key for energy harvesting. The paper did not mention the durability of the proposed module. The durability is related to the performance degradation. In our first experiment, rubber covers were used in the energy harvesting mat (3). Women's high heeled shoes immediately destroyed piezoelectric modules. In the second experiment, stainless steel covers were used against the high heeled shoes (3). Million commuters bended the stainless steel covers. In the last experiment, specially sliced stone covers were used in the mat. The stone covers not only protect piezoelectric modules but also improve the durability of the energy harvesting floor (3).

References:

1. Shi Hyeong Kim, et al., "Harvesting electrical energy from carbon nanotube yarn twist," Science 25 Aug 2017, Vol.357, Issue 6353, pp.773-778
2. Y. Takefuji, "And if public transport does not consume more of energy?", Le Rail, pp31-33, April 2008
<http://neuro.god.jp/publications/pdf/rail.pdf>
3. Y. Takefuji, "Energy harvesting : from research to products", Japan Society of Applied Physics, 82, 11, pp964-968, 2013
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