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Piezoelectric Micro-generator Characterization for Energy Harvesting Application

Authors : José E. Q. Souza, Marcio Fontana, Antonio C. C. Lima

Abstract : This paper presents analysis and characterization of a piezoelectric micro-generator for energy harvesting application. A low-cost experimental prototype was designed to operate as piezoelectric micro-generator in the laboratory. An input acceleration of 9.8m/s2 using a sine signal (peak-to-peak voltage: 1V, offset voltage: 0V) at frequencies ranging from 10Hz to 160Hz generated a maximum average power of 432.4μW (linear mass position = 25mm) and an average power of 543.3μW (angular mass position = 35°). These promising results show that the prototype can be considered for low consumption load application as an energy harvesting micro-generator.

Keywords : piezoelectric, micro-generator, energy harvesting, cantilever beam
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