Numerical Modelling and Experimental Analysis of Piezoelectric Energy Harvester

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Abstract. This paper presents a numerical modelling and experimental analysis of a piezoelectric energy harvester based on the PPA1014 piezoelectric transducer. The numerical modelling utilizing the Finite Element Method (FEM) was conducted within the Ansys software, complemented by multiphysics simulations. Experimental analysis was performed using a specially designed measurement and testing apparatus and the LabVIEW measurement environment. The developed and validated piezoelectric transducer model will be further utilized in the design and optimization of the piezoelectric energy harvesting system in the future work of the authors.

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