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CHARACTERIZATION OF SHEAR MODE PIEZOELECTRIC ENERGY HARVESTERS

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Summary: A comparison of three shear mode energy harvesting designs that harvest energy from torsional stresses induced under ambient vibrations is conducted and presented in this paper. It is observed that the harvester with greater torsional compliance results in a more effective design with higher power and output voltage. The influence of adhesives used to bond the piezoelectric elements to the harvester is also explored and is found to significantly decrease the power output of the harvester with increasing adhesive thickness. These losses can be minimized by using high stiffness adhesive compositions.