
PIEZOELECTRIC ENERGY HARVESTING SYSTEM

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This project investigates the behavior of two types of piezoelectric harvester in response to different applied strains. Three tests are performed: two Deflection Amplitude vs. Voltage Generation tests and an Energy Charging Rate test. The two deflection tests are done on a Volture energy harvester and a piezoelectric disk. The energy charging rate test is done on a pair of piezoelectric disks. The strain test on the Volture energy harvester show inconsistent relationships between a piezoelectric harvester's natural frequency and its ability to generate voltage. The strain test on the piezoelectric disk are also not clear either since the voltage generated varies greatly after each tap. The results from the energy charging rate test indicate that a piezoelectric harvester generates energy at a higher rate when subjected to a higher-frequency vibration source than to a lower-frequency one. Future studies are recommended to make comprehensive conclusions regarding the relationships between a piezoelectric harvester's natural frequency and its ability to generate voltage. Further researches regarding vibration sources are also recommended as finding a suitable vibration source is found to be the most challenging part of this project.