Independent

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A study by the IER, Institute for Energy Research, show that around 66.9%, of the electricity in the U.S. alone rely on non-renewable fossil-based fuels, which harm the environment, the renewable sources used today do not reach their full potential due to the fact that they heavily rely on variables they cannot control, i.e. solar panels to sunlight. There needs to be an energy source that relies on controllable variables and is eco-friendly. The focus of this project was to build a self-staining apparatus that would have a continuous cycle of electrical and mechanical energy (using the piezoelectric effect) that did not rely on any uncontrollable outside source in order to harvest electricity. The idea was for the machine to be able to apply pressure (around 25,000 Pascal) using a linear actuator onto piezo discs (which convert mechanical energy to electrical energy). The electricity harvested would power the linear actuator (needing a minimum of 12 volts). Because the second layer was not leveled there was not enough contact to make the apparatus produce enough electricity. The machine did not generate a significant amount of electricity (0.001v-0.003v), and ultimately relied on the outside source (the battery). By changing the process the 2nd layer was build, the problem can be easily solved. Data was collected by calculating the pressure of the linear actuator. Then, recording the voltage “produced” from the piezo disk. All in all, the machine should hypothetically give off 36 volts once you feed it 12 volts.

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