

# The Development of a Renewable Energy Phone Case

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In this investigation, the challenge of creating a charging device for mobile phones was taken on. Utilizing the renewable energy of motion and light, piezoelectric generators and solar panels were used to harvest energy for the use of a phone. After extensive testing of various activities and lights, results suggest that this device in fact charges mobile devices. When considering which type of light is most effective for producing the most energy, fluorescent, LED and natural sunlight were tested for a span of one hour. When considering which type of motion is most effective for producing the most energy, jumping jacks, a run and a walk were tested for a span of thirty minutes. Upon analysis the data, it is indicated that sunlight and running produce the most charge for the battery. With the capability to charge the battery of a cell phone using the device, theoretically, the battery life has been infinitely extended. The device however is only as effective as its user, therefore certain conclusions cannot be drawn as to how much energy it will ultimately generate.