Solving the Energy Crisis One Step at a Time

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Finding a new sustainable, powerful, reliable and environmentally friendly form of energy has been a problem that has grown in importance over the last few decades due to the energy crisis. In this quest for renewable energy, scientists fabricated a new type of energy harvesting device, a nanogenerator, that are self-powered and strong enough to power microelectronics using mechanical energy. This research focused on building a device, the Power Pad, in order to improve the output of these nanogenerators in order to power common household devices as opposed to microelectronics. In order to fabricate such a device two different set ups were required, a Hybridized Power Pad and a Unit Scale Power Pad. The Hybridized Power Pad was tested in a lab environment in order to see if the nanogenerators had potential real world applications. The Unit Scale Power Pad was tested in a school for 10 days and in the County Center in order to derive if the device was durable enough for heavy traffic and if it could generate enough power per square foot to power household devices. The outputs recorded from all three stages were ~.45W, ~1kWh daily, and ~6W respectively. This demonstrated that there are many real world applications for the Power Pad.

Awards Won: