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Revolutionary Miniscule Windmills to Recharge Cell phones

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Researchers at the university of Texas have come up with a revolutionary windmill with a generator that can charge mobile devices very easily. What's more interesting is the size of the device-so miniscule that about 10 of such devices can easily fit in a space needed to fit a single grain of rice. Technically speaking, the device is so small that it measures about 1.8 mm at its widest point.

The device incorporates the use of grippers, pop-up switches, inductors and gears- all as tiny as a fraction of the diameter of a human hair.

The design credits to two fellow researchers- J.-C. Chiao, an electronic engineering professor and Smitha Rao, a research associate at the Texas University.

The tiny size of the device can allow hundreds of them to be mounted on a cell phone sleeve to recharge the phone. Once the user puts the sleeve on the phone, it simply has to be waved in air or be kept in a windy place. Once in contact with wind, the pressure of wind would propel and turn the tiny blades of the device, allowing the micro generator in it to produce electricity.

The design of the device takes inspiration from origami concepts, blended with the conventional lay-out of wafer-scale semiconductor devices.

The nickel alloy used in the device is flexible and the design is such that it requires minimal efforts for functioning, combined with each other, these two points have helped in making the device more effective.

The devices were successfully tested in Chiao's lab in September 2013 and it was found that even under strong artificial winds, the device suffered no fractures in the material and worked smoothly.

The device can be made in bulk using batch processes and so, the price for fabricating a single unit of it will be same as that for fabricating hundreds and thousands of it.

Because of the small power, flat panels with thousands of such devices can be installed in residential areas and allow for the production of cheaper, safer and good amount of electricity that can be used for many purposes.

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