



Electricity-free cellphone chargers?

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A report came out today that shed light on a novel invention that could be used for recharging your cellphone. Phys.org, a science website, said that a UT Arlington research associate, J.C. Chiao, and electrical engineering professor, Smitha Rao, have designed a micro-windmill device (so small that ten of them could fit on a grain of rice) that could generate wind energy to power many of your handheld gadgets.



[image:phys.org]

The tiny windmill is about 1.8 mm at its widest point and as such, would enable hundreds of them being able to be embedded inside the sleeve of a cell phone. These little windmills, then, would rotate from the breeze going through as one held them outdoors, and generate enough

energy to be used to recharge the cell phone's battery.

Taiwanese fabrication foundry WinMEMS has arranged exclusive rights to commercialize the concept, and has already begun work on potential applications. The company has also begun showcasing UT Arlington's works on its website and in public presentations, which include the micro-windmills, gears, inductors, pop-up switches and grippers, all these parts being as tiny as a fraction of a diameter of human hair.

Roa said about WinMEMS initial reaction, "The company was quite surprised with the micro-windmill idea when we showed the demo video of working devices," adding, "It was something completely out of the blue for them and their investors."

As to the micro-windmill's far-reaching impact, Phys.org noted, "These inventions are essential to building micro-robots that can be used as surgical tools, sensing machines to explore disaster zones or manufacturing tools to assemble micro-machines. Flat panels with thousand of windmills could be made and mounted on the walls of houses or building to harvest energy for lighting, security or environmental sensing and wireless communication."

Chiao added, "Imagine that they can be cheaply made on the surfaces of portable electronics, so you can place them on a sleeve for your smart phone. When the phone is out of battery power, all you need to do is to put on the sleeve, wave the phone in the air for a few minutes and you can use the phone again."

What's next? Micro-windmill-powered car?