Tag Archives: J.-C. Chiao

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New device could charge cell phone by waving it in the air

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A micro-windmill is pictured on the face of a penny. Photo courtesy of UT Arlington

We've all been there.

You're taking one of the most important calls of your life.

You're lost in the middle of nowhere.

You're waiting for a text message from that special someone.

And. . . your phone dies.

The sound it makes before it powers down resembles the feeling of your stomach sinking. You didn't want to spend the $30 on a car charger and pay phones are more commonly seen at antique malls than in public areas. Even if there is a payphone nearby, you probably never memorize numbers anymore.

A team of researchers at the University of Texas Arlington have created a device that would make charging a cell phone as easy as waving it in the air.

The tiny micro-windmill, about the tenth of the size of a grain of rice, generates wind energy and the researchers say they are optimistic that it would be a perfect device power cell phone batteries. For it to work, hundreds of the devices could be placed on the cell phone sleeve.

Smitha Rao and J.-C. Chiao originally designed the tiny windmill for a Taiwanese company called WinMEMS that specializes in fabrication techniques for the semiconductor industry.

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

The researchers said they were inspired by basic origami concepts and used nickel alloy to ensure the product was strong and flexible.

"The problem most MEMS designers have is that materials are too brittle," Rao said. "With the nickel alloy, we don't have that same issue. They're very, very durable."

Chiao added that, not only are the devices durable, they can also be mass-produced at a low cost.

"Imagine that they can be cheaply made on the surfaces of portable electronics," Chiao said, "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."

But, the researchers have bigger plans for the tiny windmills than simply charging cell phones. Chiao said that because of the discreet size of the tiny fans, thousands could easily be placed on flat panels and placed on the walls of houses to generate electricity.

The windmills went through a trial run in September of last year and were successful. WinMEMS and the university are currently discussing collaboration, and only time will tell when a simple wave of a hand will charge our cell phones.

With how much we depend on our phones, I suspect this product could fly off the shelves easily.

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