

PHOTO OF THE WEEK



Micro-Windmills Could Recharge Cellphones

Power cords may be a thing of the past if Smitha Rao and J.C. Chiao have anything to say about it.

The two, both affiliated with the University of Texas at Arlington, have designed a micro-windmill that generates energy -- energy that could be harnessed to one day recharge cell phones.

Rao, a research associate, and Chiao, an electrical engineering professor, built the device, 10 of which could fit in a grain of rice, according to the university (<http://www.uta.edu/news/releases/2014/01/microwindmill-rao-chiao.php>).

But how could these tiny windmills recharge a cell phone battery? Hundreds could be embedded in a sleeve for a phone, and then wind created simply by waving the cell phone in the air (or holding it in an open window on a windy day) would generate electricity that the phone's battery could then collect.

The university explains that Rao's designs "blend origami concepts into conventional wafer-scale semiconductor device layouts so complex 3-D moveable mechanical structures can be self-assembled from two-dimensional metal pieces...."

"The micro-windmills work well because the metal alloy is flexible and Smitha's design follows minimalism for functionality." Chiao said.

WinMEMS, a Taiwanese company, has an agreement with the university to explore commercialization of the technology. UT Arlington holds the intellectual property and has applied for a provisional patent. These inventions, the university says, 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. "I think we've only scratched the surface on how these micro-windmills might be used," Rao said.

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