

Teeny tiny windmills can recharge phones

By [Michelle Starr](http://www.cnet.com.au/member/Michelle%20Starr/) | January 13, 2014 | [1 comments](#)

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Michelle Starr is the tiger force at the core of all things. She also writes about cool stuff and apps as CNET Australia's Crave editor. But mostly the tiger force thing.

Researchers at the University of Texas, Arlington, have designed a microscopic windmill that, en masse, could be used to power mobile electronics.



One of the tiny windmills.

(Credit: University of Texas, Arlington)

A microscopic windmill could one day provide a portable method of charging devices: at just 1.8 millimetres at its widest point and able to fit 10 on a single grain of rice, the tiny machines can harvest energy from the movement of air.

They are the [work of research associate Smitha Rao](#) and electrical engineering professor J.-C. Chiao, who envision smartphone cases embedded with hundreds of windmills, which could charge the phone therein just by waving it through the air, or holding it by an open window on a windy day.

The windmills were crafted using origami techniques that allow two-dimensional shapes to be electroplated on a flat plane, then self-assembled into 3D moving mechanical structures. They're made of a durable, flexible nickel alloy that can stand up to strong winds without fracturing, helped by a minimal, aerodynamic design.

Rao and Chiao created the windmill for a Taiwanese superconductor company called [WinMEMS](#), which developed the fabrication technique and was interested in Rao based on her work in micro-robotics.

"It's very gratifying to first be noticed by an international company and second to work on something like this where you can see immediately how it might be used," said Rao. "However, I think we've only scratched the surface on how these micro-windmills might be used."

Chiao added that perhaps the windmills could be crafted into panels of thousands, which could then be attached to the sides of buildings to harvest wind energy for lighting, security or wireless communication.

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This has got to e a joke! Right? Cell phones?! I can see this technology used in many places lights atop a tower, street signs, but cellphones?! I can picture it now, people driving to work, each with their car window down and their arms out the window holding their cell phones in the breeze to recharge.

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