“Grain of rice” windmills to power smartphones of tomorrow

When you think of wind energy the first thing that springs to mind are vast fields of towering monoliths silently spinning away. But researchers at the University of Texas Arlington have taken the concept of a wind farm in a different direction by shrinking them down into ‘micro-windmills’ that could one day end up being used to charge gadgets like your smartphone or tablet.

The micro-windmills measure just 1.8mm across and are made out of flexible nickel alloy components that have been able to “operate under strong artificial winds” without breaking. The windmills are so small in fact that around ten of them could fit onto a single grain of rice.

Because the windmills can be manufactured by the hundreds of thousands on wafers, similar to how microprocessors are made, the cost to make them falls drastically. “Imagine that they can be cheaply made on the surfaces of portable electronics,” said researcher J.C. Chiao. “When the (your) phone is out of battery power, all you need to do is to put on the sleeve” with the micro-windmills on it and “wave the phone in the air for a few minutes and you can use the phone again.” It all sounds fantastic but the researchers haven’t given out figures on specific power output for the windmills.
A Taiwanese company that specialises in making micro-electro-mechanical-systems (MEMS) has already licensed the exclusive commercialisation rights for the technology and has begun to display it in presentations to some of its clientele. While we may not see the tiny windmills on any smartphones or tablets for a while this isn’t the only novel way of charging your cellphone we’ve seen emerge. Check out this story of some enterprising Kenyan engineering students from 2009 who charge their phones off of a bicycle.

Source & image: University of Texas Arlington

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