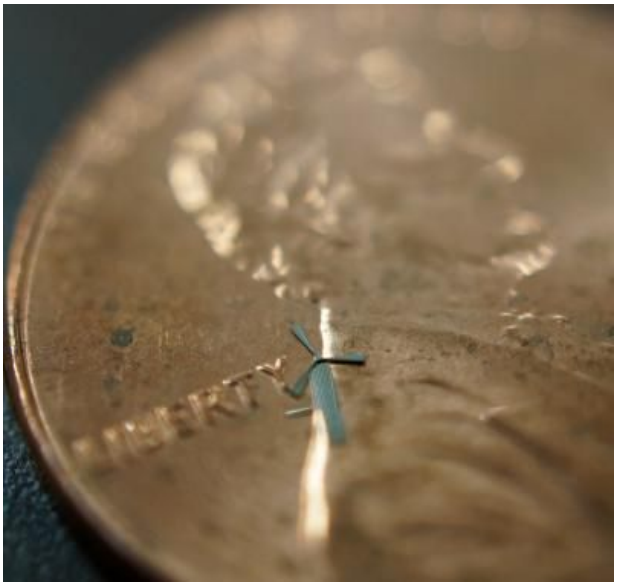
Tiny windmills could power future smartphones (maybe)

01/11/2014 at 10:55 AM by Brad Linder — 15 Comments

Mobile device makers have a few options for improving battery life. They can cram huge batteries into phones and tablets. They can improve the efficiency of chips, wireless modules, and screens. Or they can wait for battery technology to get better… which could take a while (although there are some advances in battery tech on the horizon).

Another approach is to let you recharge your battery on the go without stopping to plug in your device. Some companies already offer solar-powered smartphone cases, but fully recharging your phone with solar power can take days.

University of Texas Arlington researchers have a different idea: windmills. Tiny, tiny windmills.



Smitha Rao and J C Chiao designed a tiny windmill that's just 1.8mm thick at its widest point. You can fit 10 windmills on a grain of rice, or hundreds on a typical smartphone case.

Need a bit of extra juice for your phone? Just hook up a case with all of those windmills and wave it around in the air for a few minutes, or stick your phone out the window of your moving car to pick up some wind.

Odds are your arm would get tired or your car ride would finish before your phone was fully charged. But it might not take as long if you just need to generate enough juice to make a quick phone call in an emergency.

The little windmills are made from a durable nickel alloy and have been shown not to break under strong winds.

UT Arlington is working with WinMEMS Technologies to find commercial applications for the technology. At this point I haven't seen details about just how much energy one of these little windmills generates or how many you'd need to actually keep a phone charged for a reasonable amount of time. But if the technology advances it could pose an alternative to solar power or hand cranks in some situations.

via Gizmodo

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randomly selected · 3 months ago
Those tiny windmills will need to have tiny electrical generators attached to the blade before they can be useful in charging a phone. Also they look extremely easy to damage from the normal handling a phone case goes through.
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Bill Smith · 3 months ago
Can they make a tiny brass Don Quixote to go with it?
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bbc · 3 months ago
windmills on smart phone case..worst idea of year
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Bryan · 3 months ago
I would prefer to plug my phone into a car charger than wave it out the window and get less energy.
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al gore · 3 months ago
Funny!
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Guest • 3 months ago
God help us all!!
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Keith • 3 months ago
Still waiting to see the USB Foot Treadle chargers. Worked for Grandma's sewing machine, why not phones and tablets?
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agumonkey • 3 months ago
Makes me wonder how long before SoC so efficient they can be powered by piezoelectric clothes. Self sufficient computation/communication device.
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Penn Taylor • 3 months ago
It's obnoxious that the UTA folks are calling these "windmills", when they mean "wind turbine", but even moreso because the thing appears to be neither: it's a free-spinning blade.
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Low IQ • 3 months ago
all we need is a ZPM!
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Low IQ • 3 months ago
I'm afraid PETA is going to have a problem with tiny birds running into the tiny windmills!...
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Ian • 3 months ago
If micro windmills actually worked and were combined with a substance like Graphene the uses would be endless.
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Michael Thompson • 3 months ago
Wouldn't higher efficiency solar arrays be more practical?
We are surrounded by ambient light.
Why not make use of it?
Build them into the phones and the accessories, ubiquitous charging!
• Reply • Share ›

CyberGusa ↗ Michael Thompson • 3 months ago
How many people leave their phones out in the open when not in use?

Plus, solar technology is still by and large very inefficient for a given surface area to work with and many versions have the added issue of a lack of durability and on something that's handled as roughly as the average phone it means they likely won't last long and using a case generally doesn't help unless it's transparent to all the spectrum the solar technology works with...

So they're all stop gap measures at this point until real improvements in battery technology can eventually make it to market but that could still be a couple of years from now...

Probably better off carrying a second battery built into the phone holster that can wireless charge the phone when docked... as long as you remember to charge both at the end of the day it'll probably be more practical but they're going to try all sorts of things in the meantime...
1 • Reply • Share ›

Bryan ↗ Michael Thompson • 3 months ago
Wall outlets are even more practical in terms of the amount of electricity, and even more ubiquitous (they work well at night, on cloudy days, etc). I know your point was about weak ambient lighting, but if you're near a light bulb giving off significant energy, you're near outlets too.
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