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Micro-Windmill Technology: Future Uses Include Recharging Your Smartphone

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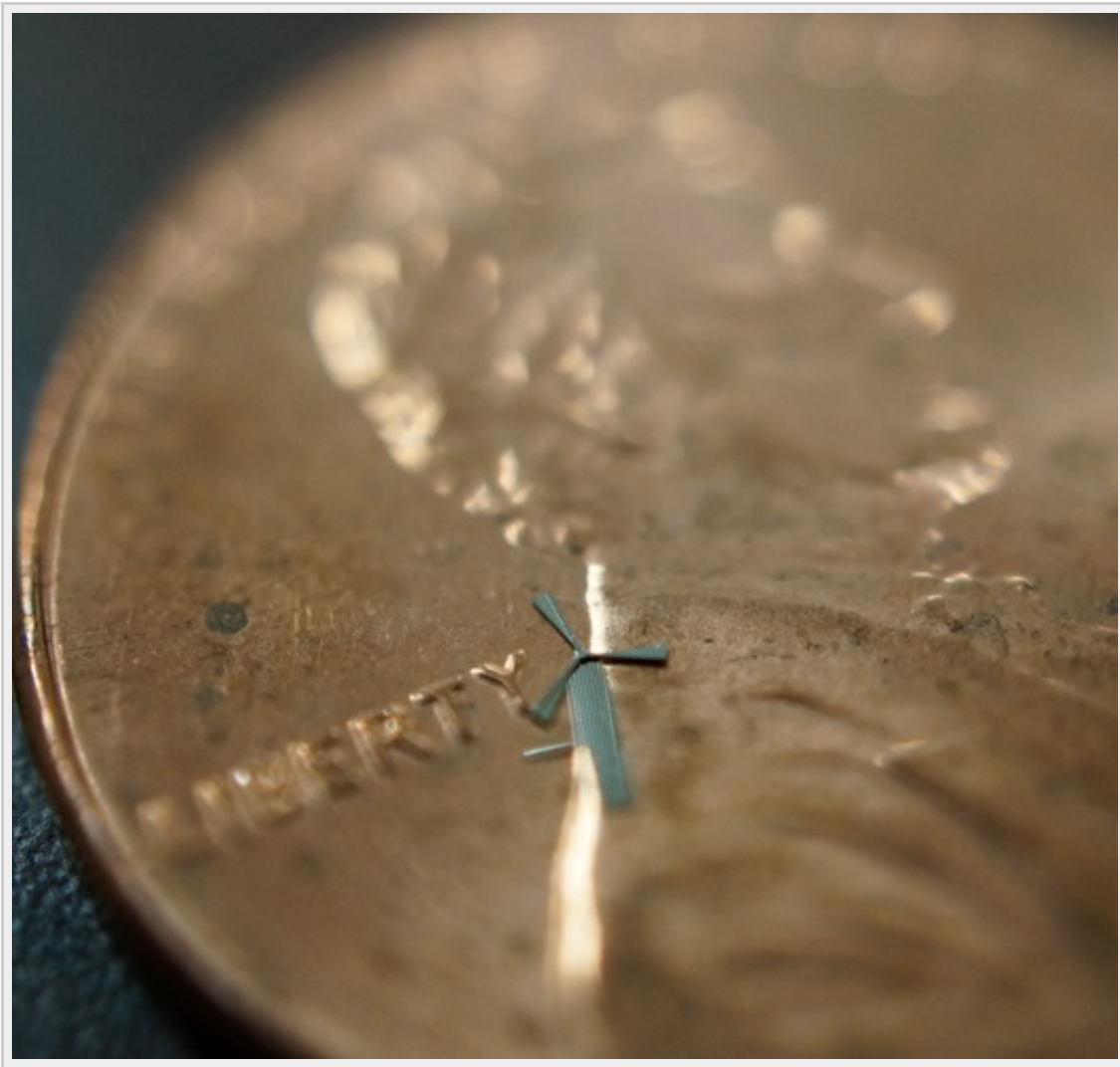
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Imagine waving your Smartphone in the air to recharge it! This is one of very recent developments in the use of micro-windmill technology.

The renewable technology of the “windmills” and to transform this to “micro-windmills,” this time, to power various gadgets like Smartphone, is very remarkable feat. This is an invention that will someday also “build micro-robots that can be used as surgical tools, sensing machines to explore disaster zones or manufacturing tools to assemble micro-machines,” the article from the phys.org states.



A micro-windmill is pictured on the face of a penny. Credit: UT Arlington

Smitha Rao, a UT Arlington research associate and J.-C. Chiao, an electrical engineer and former professor of Rao, are the inventors of this technology. Rao earned her Ph.D. in 2009 at UT Arlington.

A single micro-windmill has a size of 1.8mm at its widest point and a single grain of rice can fit about 10 of these minuscule windmills. In the future, Smartphone will hold hundreds of this tiny windmill, and these gadgets will be charged by waving it in the air or facing an open window and catching the breeze. In a related article by forbes.com, “an iPhone 4 could fit about 2,040 of the micro-windmills on its surface, each one generating electricity from ambient wind currents.”

According to the phys.org article, micro-windmills can be produced inexpensively, and can easily be mass-produced. With the use of nickel alloy and a smart aerodynamic design, the new invention is very, very durable and would not crack or fracture easily, even with strong winds. The works of Rao in micro-robotic devices apparently caught the attention of WinMEMS Technologies Co., a Taiwanese fabrication foundry. In the same article, Chiao mentioned that “WinMEMS became interested in the micro-electro mechanical system research and started a relationship with UT Arlington.” It has visited the UT Arlington team several times in 2013 to discuss collaboration.”

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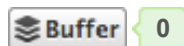
It has been agreed that UT Arlington will be holding the intellectual properties while WinMEMS will be exploring “commercialization” aspects of the partnership.

In the same news article, Chiao mentioned that “because of the small sizes, flat panels with thousands of windmills could be made and mounted on the walls of houses or buildings to harvest energy for lighting, security or environmental sensing and wireless communication.”

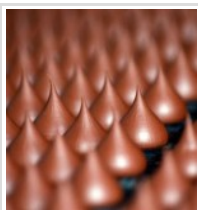
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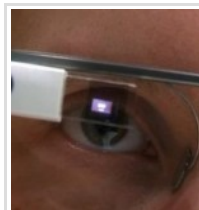
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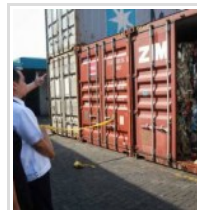
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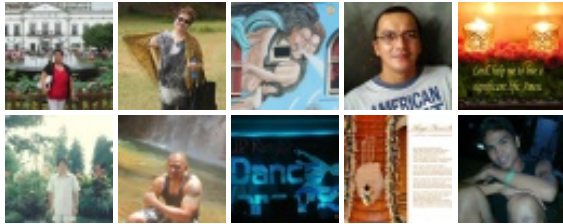
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