

# The Office of Technology Management

UNIVERSITY OF TEXAS  ARLINGTON

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## Micro windmills for mobile device charging

INVENTORS: Dr. J.C Chiao

### TECHNOLOGY NEED

Global market for alternative energy sources is increasing ten folds over the past few years, as is seen with the increase in use of fossil fuels that harm the planet's ecosystem. One of the energy sources that have great potential is wind energy. While large windmills are practical for large scale energy generation, their functionality is hard to replicate for small-scale applications like charging mobile devices. While there are numerous alternative source of energy that can power a mobile device, very little is explored with the capability of a windmill to charging mobile devices.

### INVENTION DESCRIPTION/SOLUTION

UTA researchers have developed the world's smallest and novel micro windmill that is 1.8 mm wide, a ten of such windmills can fit onto a single grain of rice. Hundreds of novel micro windmill could be installed in a single mobile device and can charge in a matter of few minutes. The novel invention is made of nickel alloy using microelectromechanical system (MEMS) technology capable of taking strong winds without breaking. The invention is easy to scale up and can be used for day to day devices that consume power. The windmill can be made on a large surface with batch processes, reducing the unit price for each device.

### APPLICATIONS

- Portable electronics
- Remote sensor devices

### KEY BENEFITS

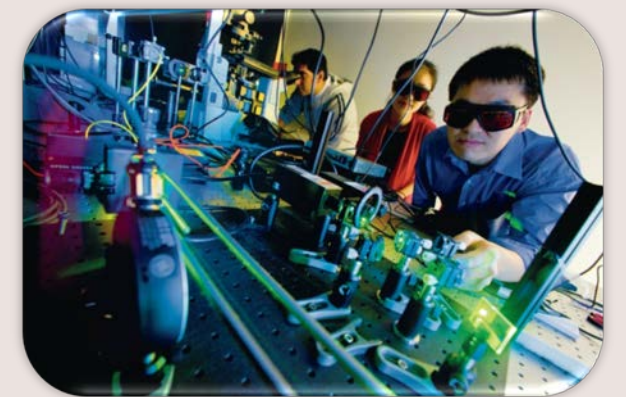
- World's smallest windmill- 1.8 mm
- Easy to scale up
- Alternate source of energy
- Less unit price per device
- Flexible

### STAGE OF DEVELOPMENT

Prototyped and tested

### INTELLECTUAL PROPERTY STATUS

Patent Pending



**More about the Inventors:**  
[Dr. J.C.Chiao](#)

### Contact information

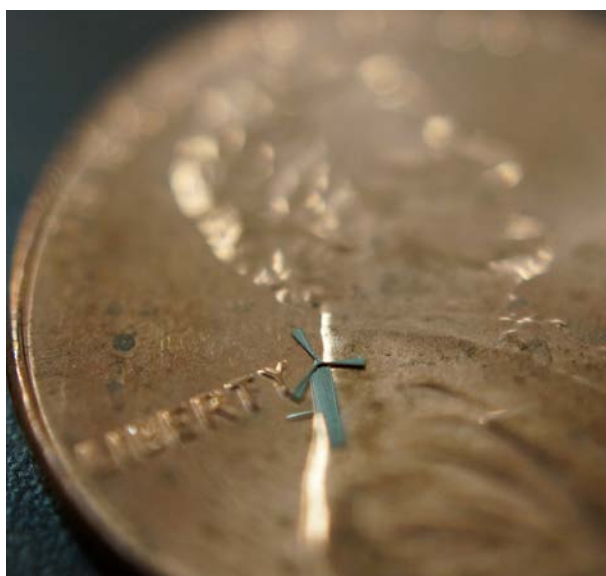
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Koffi Egbeto Selom  
[koffi.egbeto@uta.edu](mailto:koffi.egbeto@uta.edu)  
[otm@uta.edu](mailto:otm@uta.edu)

P: 817.272.1132

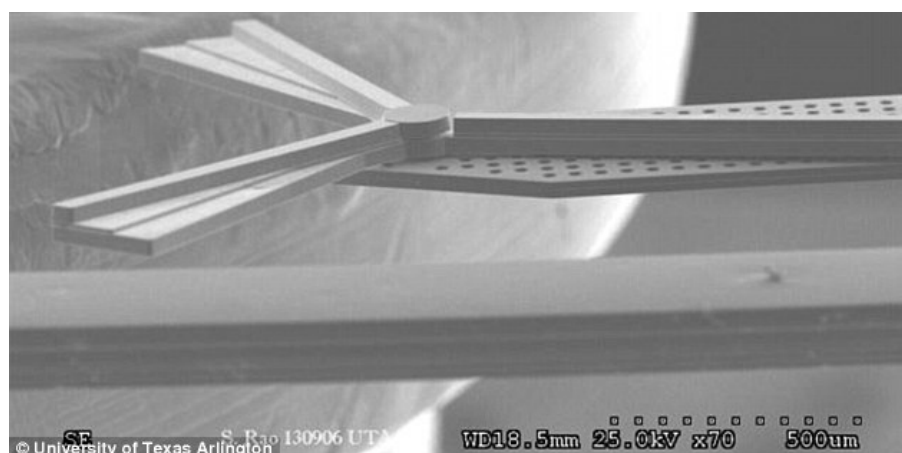
### Our mailing Address:

The Office of Technology  
Management  
701 S Nedderman drive,  
Suite 333, Arlington, TX  
76019

### Connect with us:



Micro windmill is placed on a Penny



Close up picture of the windmill