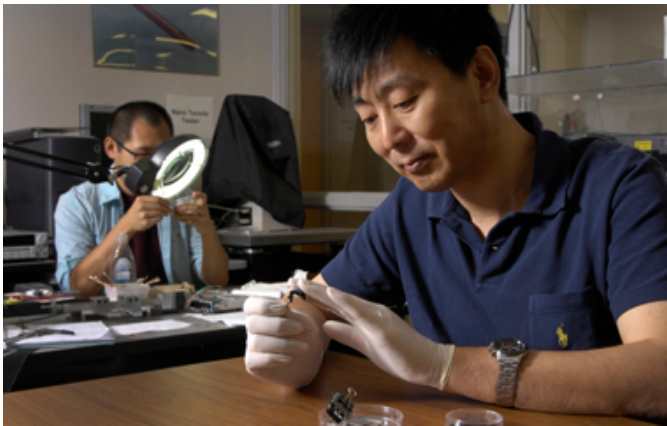


Mobile Charging, via T-Shirts

Written by Marco Attard
20. July 2012

In the future chargers will not only be part of our lives-- they will be part of our wardrobes, as Xiadong Li from the University of South Carolina proposes a means turning a cotton T-shirt into a source of electric power.



Li and research partner Lihong Bao even provide the recipe on how to do exactly that. Get a cheap cotton T-shirt, soak it in a flouride solution, dry it, then bake it in an oxygen-free environment (in order to avoid charring or burning) at a high temperature.

The treatment transforms the cotton fibres making the T-shirt into an "activated carbon textile"-- a flexible material that acts as a double-layer capacitor (or supercapacitor) capable of storing electrical charges.

One can also enhance the electrode performance of the fabric further by coating individual carbonised fabric fibres with 1 nm-thick manganese oxide "nanoflowers," creating a "stable, high-performing supercapacitor."

The final hybrid fabric not only stores electric charges-- according to researchers it is also resilient, as performance doesn't diminish by more than -5% even after thousands of charges.

"By stacking these supercapacitors up, we should be able to charge portable electronic devices such as cell phones," Li continues.

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The process of activated carbon creation is both cheap and green, since other methods involve oil or other non-environmentally friendly chemicals as starting materials.

Maybe in the future we will not simply carry mobile chargers around-- we will be actually wearing them.

Go [Clothing the Body Electric: Fabric in Modified T-Shirt Can Store Electrical Charge](#)