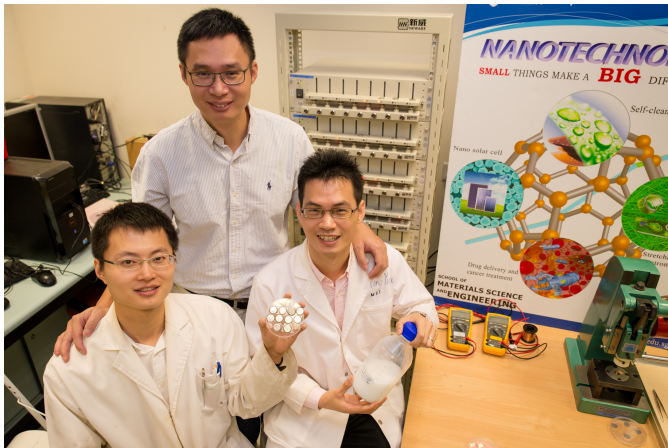


A Key to Faster-Charging, Longer-Lasting Batteries?

Written by Marco Attard
15 October 2014

Nanyang Technology University (NTU) researchers develop batteries with not only ultra-fast charging times but also a lifespan of over 20 years, over 10 times that of existing lithium-ion batteries.



According to the researchers the batteries recharge up to 70% in only 2 minutes, making them particularly useful for electric vehicles as well as any other piece of battery-powered CE.

Current rechargeable lithium-ion batteries last around 500 recharge cycles, the equivalent of 2-3 years of typical use, with each cycle taking around 2 hours to fully charge the battery.

The secret sauce behind the NTU-developed battery is titanium dioxide gel replacing the graphite anode (negative pole) of lithium-ion batteries. Titanium dioxide is naturally found in soil in spherical shape, and the NTU team managed to turn it into tiny nanotubes in order to speed up the chemical reactions in the new battery.

“Electric cars will be able to increase their range dramatically, with just 5 minutes of charging, which is on par with the time needed to pump petrol for current cars,” research leader Professor Chen Xiaodong says. “Equally important, we can now drastically cut down the toxic waste generated by disposed batteries, since our batteries last ten times longer than the current generation of lithium-ion batteries.”

Furthermore the researchers says the new battery is easier to mass produce, as the titanium dioxide nanotube-based electrodes do not need the binding additives required in lithium-ion

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battery manufacture.

The NTU team is currently looking into licensing the technology, and predicts the new generation of fast-charging batteries will hit the market within the next 2 years.

Go [NTU Develops Ultra-Fast Charging Batteries that Last 20 Years](#)