

Like 2.1m Follow @MailOnline DailyMail

Tuesday, Oct 14th 2014 5AM 34°C 8AM 34°C 5-Day Forecast

MailOnline

Home | News | U.S. | Sport | TV&Showbiz | Australia | Femail | Health Science Money | Video | Travel | Fashion Finder

Science Home Pictures Gadgets Gifts and Toys Store

Login



The Honeymoon is over! Two weeks



Now dip into your pension pot when



I can drink an awful lot at lunch, brags



Why I believe in ghosts: As the



How one slip of a GP's finger can put



Car tax disc frenzy on eBay where



How a career

Scientists reveal the battery that can be charged in just TWO minutes - and say it could revolutionise smartphones and electric cars

- Ultra-fast charging batteries that can be recharged up to 70 per cent in only two minutes
- New generation batteries have long lifespan of over 20 years
- Could have major implications for electric car industry

By MARK PRIGG FOR MAILONLINE

PUBLISHED: 17:59 GMT, 13 October 2014 | UPDATED: 18:49 GMT, 13 October 2014

134 shares

30

[View comments](#)

It could be the answer to every smartphone owner's dreams - a battery that can be charged in just 120 seconds.

Researchers in Singapore say their ultra-fast charging batteries that can be recharged up to 70 per cent in only two minutes.

They also last ten times longer than current batteries, which often struggle to hold a charge the older they get.



© Alistair Heap

Site Web Enter your search

Like Daily Mail

Follow @dailymailtech

Follow Daily Mail

+1 Daily Mail

Today's headlines Most Read



Hubble spots a celestial butterfly: Dying planetary nebula creates incredible insect-like image



The future of the underground revealed: Futuristic designs show what driverless Tube trains will look like...



The comedy club where LAUGHING costs you money: Facial recognition tracks smiles and charges you each time...



Getting to Mars will ensure the survival of our species, says Nasa chief - and he claims humanity needs to...



Will the 'doomsday' seed vault protect our food supplies? 10,000 seeds sent to Arctic to safeguard humanity...



Scientists reveal the battery that can be charged in just TWO minutes - and say it could revolutionise...



Climate change is being slowed by plants far more than expected, researchers reveal



Toddlers can tell when their parents are angry at just 15 months old



Apple Pay set to launch on Saturday - Walgreens leaks plans to start letting customers pay by tapping their...



Sugary sports drinks could actually be causing athletes to SLOW DOWN, warn scientists



Binge drinking can alter your genes and is a 'cluster bomb' for health issues, warn scientists



Moon with a view! Mars photobombs Earth despite being 70 MILLION miles away



Could symptoms of autism be improved by eating broccoli? Chemical which gives veg its bitter taste 'helps'...



Where not to go in an earthquake: Scientists reveal the four San Francisco areas they say are now at...



Hackers release 100,000 photos and videos intercepted from Snapchat, in huge trove that includes child...

The end of having to sit by a charger: Researchers in Singapore say their ultra-fast charging batteries that can be recharged up to 70 per cent in only two minutes.

MORE HEADLINES

Scientists at Nanyang Technology University (NTU) say their breakthrough has a wide-ranging impact on all industries, especially for electric vehicles, where consumers are put off by the long recharge times and its limited battery life. the researchers say.

Drivers of electric vehicles could save tens of thousands on battery replacement costs and can recharge their cars in just a matter of minutes.

'Electric cars will be able to increase their range dramatically, with just five minutes of charging, which is on par with the time needed to pump petrol for current cars,' said Associate Professor Chen Xiaodong Prof Chen, who led the study.

'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.'

Commonly used in mobile phones, tablets, and in electric vehicles, rechargeable lithium-ion batteries usually last about 500 recharge cycles.

This is equivalent to two to three years of typical use, with each cycle taking about two hours for the battery to be fully charged.

In the new NTU-developed battery, the traditional graphite used for the anode (negative pole) in lithium-ion batteries is replaced with a new gel material made from titanium dioxide.

Titanium dioxide is an abundant, cheap and safe material found in soil. It is commonly used as a food additive or in sunscreen lotions to absorb harmful ultraviolet rays.

Naturally found in spherical shape, the NTU team has found a way to transform the titanium dioxide into tiny nanotubes, which is a thousand times thinner than the diameter of a human hair.

HOW IT WORKS

In the new NTU-developed battery, the traditional graphite used for the anode (negative pole) in lithium-ion batteries is replaced with a new gel material made from titanium dioxide.

Titanium dioxide is an abundant, cheap and safe material found in soil.

It is commonly used as a food additive or in sunscreen lotions to absorb harmful ultraviolet rays.

Naturally found in spherical shape, the NTU team has found a way to transform the titanium dioxide into tiny nanotubes, which is a thousand times thinner than the diameter of a human hair.

This speeds up the chemical reactions taking place in the new battery, allowing for superfast charging.

DON'T MISS

The Honeymoon's over! Two weeks after marrying heart-throb George, Amal Clooney flies out to advise Greece on how to get UK to return Elgin Marbles



Just call me Amal Clooney! George's wife reveals she has taken her husband's name on law firm's website ...as she heads back to work Is in Greece for work



Presenting Mr & Mrs... Steve Jones and wife Phylicia Jackson make post-wedding debut at the Attitude Awards as she shares first picture from their big day



A much smaller Zach! Mr. Galifianakis debuts drastic weight loss at first public event in a year as he calls being a celebrity 'dumb'



Did Kim just get ...The Rachel? Kardashian seen with shorter hair in snap posted by Jennifer Aniston's hairstylist Has a shorter 'do in new Instagram snap



Power players! Kendall and Kylie Jenner are listed among Time magazine's most influential teens of 2014 Described as young women to watch out for



Madonna and me - an unrequited love affair! GRAHAM NORTON on the diva who didn't want to be his best friend (and the even crazier one who did)



Belle of the ball... Tulisa wows as she goes braless in pale pink plunging princess gown at the Attitude Awards She has vowed to drop her tough girl exterior



'It just proves I was right about him': Lingerie-clad Chanelle Hayes hits out at ex David McIntosh (again) after Kelly Brook split Didn't hold back



SEBASTIAN SHAKESPEARE: Kate Moss's sister still 'chav' bashing on social media Lottie Moss claimed that she 'hates chavs' on her Twitter account



'I loved being married to Katy Perry': Russell Brand gushes about ex wife on the Today Show Comedian admits he has fond memories of relationship with the star

RELATED ARTICLES



Sleeping beauty: Rare footage reveals humpback whale snoozing while 'lying' on its BACK



Did volcanoes on the moon erupt when dinosaurs still roamed Earth? Marks on lunar surface are...

This speeds up the chemical reactions taking place in the new battery, allowing for superfast charging.

Invented by Associate Professor Chen Xiaodong from NTU's School of Materials Science and Engineering, the science behind the formation of the new titanium dioxide gel was published in the latest issue of Advanced Materials, a leading international scientific journal in materials science.

Prof Chen and his team will be applying for a Proof-of-Concept grant to build a large-scale battery prototype.

With the help of NTUitive, a wholly-owned subsidiary of NTU set up to support NTU start-ups, the patented technology has already attracted interest from the industry.

The technology is currently being licensed by a company for eventual production. Prof Chen expects that the new generation of fast-charging batteries will hit the market in the next two years.

It also has the potential to be a key solution in overcoming longstanding power issues related to electro-mobility.