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TECHNOLOGY

NTU researchers make breakthrough with fast-charge batteries

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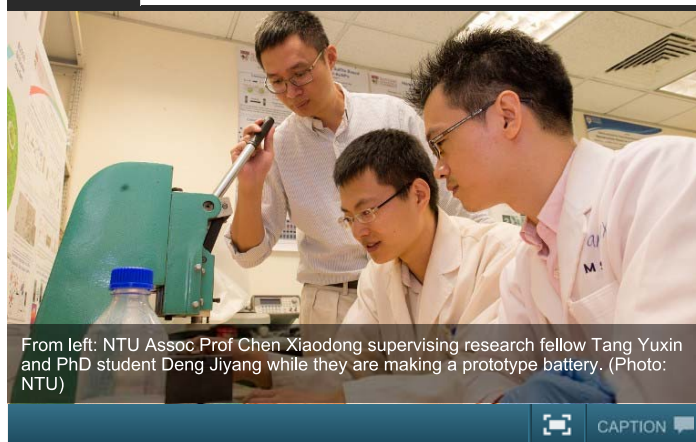
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The next generation lithium-ion batteries can charge up to 70 per cent in two minutes, and have a lifespan of more than 20 years. The researchers hope to see the batteries hit the market within the next two years.

PHOTOS



From left: NTU Assoc Prof Chen Xiaodong supervising research fellow Tang Yuxin and PhD student Deng Jiyang while they are making a prototype battery. (Photo: NTU)

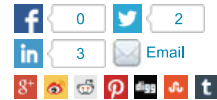
SINGAPORE: Scientists at Nanyang Technology University (NTU) have developed ultra-fast charging batteries that can be recharged up to 70 per cent in two minutes, and have a lifespan of more than 20 years – 10 times more than existing lithium-ion batteries.

The batteries will have a “wide-ranging impact” on all industries, especially for electric vehicles, where consumers are put off by long recharge times and limited battery life, said NTU in a media release issued on Monday (Oct 13).

“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 from NTU’s School of Materials Science and Engineering.

Currently, rechargeable lithium-ion batteries – commonly used in mobile phones, tablets and in electric vehicles – 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.

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In the new 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 – commonly used as a food additive or in sunscreen lotions to absorb harmful ultraviolet rays.

The NTU researchers' work was published in the latest issue of *Advanced Materials*, a leading international scientific journal in materials science. The team will be applying for a Proof-of-Concept grant to build a large-scale battery prototype.

The technology is currently licensed by a company for eventual production. Assoc Prof Chen said he expects the batteries to hit the market within the next two years.

- CNA/cy

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