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NTU develops self-tinting window triggered by oxygen

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By Haikal Latiff

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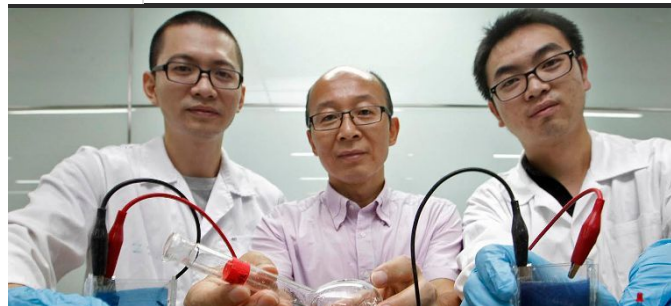
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The self-tinting window taps on oxygen to start off a chemical process to darken the window, which can then help in adjusting the amount of sunlight allowed into a building.

PHOTOS



NTU's School of Electrical and Electronic Engineering research staff Zheng Ke (left), Liu He (right) and Professor Sun Xiaowei (centre) posing with the self-tinting window. (Photo: Wee Teck Hian/TODAY)

CAPTION

SINGAPORE: Scientists from Nanyang Technological University (NTU) on Tuesday (Dec 16) unveiled a window pane that can brighten or darken automatically without requiring an external power source.

The self-tinting window taps on oxygen to start off a chemical process to darken the window. The window contains a liquid electrolyte placed in between two glass panels - one is coated with a blue pigment, while the other is fitted with a strip of aluminium foil. The panels are then connected with electrical cables, which allow the window to become clear when the switch is turned on, and blue when it is turned off.

This window can then adjust the amount of sunlight that enters a building during the day, promising savings on cooling and lighting costs. The stored energy generated by the chemical process can also be used to light up low-powered electronics such as LED bulbs, using wires from window grilles, the scientists added.

Existing window solutions in the market are either permanently tinted or require an external power source to change their light transmission properties.

Said Professor Sun Xiaowei, who is from NTU's School of Electrical and Electronic Engineering: "Our technology is very attractive as a zero-sum consumption smart window. Building

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owners and even common households can reap energy savings right from the outset and over the long term."

The NTU team is now looking to improve the window's design by adding new features such as sensors. They are also planning to collaborate with industry partners to commercialise the technology in the next two years.

"What we want to achieve is to see this deployed in practical usage, and through that usage, to cut the energy costs of all buildings. Eventually, this will cut down the emission of carbon dioxide, contributing to a sustainable society," added Prof Sun.

- CNA/kk/ac

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