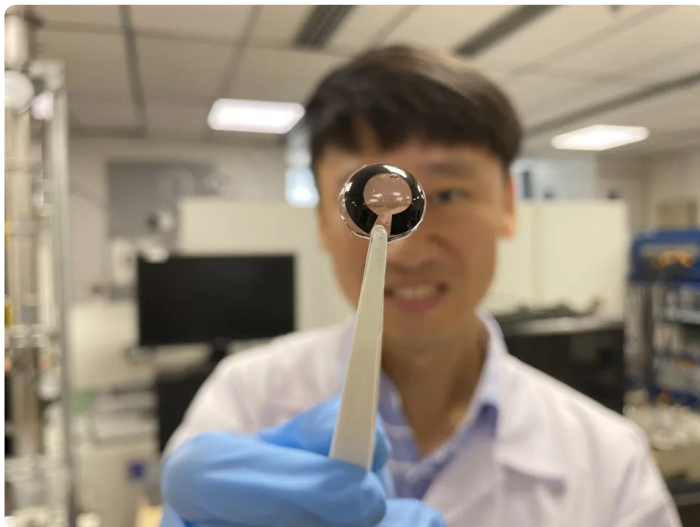


Smart contact lenses powered by human tears could be on the horizon



Rob Waugh · Contributor

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A smart contact lens that is 'powered' by human tears. (NTU)

While companies such as Meta and Apple vie to create 'smart' glasses, scientists in Singapore have developed a battery that could pave the way for [smart contact lenses](#).

The plan is for the lenses – which transmit computer information or augmented reality displays directly into the wearer's eyes – to be powered by tears.

Smart contact lenses are high-tech lenses capable of displaying visible information on our corneas and [which will be used to access augmented reality](#).

Current uses include helping to correct vision, monitoring wearers' health, and flagging and treating diseases for people with chronic health conditions such as diabetes and glaucoma.

In the future, smart contact lenses could be developed to record and transmit everything a wearer sees and hears to cloud-based data storage.

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Researchers led by associate professor Lee Seok Woon, from NTU's School of Electrical and Electronic Engineering (EEE), developed a battery made from biocompatible materials that do not contain wires or toxic heavy metals, such as those in lithium-ion batteries or wireless charging systems.

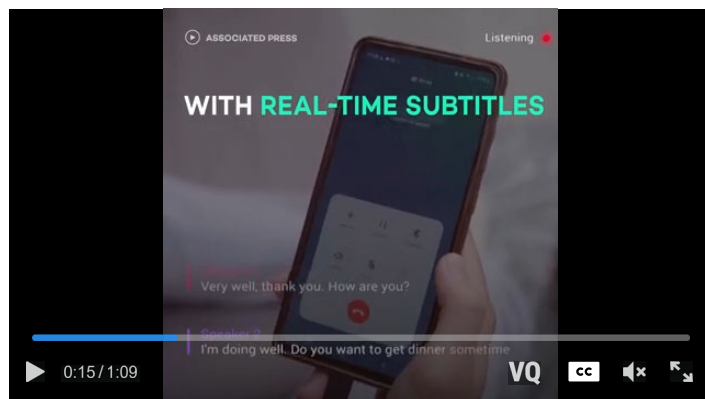
The battery has a glucose-based coating that reacts with the sodium and chloride ions in the saline solution surrounding it, while the water the battery contains serves as the 'wire' or 'circuitry' for electricity to be generated.

It could also be powered by human tears as they contain sodium and potassium ions.

Testing the current battery with a simulated tear solution, the researchers showed that the battery's life would be extended an additional hour for every 12-hour wearing cycle it is used.

The battery can also be charged conventionally by an external power supply.

Watch: Smart glasses provide deaf people with real-time subtitles



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