

Safer button battery technology poised for commercial development

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The technology, developed by senior lecturer Jeongbin Ok from the University's School of Design, allows quick detection of button batteries swallowed by children or infants. After many years creating, testing, and

working with industry on the invention, Mr Ok and Viclink, the University's commercialisation office, are ready to take the invention to the next level by partnering with global battery manufacturers. Mr Ok's invention has been patented in the United States, European Union, and Japan.

"I hope to see mass production of this coating and to see it become an industry standard," Mr Ok says. "It has always been my dream to help save lives, and I hope this coating can play a part in doing so by creating an [invention](#) that has global implications for the [safety](#) of children."

Viclink Commercialisation Manager Liam Sutton says, "This is a fantastic innovation that's inexpensive for manufacturers to implement but has enormous potential for public good. We've got the technology, now it's time to connect with [battery](#) companies who are determined to address the issue of child safety and battery use."

Mr Ok's invention is a coating for battery cells that turns saliva blue when a battery is put in the mouth. The colour can alert parents or caregivers that a child has ingested a battery, while flavourings in the coating deter children from swallowing the batteries.

"The problem is that parents don't always know that ingestion has occurred, because the batteries are so small and [young children](#) can't communicate that they have swallowed something," Mr Ok says.

The coating can be applied to batteries during the [manufacturing process](#) or applied to existing batteries using a pen applicator.

Battery ingestion causes up to 20 hospitalisations at Auckland's Starship Hospital every year, and around 3000 annual hospitalisations in the United States. Button batteries are highly corrosive and can cause serious tissue damage and even fatalities within two hours of ingestion.

"This is a very exciting innovation and a great example of Kiwi ingenuity addressing a very real and serious hazard in a practical and cost-effective way," says Martin Rushton, Trading Standards Team Leader Safety & Technical at the Ministry of Business, Innovation, and Employment (MBIE). "This 'early warning' system will complement other measures around warnings and education and we are encouraging battery manufacturers get behind improving consumer safety—parents and caregivers will, I am sure, be keen to see button batteries with this feature, to help safeguard infants and young children."

Mr Ok says his invention is timely given the recent announcement in New Zealand of a new Product Safety Policy Statement (PSPS) for button batteries. This statement urges the battery industry to make button battery products safer through improved packaging, display, and disposal, and encourages innovation in battery safety.

Provided by Victoria University of Wellington

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