



4 May 2025

Fridge gizmo uses shots of UV light to keep food fresh



Called the EcoLoc, the gadget actually consists of two parts: a small battery-powered UV lamp module, and a clear glass food container lid with a cradle in which the module is placed. The lid is compatible with Ikea's existing line of 365+ food storage containers.

At the heart of the module is a special chip designed by scientists from Singapore's Nanyang Technological University and Swedish company PureFize Technologies. That chip produces short wave UV light – aka UVC, which is the most effective type for killing germs – and it does so without the use of toxic mercury, which is typically utilized in conventional UVC lamps.

Instead, the chip takes advantage of a process known as cathodoluminescence.

Putting it simply(ish), this involves passing electrons from a zinc-oxide cathode, through an electric field which accelerates them, and onto a cathode. That cathode is coated in a material that emits mainly UVC light – along with some UVA and UVB – when excited by the electrons.

And no, the EcoLoc isn't intended to be switched on continuously. The general idea is that it initially gets switched on for a few minutes when the food is first placed in the container – an integrated timer automatically shuts it off. Users can then opt to switch it on for a few minutes every day thereafter.

In lab tests, the device was found to be highly effective at eradicating harmful *Pseudomonas aeruginosa*, *Escherichia coli* and *Legionella pneumophila* bacteria on the surface of foods. It also extended the fridge life of tomatoes by seven days, buns by 22 days, and blueberries by up to 28 days.

A paper on the research, which was led by Nanyang's Prof. Hilmi Volkan Demir, was recently published in the journal *Advanced Optical Materials*.

A starter kit consisting of one lamp module and three lids is available now via the EcoLoc website, priced at €79 (about US\$89). Potential buyers might also want to check out the Aurora system, which pretreats fridge-bound food containers with UVC light while also vacuum-sealing them.

<https://www.freedomspheonix.com/News/378563-2025-05-04-fridge-gizmo-uses-shots-of-uv-light-to-keep-food.htm>