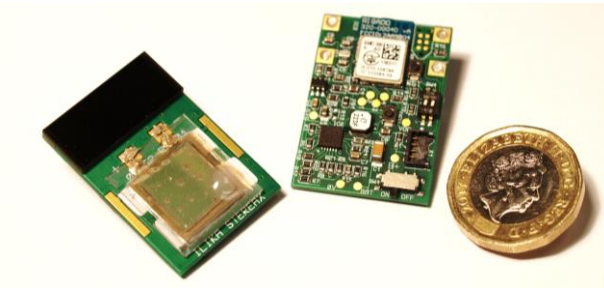


Perpetual Beacon for Smart Vehicles powered by Stereax® M250

Iluka demonstrates the ability of its Stereax M250 solid state battery to power a real device within the Internet of Things. This device is a perpetual beacon for Smart Vehicles, in other words, a sensing device powered autonomously by harvested solar energy stored in a thin solid state battery. The device is of minimal size (35 x 25 mm) allowing to be obtrusive and placed in difficult-to-reach places in the car (near the engine, tyres, in the cabin). With its thin form factor (< 4mm), the device resembles a thin patch. The device measures temperature at regular intervals and transmits the data using Bluetooth Low Energy to an app. The app displays temperature information as well as the battery's state of charge. This device replicates non-critical automotive sensors where the data could be transmitted wirelessly to a hub in the vehicle for automated control, but is so small as being easily forgotten.



Component	Company	Model / Comment
Battery	ILIKA	250 µAh Stereax M250 solid state battery
PV panel	Lightricity	EXL2-1V50, 25 mm x 10 mm
Battery Management	Analog Devices	ADP5092ACPZ-1-R7
Bluetooth LE	RIGADO	BMD-300, incl. Nordic nRF52832 SoC with ARM Cortex M4F CPU, with built-in temperature sensor

Transmission regime: 3 peaks at 5 mA for 0.5 ms every second



Example of use case for perpetual beacon

accelerated materials innovation

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