

Technology Offer

UK company is looking to integrate its solid-state battery with Internet of Things applications

Summary

A UK company has developed a patented solid-state battery technology that uses ceramic ion conductor instead of conventional electrolytes. It has distinct benefits over lithium-ion batteries in number of areas, incl. energy efficiency, faster charge and longer life-span. The company is looking for energy harvesting and sensor companies who have Internet of Things technology to integrate with their new batteries. Commercial agreement with technical assistance or license agreement can be offered.

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Details

Description

The UK company has been a solid-state battery technology innovator since 2008. It has developed a type of lithium-ion battery, which, instead of using the usual liquid or polymer electrolyte, uses a ceramic ion conductor. This is particularly important because battery technology is a key challenge in the electronics space, with the Internet of Things (IoT) being a key driver of growth in the market and battery technology development.

IoT devices offer a different set of battery challenges compared to other electronic devices. They have similar pressures, such as cost and availability, but they also have some specific requirements, such as:

- Small size in both footprint and thickness
- Ability to be trickle charged
- Charged only when an energy harvester can get energy
- Longer life span to match those of sensors and Microcontroller Units (MCU)
- Support wider temperature ranges

These challenges need a different approach to battery technology. In response to that, the company has developed very small footprint, energy dense batteries, with distinct benefits over the conventional lithium-ion batteries. Instead of a liquid or polymer electrolyte, the company's patented technology uses a ceramic ion conductor. Among the benefits this provides are faster charging and up to 10 years' life span because of the battery's very low leakage currents. It is

non-flammable and can be integrated into integrated circuit components to reduce end device size. When paired with an energy harvester, the battery can provide a truly fit-for-life performance. It is particularly designed for IoT applications, tackling on the four main battery requirements: miniaturisation, capacity in a small footprint, increased performance and high capacity.

The company is looking to offer commercial agreement with technical assistance or license agreement to partners who have Internet of Things technology to integrate with their new batteries, such as developers of sensor technologies, energy harvesting technologies, wireless chips and other equipment manufacturers in the industrial, electric vehicles and medical sector.

Advantages and Innovations

The company's solid state battery technology has several benefits over currently available lithium-ion batteries:

- Up to 10 years' life span
- Faster to charge
- 40 % improvement in energy density per footprint
- Low leakage currents
- Increased temperature range to 100°C (30°C higher than the existing products)
- Non-flammable
- Can be integrated into integrated circuit (IC) components to reduce end device size

Stage of Development

Already on the market

IPR Status

Granted patent or patent application essential

Profile Origin

Private (in-house) research

Keywords

Technology

04001003 Storage of electricity, batteries

Market

06008 Energy Storage

NACE

C.27.2.0 Manufacture of batteries and accumulators

Network Contact

Issuing Partner

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Open for EOI : **Yes**

Dissemination**Send to Sector Group**

Materials

Client**Type and Size of Organisation Behind the Profile**

Industry SME 11-49

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Experience Comments

ISO 9001:2015

Languages Spoken

English

Client Country

United Kingdom

Partner Sought**Type and Role of Partner Sought**

The company is seeking commercial partners to develop and deploy integrated IoT solutions by combining its batteries with sensors, energy harvesters and radio chips. The company will consider either a commercial or license agreement.

Type of Partnership Considered

License agreement

Commercial agreement with technical assistance

Attachments
