

Ilika transforms battery technology for IoT

Innovative battery technology addresses key challenge of 'fit and forget' energy sources for Internet of Things (IoT) devices

LONDON, UK – 27 April 2016: Ilika plc (LON:IKA), a pioneer in materials innovation and solid state battery technology, today announces the launch of its Stereax™ M250 solid state battery. This is a new, miniaturised solid state battery technology for IoT devices. Addressing the key challenge of always-on, self-charging and efficient energy, Ilika's Stereax™ battery family will enable smaller, higher energy-dense batteries to accelerate IoT products to market.

As IoT devices move from concept to reality, providing small, energy efficient solutions for home automation, transportation and healthcare is now one of the key challenges. Ilika is empowering wider adoption of IoT devices through a 'fit and forget' design that enables IoT sensors to be fitted without further maintenance, including changing batteries.

*"One of the key challenges for IoT devices is enabling long life energy-efficient power sources," said **Franco Gonzalez, industry analyst from IDTechEx.** "The combination of energy harvesting and battery technology has been urgently needed to enable small, energy efficient solutions that can easily be installed across a wide range of locations with minimum maintenance."*

Solid state batteries are key to IoT since they can be used in conjunction with all the current energy harvesting technologies whilst being able to match the energy needs for IoT devices. Many IoT devices need power in short bursts to collect and transmit data, whilst being able to support a wide range of environment temperatures. Relative to standard lithium ion batteries, solid state batteries have lower leakage currents (10x smaller) and longer life spans of up to 10 years (4x longer). They can also be integrated with other electronic components, thus keeping the size of the end device to a minimum.

*"Many IoT devices will be deployed in places that are difficult to service on a regular basis so self-sufficiency is critical," said **Charlene Marini, vice president, segment marketing, ARM.** "Ilika's Stereax™ batteries can help as the technology will enable 'leave for life' IoT devices capable of producing data over extended periods with minimal maintenance. This is where the IoT starts to shed the power tether that could restrain its spread into new and exciting off-grid applications."*

Ilika has taken the solid state battery concept to the next level of evolution with its expertise in material development. Ilika Stereax™ batteries use patented materials and processes enabling superior energy density per battery footprint, up to 40% improvement on current solid state solutions, and increased temperature range support to over 100°C, 30°C higher than existing solid state products. Ilika's batteries do not contain any free lithium which makes them more moisture resistant.

“Building on our R&D heritage in materials science, Ilika has been developing a range of materials that have enabled us to tailor battery designs that meet the specific needs of IoT” said **Graeme Purdy, CEO, Ilika**. *“For IoT devices to gain wide adoption they need to be able to be fitted then forgotten about, Ilika Stereax™ battery technology is a key to turning this into a reality.”*

Ilika is demonstrating the capability of its first Stereax™ battery in its perpetual beacon for temperature sensing at IDTechEX in Berlin between the 27-28th April 2016.

About Ilika

Ilika plc (LON: IKA) is a pioneer in materials innovation and solid state battery technology. The company has been inventing new materials for energy and electronics markets for over a decade, including in automotive, aeronautical and electronic components sectors. Global brands such as Rolls Royce and Toyota collaborate with Ilika's development teams to create innovative products or improve the performance of existing components.

By applying that heritage of patented materials invention, the company has developed ground-breaking solid state batteries to meet the specific demands of a wide range of applications in the Internet of Things. Ilika is now licensing its battery technology IP to partners for IoT sensors for the Smart Home/Building; Medical; Automotive and Transportation sectors around the world.

Ilika's Stereax™ battery technology IP family offers compelling advantages over conventional lithium ion batteries, including: smaller footprint (energy density), non-toxic properties, faster charging, increased cycle life, low leakage and reduced flammability. Ilika is working to help build the connected world, removing the constraints of energy source for designers and engineers by delivering 'fit once and forget' power wherever it is needed.

The company is headquartered in the UK and has operations in the USA and Japan. Find more information at www.ilika.com

Media Contacts

Cathy Pittham
Email: cathypitthamwiley@me.com
Tel: +44 7985 194333

Trina Watt
trina@wattknowledge.com
+44 7712 591933

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Appendix: Links to Ilika's battery technology-related visuals on Ilika's web site

1. Infographic - battery technology for IoT:

www.ilika.com/images/uploads/general/stereax-infographic_v6.pdf

2. Ilika Stereax™ M250 visual in perpetual beacon demonstrator:

www.ilika.com/images/uploads/gallery/171/graphic-demonstrator_large.jpg

3. Battery construction diagram:

www.ilika.com/images/uploads/general/stereax_illustration_expanded_v1.pdf

4. Stereax™ solid state battery launch video:

https://www.youtube.com/watch?v=1Y_8BAycNkY