

MEDIA INFORMATION

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Power supply of medical devices with sensor-monitored accumulators

Medical technology is a highly regulated field where reliability and safety are essential. For this reason, many medical devices are operated with cable connection or long-established primary batteries. This has safety advantages, but sometimes severely limits flexibility. The trend here is also toward battery-powered systems. However, the lithium-ion battery technology available today does not yet meet the required safety standards. Fraunhofer ISIT has addressed this issue and is developing accumulators that meet the high standards of medical technology.

In the business unit "Battery Systems for Special Applications", ISIT scientists are developing sensor-assisted Li-ion rechargeable batteries that can ensure greater safety through integrated reference electrodes, temperature and pressure sensors. For example, a reference electrode in combination with an intelligent battery management system prevents overcharging and excessive discharging of the battery. Pressure and temperature sensors enable monitoring during operation and can switch off the battery prematurely in the event of a rise in temperature and/or pressure before damage occurs.

Another highlight of Fraunhofer ISIT is the development of an autoclavable (steam-sterilizable) Li accumulator. This can easily withstand temperatures of up to 120°C. Thus, devices such as surgical drills can be completely sterilized after use without having to remove the battery first.

As a service, Fraunhofer ISIT not only offers its customers the development of customized energy storage solutions for their products, but in cooperation with manufacturing partners, these can then also be produced in series.

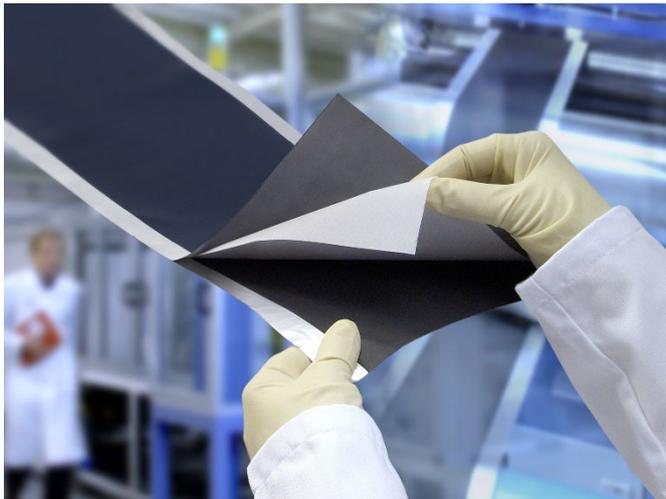
At Compamed 2022 in Düsseldorf, ISIT scientists will be explain their technologies at the Fraunhofer-Gesellschaft's joint booth in Hall 8a, Booth G10.

FRAUNHOFER-INSTITUTE FOR SILIZIUM TECHNOLOGY

Images

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Electrode development at Fraunhofer ISIT



Accumulator cell with reference electrode

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