Fraunhofer ISIT

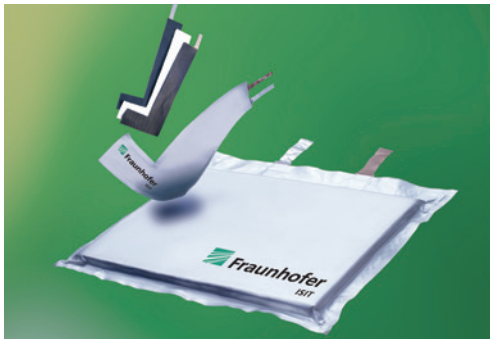
Flexible Batteries for Medical Devices and Wearables

Electrode manufacturing at ISIT

Battery Solutions to Product Needs

Product manager are seeking lighter powering solutions to make medical devices smaller and wearables more economic and reliable. ISIT has developed a cell that continues to function under bending stress, unlike the usual cells available on the market, where bending the cell leads to its damage (and thus to a safety-critical condition). Appropriate cells have been developed for body-worn monitoring devices (EEG brain wave measurement, gait analysis) that can be easily adapted to any medical diagnostic equipment and medical sensors.

The cells can be manufactured application-specifically in a variety of geometries and different cell chemistries. Our technology is suitable for applications with connected devices that are compatible with an Energy Harvester-based wake-up solution.



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Battery Systems for Special Applications
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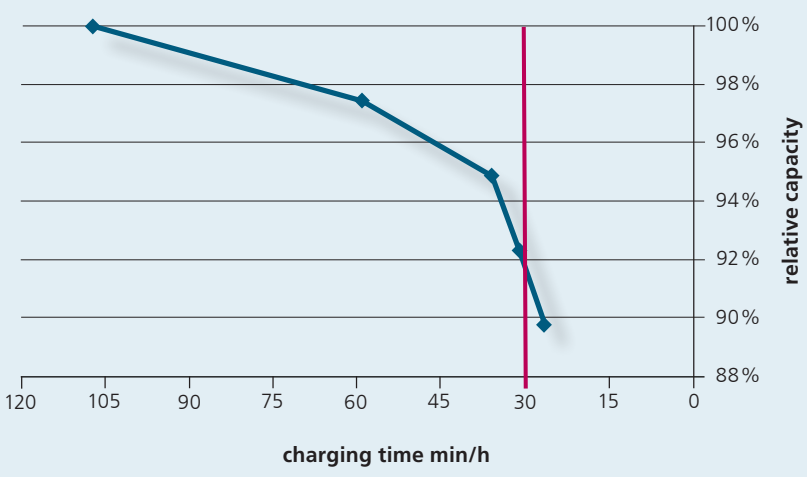
Battery quick charge test

Aged final demonstrator battery for EEG measurement



Specifications	
Nominal voltage [V] (@C/10)	3.6
Energy [mWh]	216
Capacity@0.1C [mAh]	60 ..100
Dimensions (length x width x thickness) [mm]	153..x 33..x 0.5
Charging time (90 % capacity)	< 30 min
Operation temperature	0 – 50°C
Weight [g]	5
Cell chemistry	
Cathode	$LiCoO_2$
Anode	Graphite
Electrolyte	EC/DMC/$LiPF_6$ +Additives
Battery lifetime	
Number of cycles	>1000
Calendar lifetime	5 years