

Press release 2017-07-14

The results from battery tests with Uppsala University confirm and extend the benefits of Insplorion's battery sensor

The project funded by the Swedish co-operation program FFI Energi och Miljö (Energy and Environment), which Insplorion had in cooperation with Uppsala University, is now completed. The purpose was to verify and expand the possibilities of Insplorion NPS technology for batteries. The results confirm the utility as a more efficient charging method and show that temperature and battery health also can be measured.

The focus in the project has been on using Insplorion's NPS technology to measure State of Charge (SOC) and temperature in Li-ion batteries with the two most common electrode materials; Graphite and LFP (Lithium Iron Phosphate). SOC and temperature are the two parameters that are the most important for the battery management system to run the battery more efficiently without limiting its lifetime. It is also these parameters that Insplorion, together with the battery-, component- and automotive industry have identified as the most essential.

"Our previous results have shown that our NPS sensor measures the battery's charging status more effectively. This has now been confirmed and strengthened. We now also have the results that show how our sensor measures aging and temperature in the center of the battery, which also is strongly demanded to better utilize the battery," says Patrik Dahlqvist, CEO of Insplorion.

The different parameters the Insplorion sensor measures can be obtained by positioning the sensor in various positions in the battery. In a commercial sensor, a fiber with different sensor elements will measure state of charge at the electrode, aging process at the electrode interface and temperature in the electrolyte – All with the same optical fiber. The information from the sensors is also of interest for research on new battery materials, as it provides fundamentally new information previously difficult or impossible to measure in full-scale and in real-time.

Patrik Dahlqvist: "Our collaboration with the Ångström Laboratory at Uppsala University has been very successful. These results are exactly what we could wish for, that we now utilize in our ongoing dialogue with our industrial contacts. We can now take the next step focusing on miniaturization and integration with the battery management system."

Questions are answered by:

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