

# T05 Operando electrochemical assessment of electrodes - ZSW

## How it works

Operando measurement of anode potential vs. Li/Li<sup>+</sup> in Li-ion full cells

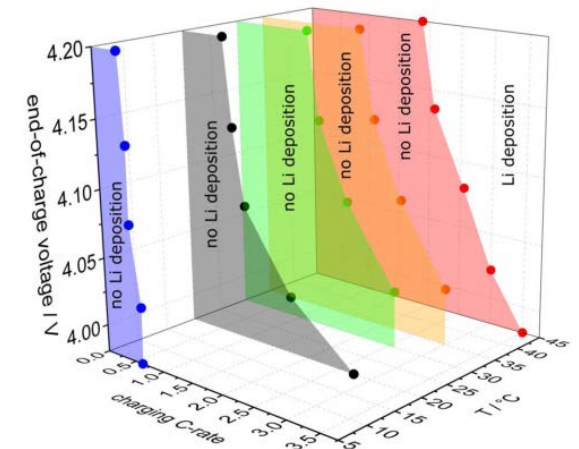
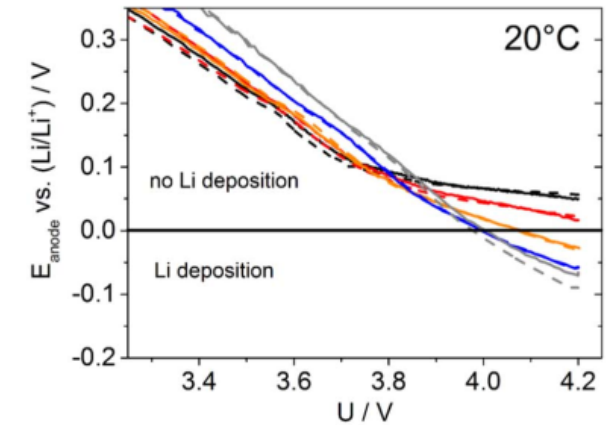
## What can be seen

- Electrodes are built into 3-electrode pouch full cells
- Measurement of anode potential vs. Li/Li<sup>+</sup> for different ambient temperatures and charging C-rates (see images)
- Determination of parameter space to avoid Li deposition on anodes

## What kind of sample ?

Pristine anode and cathode

Why is it useful ? performance, durability, safety



Investigation time-scale : weeks

Maturity level : advanced



### References:

[1] T. Waldmann, B.-I. Hogg, M. Kasper, S. Grolleau, C.G. Couceiro, K. Trad, B.P. Matadi, M. Wohlfahrt-Mehrens, Interplay of Operational Parameters on Lithium Deposition in Lithium-Ion Cells: Systematic Measurements with Reconstructed 3-Electrode Pouch Full Cells, *J. Electrochem. Soc.* 163 (2016) A1232–A1238.

<https://doi.org/10.1149/2.0591607jes>

[2] B.-I. Hogg, T. Waldmann, M. Wohlfahrt-Mehrens, 4-Electrode Full Cells for Operando Li<sup>+</sup> Activity Measurements and Prevention of Li Deposition in Li-Ion Cells, *J. Electrochem. Soc.* 167 (2020) 090525.

<https://doi.org/10.1149/1945-7111/ab8976>

