

T24 Operando Temperature measurement



TEESMAT

Open Innovation Test Bed for Electrochemical Energy Storage Materials

How it works

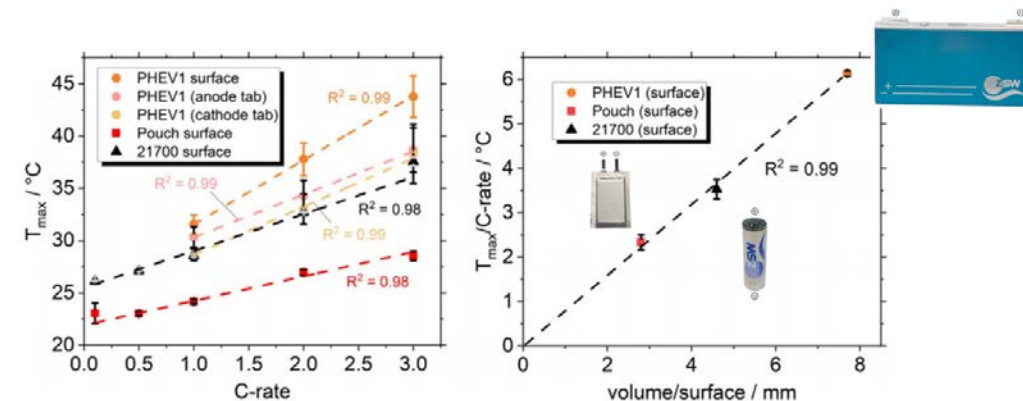
Operando measurement of temperature distribution on cell surface

What can be seen

- Temperature dependency of maximum temperature as a function of C-rate
- Behavior of measured cell in context of other commercial cells

What kind of sample ? Li-ion cells (18650, 21700, 46800, pouch, prismatic)

Why is it useful ? performance



Investigation time-scale : days

Maturity level : advanced



Grant Agreement
No 814106



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References:

[1] T. Waldmann, S. Rössler, M. Blessing, R. Schäfer, R.-G. Scurtu, W. Braunwarth, M. Wohlfahrt-Mehrens, A Direct Comparison of Pilot-Scale Li-Ion Cells in the Formats PHEV1, Pouch, and 21700, J. Electrochem. Soc. 168 (2021) 090519, <https://doi.org/10.1149/1945-7111/ac208c>

[2] T. Waldmann, G. Bisle, B.-I. Hogg, S. Stumpp, M.A. Danzer, M. Kasper, P. Axmann, M. Wohlfahrt-Mehrens, Influence of Cell Design on Temperatures and Temperature Gradients in Lithium-Ion Cells: An In Operando Study, J. Electrochem. Soc. 162 (2015) A921–A927, <https://doi.org/10.1149/2.0561506jes>

[3] J.B. Quinn, T. Waldmann, K. Richter, M. Kasper, M. Wohlfahrt-Mehrens, Energy Density of Cylindrical Li-Ion Cells: A Comparison of Commercial 18650 to the 21700 Cells, J. Electrochem. Soc. 165 (2018) A3284–A3291, <https://doi.org/10.1149/2.0281814jes>

