

VS

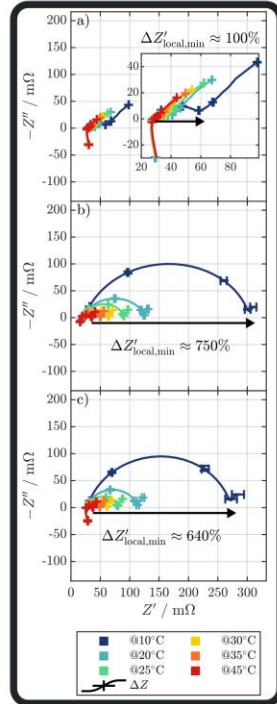


VS



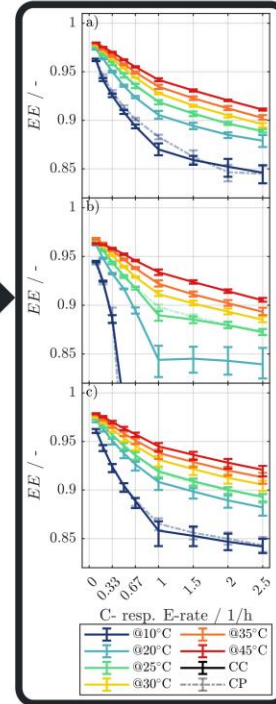
→ Same measurements for two sodium-ion and one lithium-iron-phosphate battery.  
 → All measurements at six different temperatures from 10°C to 45°C.

### Characterization (OCV, $R_{DC}$ , GEIS, ...)



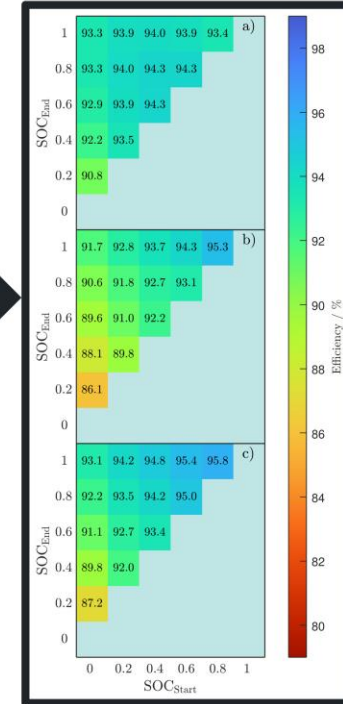
SIBs show higher  $R_{DC}$  and impedance dependence on  $T$  and SOC.

### Rate measurements (CC / CP: $C$ , $E$ , $T_{incr}$ , $EE$ )



The rate capability of SIBs is comparable to LFP cells.

### Efficiency over SOC (CC / CP)



The energy efficiency of SIBs is strongly increasing with increasing SOC.

**Conclusion:**  
 → SIBs and LFP cells show comparable electrical performance  
 → Not using the lowest SOC range could strongly improve the energy efficiency of SIBs  
 → Application-relevant constant power (instead of constant current) further increases SOC-dependency of energy efficiency of SIBs.