

Batemo GmbH  
Benzstraße 15  
76185 Karlsruhe

TUfast Racing Team  
School of Engineering and Design  
Technical University of Munich  
Boltzmannstraße 15  
85748 Garching b. München

11.12.2024

### **Applications of the Batemo Cell Model Melasta SLPBA842126HV in the TUfast Racing Car xb25**

Dear Sir or Madam,

Below, we have outlined the key points regarding how we, TUfast, integrate the Batemo cell model of the Melasta SLPBA842126HV into the development and commissioning of the xb25:

1. **Simulation and determination of maximum current limits** in both charging and discharging directions, based on the state of charge (SoC), temperature, anode potential, and voltage limits.
2. **Parameterization of the Kalman filter** programmed in the BMS for SoC estimation using current pulses (HPPC).
3. **Thermal analysis of power losses** for the design of the overall battery cooling system.

The use of the model ensures not only a safer but also a faster commissioning of the 600V HV battery for the xb25.

Thank you for the opportunity to collaborate.

Best regards,  
Filip Dorau  
(HV Battery Development, TUfast)