

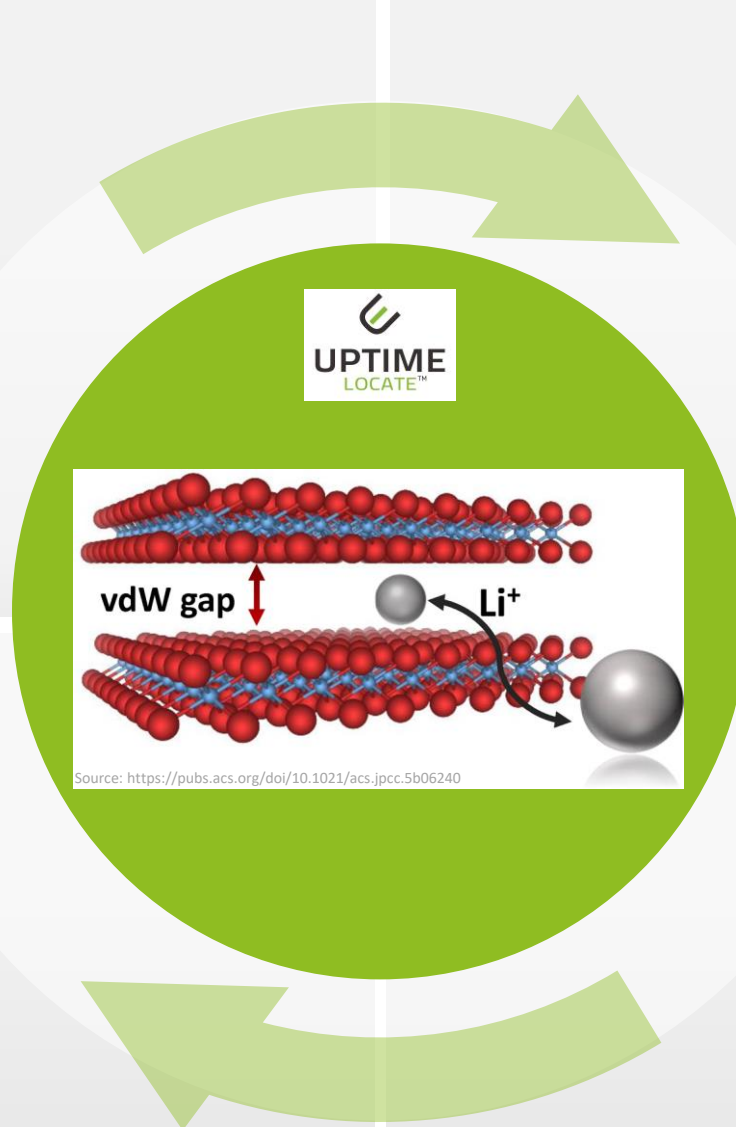
Validate a Li-Ion Battery for Vehicles

Background

- Li-Ion batteries for vehicles are endangered by highly transient operation modes and boundary conditions
- The controller has to keep each cell in narrow temperature and current windows
- Reliability and durability has to be demonstrated against various failure modes

Customer benefit

- Validation with focus on critical customer vehicle operation
- Reliability-induced limits for controller parametrization
- Dedicated validation against long term failure modes
- Generic set of tests for Li-Ion batteries



Requirement

- Validation tests addressing all failure modes of Li-Ion batteries
 - including the bandwidth of vehicle operation and controller strategies
- A program to demonstrate long term reliability and lifetime
- Indicators for early failure detection

Solution: Uptime LOCATE™

- Test design to address damaging operation
 - with respect to critical reference customers
 - including driving, charging and stand-still
- Validation program via damage kinetics under critical operation conditions
- Screening tests
 - to check the sustainability of the controller parametrization
 - to identify indicators for failure modes