

BT-Analysis BLUScript™ Use cases

Use case 1 v2 a:

- First graph is intended as
The simplest cycle life curve is with the number of cycles as the x-axis and the discharge capacity as the y-axis.
- Second graph
Coulombic efficiency vs cycle number
The CE of cycle n is defined as the measured discharge capacity of cycle n, $CDch(n)$, over the preceding measured charge capacity, $CCh(n)$.

$$CE = \frac{C_{Dch(n)}}{C_{Ch(n)}}$$

In an idealized cell without side-reactions, CE is unity because lithium transfer and electron transfer are both lossless.

- Third graph
Capacity retention vs cycle number
The CR of cycle n+1 is defined as the measured discharge capacity of cycle n+1, $CDch(n+1)$, divided by the measured discharge capacity of previous cycle n, $CDch(n)$.

$$CR = \frac{C_{Dch(n+1)}}{C_{Dch(n)}}$$

Use case 1 v2 b:

Same as use case_1_a but with tables instead of graphs.

Use case 2:

Tables with normalized Q charge, Q discharge and Q.

Normalized capacity (Ah) vs cycle number à Q_{charge}/C (specific DUT) + $Q_{\text{discharge}}/C$ (specific DUT) where C is the Capacity of the DUT type. This is either specified in the DUT type associated with the Test plan.