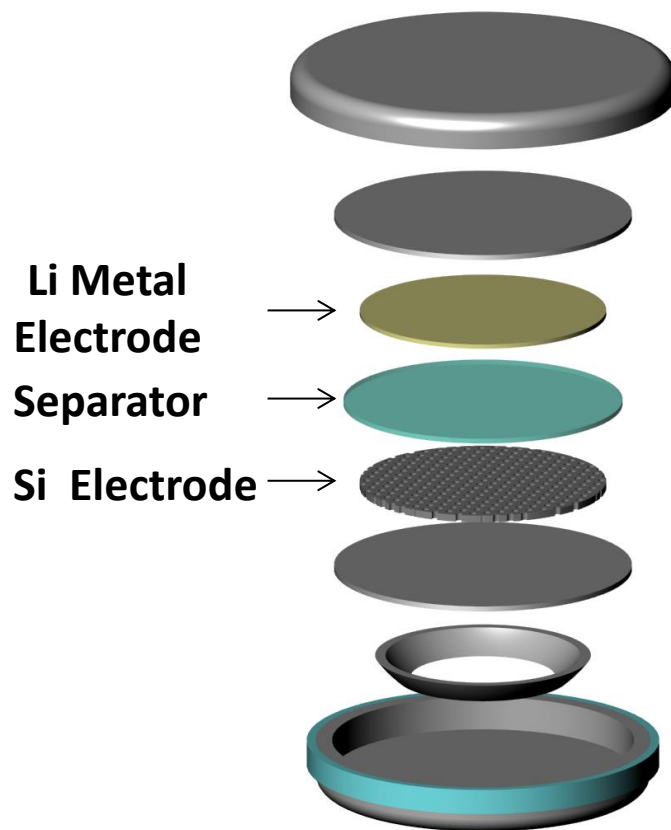


Silicon in Coin Cells vs. Li Metal

Schematic of Coin Cell



Li Metal
Electrode

Separator

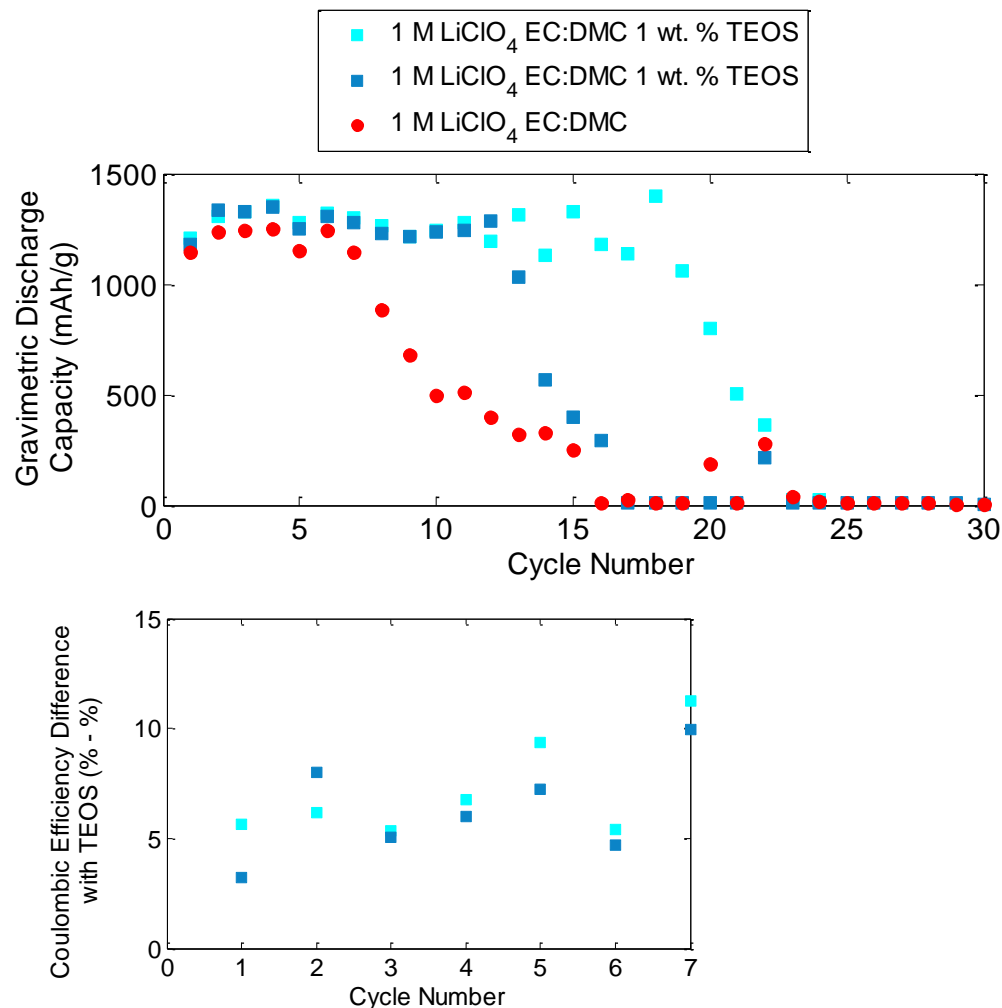
Si Electrode

Electrolyte:

6 drops of 1 M LiClO₄ 1:1 (v/v) EC:DMC

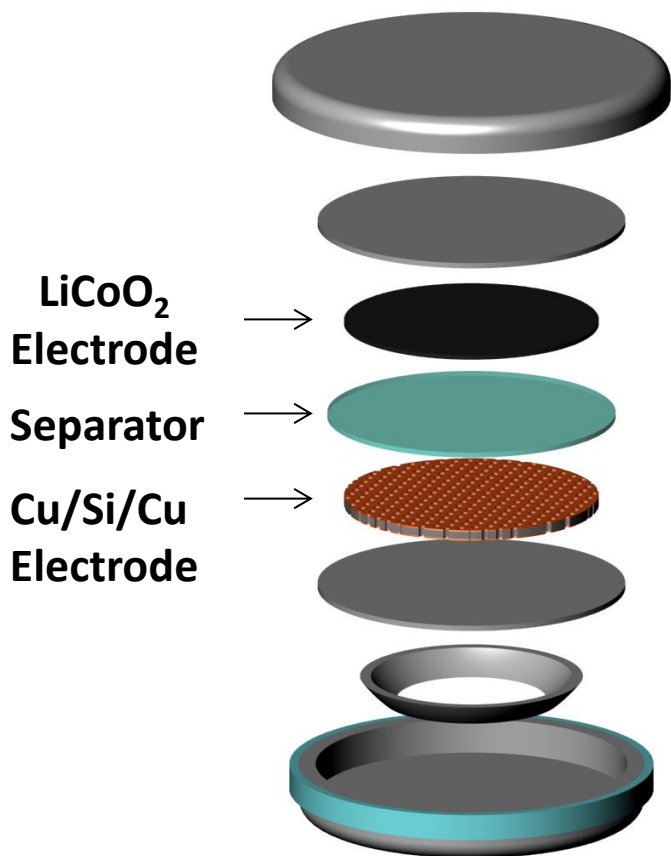
Electrochemical Performance of Coin Cells

Galvanostatically charged / discharged between 3.0 to 4.2 V up to 1400 mAh/g



Cu/Si/Cu Electrodes in Coin Cells vs. LCO

Schematic of Coin Cell

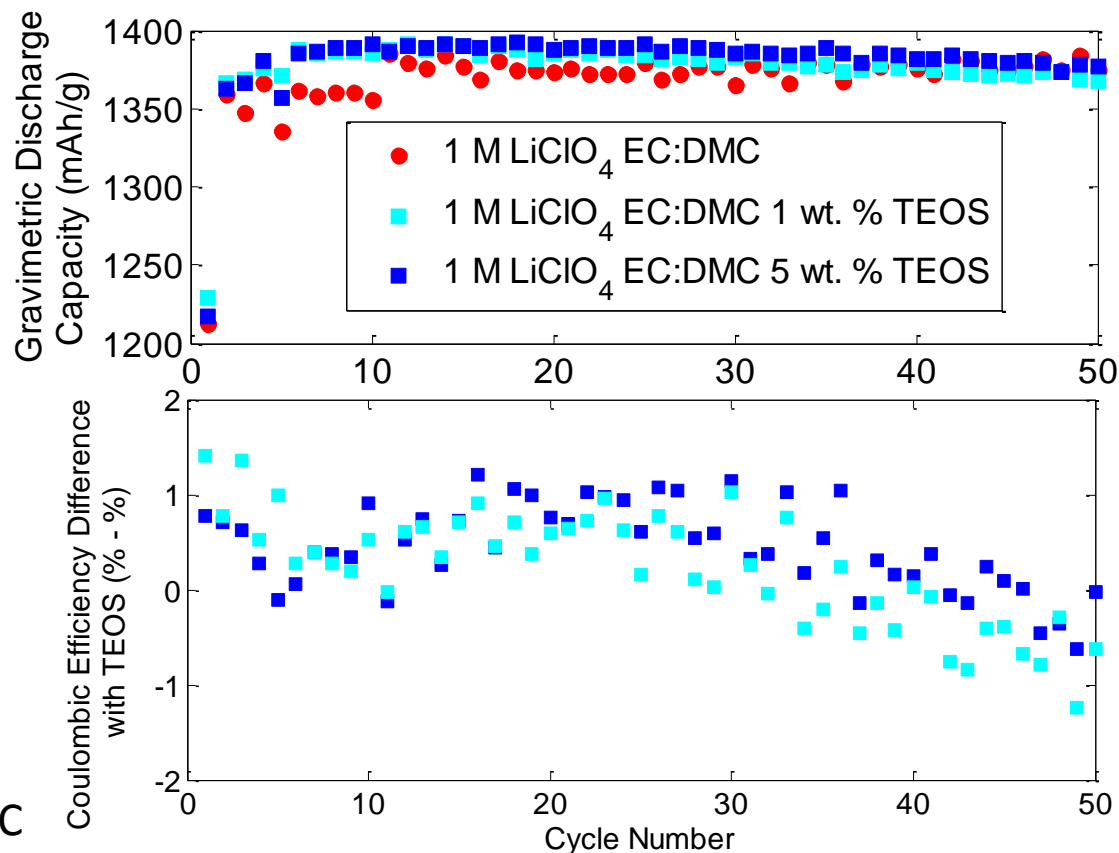


Electrolyte:

6 drops of 1 M LiClO_4 1:1 (v/v) EC:DMC

Electrochemical Performance of Coin Cells

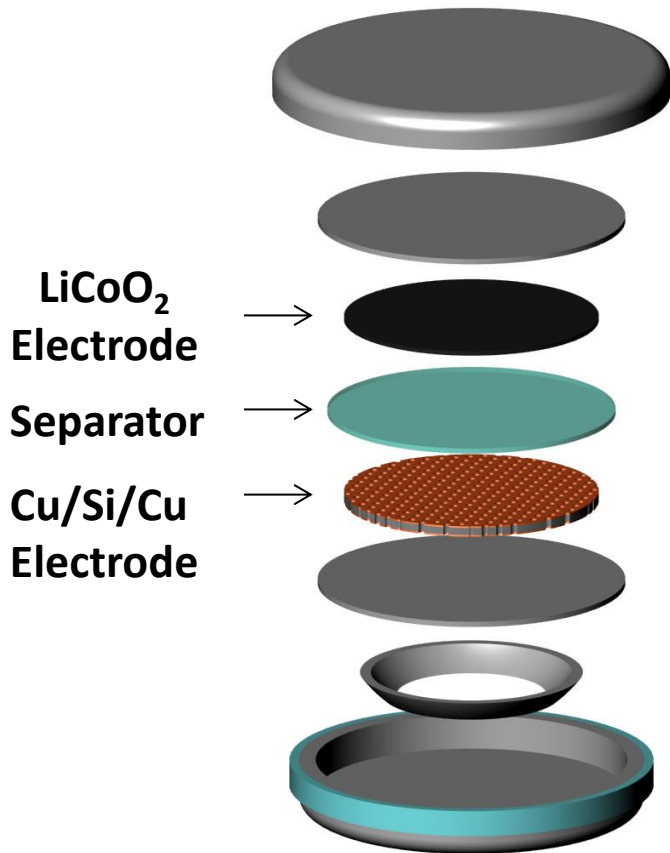
Galvanostatically charged / discharged between 3.0 to 4.2 V up to 1400 mAh/g



Full Coin Cells with TEOS have a performance improvement relative to cells without TEOS for 40 cycles

Cu/Si/Cu Electrodes in Coin Cells vs. LCO

Schematic of Coin Cell

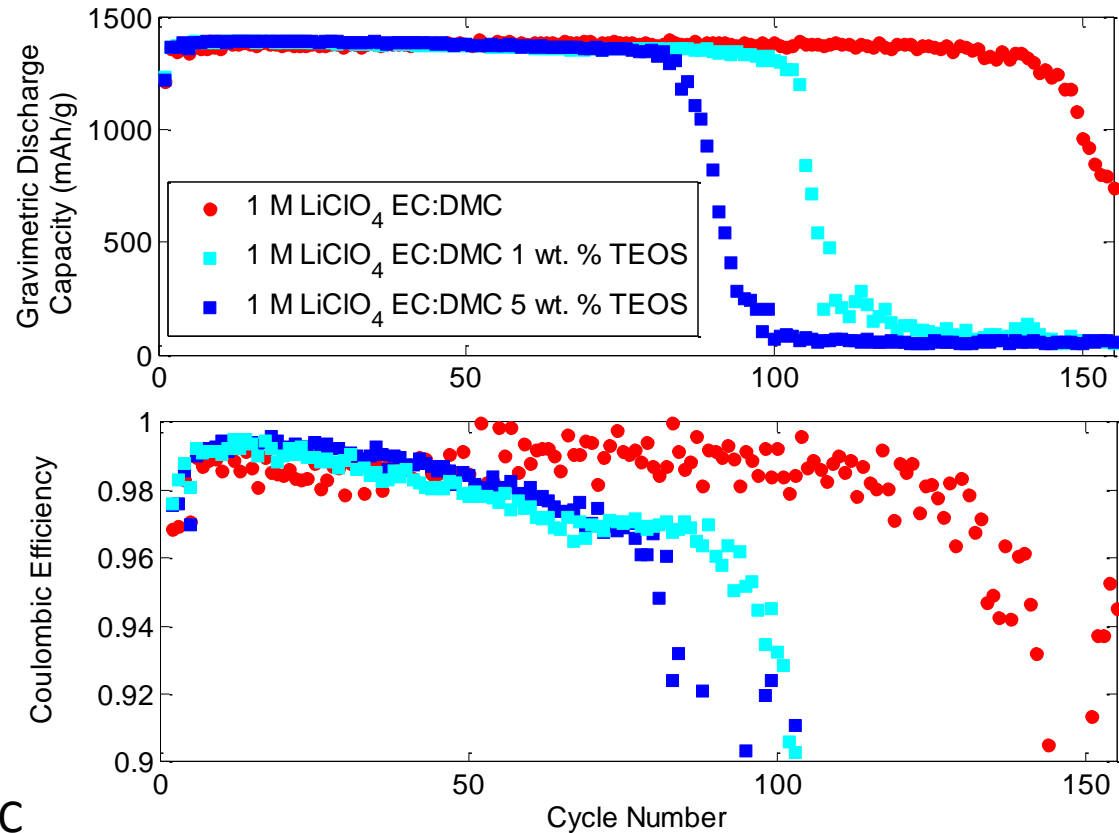


Electrolyte:

6 drops of 1 M LiClO_4 1:1 (v/v) EC:DMC

Electrochemical Performance of Coin Cells

Galvanostatically charged / discharged between 3.0 to 4.2 V up to 1400 mAh/g



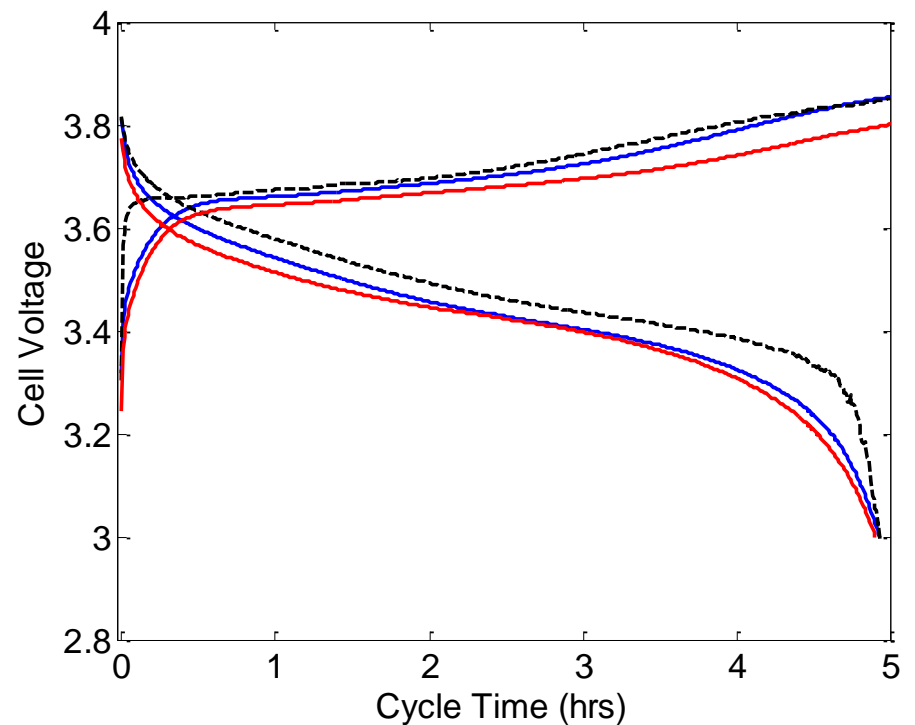
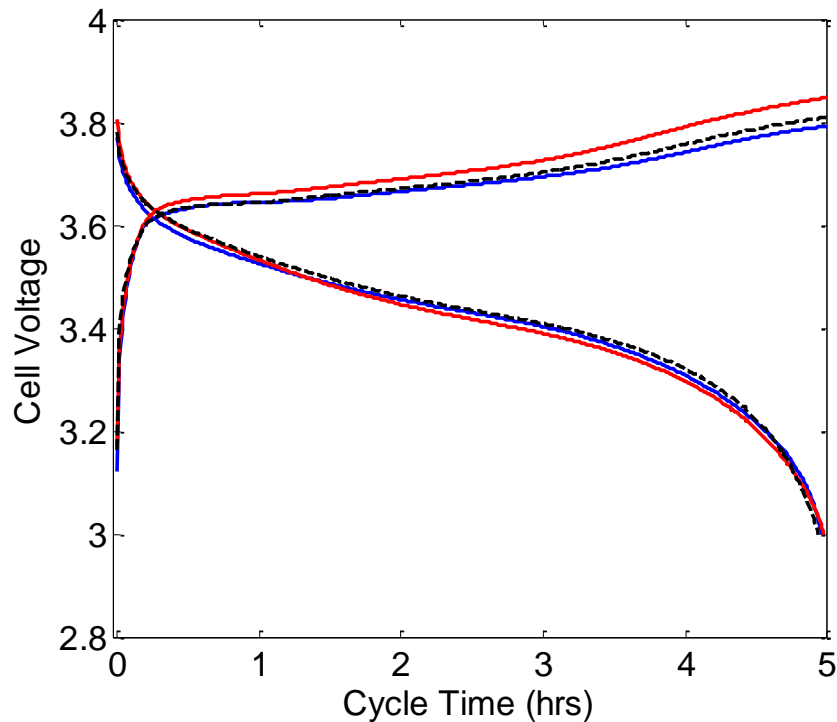
Full Coin Cells with TEOS have a performance improvement relative to cells without TEOS for 40 cycles

Voltage Profiles for Charging/Discharging of Coin Cells

Cu/Si/Cu vs. LCO Coin Cells from previous slide

----- No TEOS Cycle 10
— TEOS 1 wt % Cycle 10
— TEOS 5 wt % Cycle 10

----- No TEOS Cycle 50
— TEOS 1 wt % Cycle 50
— TEOS 5 wt % Cycle 50



Difference in Voltage Profile Evolution between Coin Cells with and without TEOS