BATTERY ASSEMBLY AND CHARACTERIZATION

COIN CELL ASSEMBLY

Disc Cutters:
• MSK-T-07 Compact Precision Disc Cutter (MTI) with 12, 13, 14, 15, 16, 17, 18, 19, 20, 24 mm diameter
• ECC-LiPunch Lithium disc cutter (El-cell) 14, 17, 18 mm
CR2016 and CR2032 coin cell cases (MTI & Hohsen)

Crimpers
• MSK-160E Digital Pressure Controlled Electric Crimper (MTI) in Ar filled glove box
• MSK-110 Hydraulic crimper (MTI) in ambient conditions

POUCH CELL ASSEMBLY

Cutters:
• HSOS-03 Single Blade Thomson punch cutter (Hohsen) with 2 geometries
  o Small: A 18 x 23 mm², S 19 x 24 mm², C 17 x 22 mm²
  o Big: A 40 x 74 mm², S 41 x 76 mm², C 39 x 72 mm²
Sealers:
• MSK-115-III Vacuum Sealer in Ar filled glove box (MTI)
• PSS96 Star Industrial Heat Sealer in ambient conditions (PackSealer)

3-ELECTRODE CELLS
• 8 x ECC-Combi (El-cell)
  o 2 x heat resistance set (up to 150 °C)

ELECTROCHEMICAL CHARACTERIZATION

Cyclers
• 2 x 8 channels 10 µA – 100 mA (BCS-810, Biologic)
• 6 x 8 channels 100 µm – 1 A (BCS-805, Biologic)
• 1 x 8 channels 10 mA (Neware)

Potentiostats
• 2 x AUTOLAB PGSTAT128N (10 nA – 1 A) with FRA32M module (Metrohm)
• 1 x Vertex (10 nA – 1 A) (Ivium)

Thermal control
• Thermal chamber with 32 coin cell holders (15-60 °C) (Neware)
• High temperature holders for 8 coin cells up to 120 °C (self-made)

OTHER CHARACTERIZATION METHODS

• Optical microscopy
• SEM
• Profilometry
• 3D microscopy
• FTIR spectroscopy
• BET/BJH surface area/pore size distribution
• TEM
• + wide variety of other tools available at VTT (please ask if you need special characterization methods)

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