Fuel Cell Test Stands and Test Equipment

- Arbin 50 W Fuel Cell Test Stand for PEM fuel cells, model FCTS 50H, modified cathode flow rate from 0.05 SLPM to 2.5 SLPM, Min/Max voltage 0v/5V and maximum discharge current of 10 A. Eight channels

- Diablo D3163A, 5000A Real-time gas analyzer kit includes MS sensor software, direct sampling interface, sampling pump, and interface heater/controller and pressure sensor/controller. RTGA kit is combined with an Agilent 3243A, 5975C inert MSD Performance Turbo System includes 5975C inert MS detector with high performance turbo pump, G1701EA MS Chemstation software

- Lynntech Industries Model FCTS MTK for testing of Direct Methanol Fuel Cells (DMFC) up to 100 W, mass flow controlled air channel w/ range of .2 lpm to 10 lpm, regulated air inlet pressure, MeOH-H2O recirculation pump 1600 ccpm maximum, MeOH heating (400W) and cooling (350W), electronic load for 100 W (5, 10 or 20V), I/O Box (Model FCTS I/O) with 10 voltage inputs.

- University fabricated stand - Dual PEM/DMFC Test System, 100 watts, 10 amps, 20 volts max, w/ 890-MEOH control unit, cell impedance measurement, current interrupt iR measurement, 1 lpm anode, 10 lpm cathode.

- Teledyne/Scribner Associates Model 890 - Dual PEM/DMFC Test System, 100 watts, 50 amps, 20 volts max, w/ 890-MEOH control unit, cell impedance measurement, current interrupt iR measurement 1 lpm anode, 5 lpm cathode.

- Teledyne/Scribner Associates Model 890 – PEM Test System, 125 watts, 50 amps, 20 volts max, anode flow 3 lpm, cathode flow 10 lpm, cell impedance measurement, current interrupt iR measurement, includes gas line heaters, 100 amp cell cable set.

- Teledyne/Scribner Associates Model 890 – PEM Test System, 1000 watts, 250 amps, 20 volts, anode flow 5 lpm, cathode flow 15 lpm, max in 6 channels, cell impedance measurement, current interrupt iR measurement, includes gas line heaters, 250 Amp cell cable set.

- Scribner Associates 896 Stack Voltage Monitor for up to 32 cells.

- Lynntech Industries stack test stand - tests up to 1 kW PEM fuel cells, Electronic load bank (100V, 300A, 2000W air cooled), combustible gas meter, humidifier, heated transfer lines Gas metering unit(1 H2 channel 0.01 - 10 slpm, 1 H2 channel 1 - 50 slpm, 1 Air channel 0.6 - 30 slpm, 1 Air channel 2.0 - 100 slpm) Reactant Gas Humidifier (up to 24ml/min of water into oxidizer gas stream and up to 12 ml/min of water into fuel stream) I/O Box (Model FCTS IO64) w/ 20 voltage inputs and 20 temperature inputs as well as 4 4-20 ma inputs for pressure transducers and 4 switched outputs for heater or fan controls, Integrated software for control of Agilent 34970A data acquisition unit, and Milliohm meter/switch unit.

- Lynntech Gas Metering Unit, Model FCTS GMET, 4 H_2 Gas Channels at 1 lpm, Methane Gas Channels at 1 lpm and Combustible Gas meter, system allows for the controlling and running of single cells and small stacks

- Avtron Mfg Avtron Freedom portable load bank - 105 KW air cooled load bank with data acquisition capabilities

- SOFCO solid oxide fuel cell test stand, 1300^{o}C maximum furnace operating temperature, automatic control system with programmable set point, ramp rate and over-temperature limit protection, cathode air gas control 0-30 slpm, anode gas flow for hydrogen and nitrogen 0-5 slpm, water column humidification with fuel flow through submerged aerator stone and water, instrumented with cell stack voltage and current digital indicators and cell stack temperature digital indicator.

- Advanced Measurements, Inc. 6 50 W solid oxide fuel cell test stand with AMI custom Integrity software for control of the PXI controlles. Individual mass flow controllers per stand include the following: CH_4 (0-7 sccm), H_2 (0-110 sccm), N_2 (0-326 sccm), CO (0-10 sccm), CO_2 (0-25 sccm) and a purge gas (0-40 sccm). Cathode flows up to 910 sccm. Anode gas temperature controls are from 20 to 150°C with a cell heating temperature range of 20 to 1000°C. Cell resistance and AC impedance monitoring per test stand.



- DC Fibertech High Temperature Furnaces for single cells or small stacks, model number DSC 01871.