Membrane conductivity cell
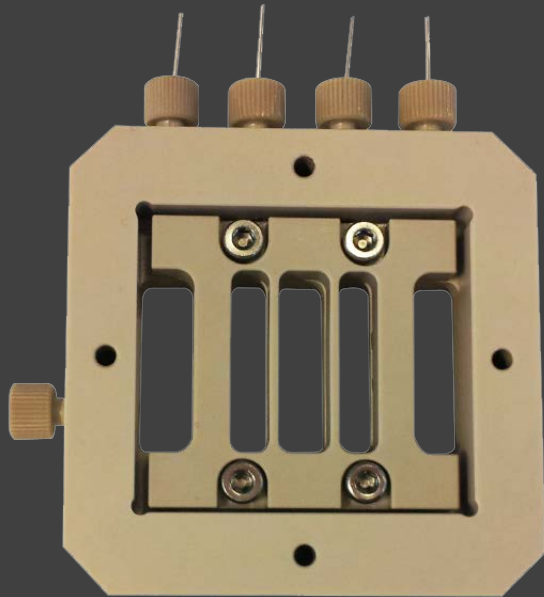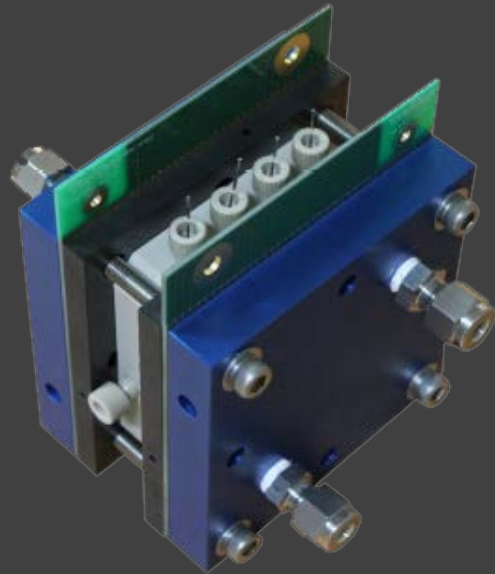

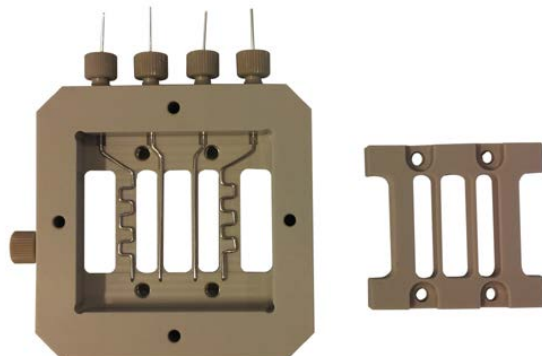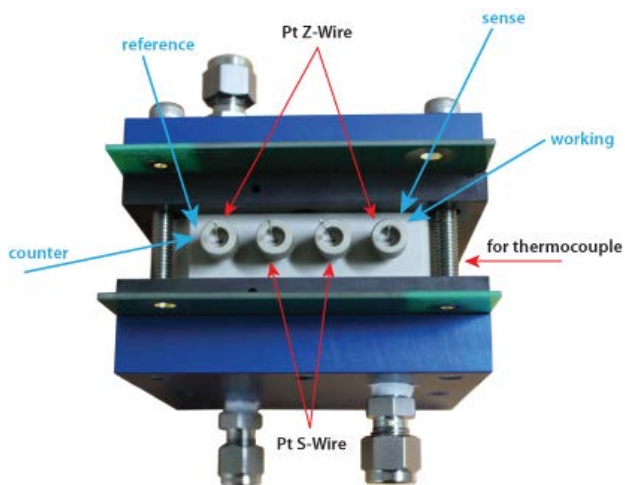
Membrane Conductivity Cell

MCC with fuel cell hardware fixture

The membrane conductivity cell, MCC, is designed to measure ionic conductivity by simply loading a membrane into cell hardware.   The MCC adopts 4 point probe for measuring conductivity.   By passing current through two outer electrodes and measuring the voltage through the inner electrodes, it allows the measurement of the conductivity.   In the 4-electrode configuration, there is virtually no current flow at the inner voltage sensing electrodes. Therefore, polarization does not occur. The second benefit of the 4-electrode sensor is its tolerance of electrode coating. Since the 4-electrode technique measures potential drop rather than resistance, the measurement remains accurate, despite minor coating.   The 2 probe measurement is also available by attaching the working and sensing electrical connections to the cathode side while attaching the counter and reference electrical connections to the anode side. Please see the below configuration.
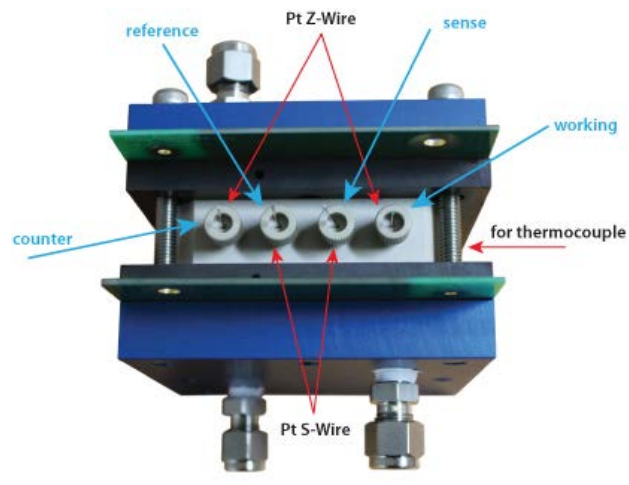
By placing the conductivity cell between the anode and cathode conduction plate, you can simply assemble the conductivity cell into your fuel cell hardware.

- four electrode technique
- material
  - cell body : PEEK
  - wire : platinum
- operating temperature :   to 130˚C
- fuel cell hardware available :
  5, 9 and 25 cm² fuel cell test hardware
  (not included, provided by WonATech)
- easy to assemble

Connecting for a 2-electrode measurement

Connecting for a 4-electrode measurement

Specifications

Dimensions

Conductivity cell	76.2W * 76.2H * 20D mm
Conductivity clamp	48W * 50H * 7D mm
S-wire (inner electrodes)	2ea, 82 mm long * 0.8 mm dia.
Z-wire (outer electrodes)	2ea, 113 mm long * 0.8 mm dia.

Material

Cell, clamp & nut	PEEK
Electrode (S-wire/Z-wire)	Platinum

Access

Voltage measurement (S-wire)	two, inner ports
Current measurement (Z-wire)	two, outer ports
Temperature measurement	one, side port