Anode Supported Cells

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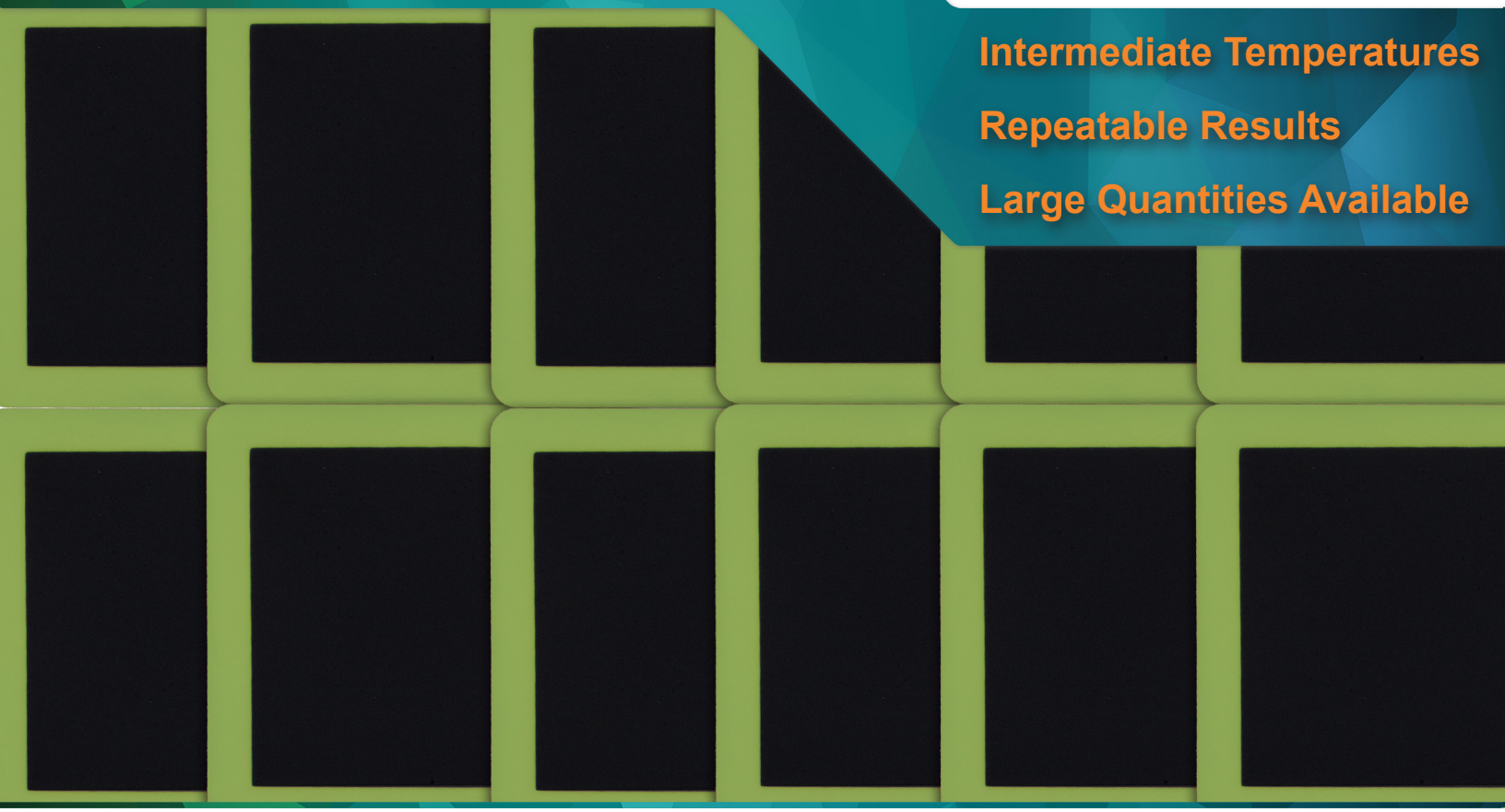
PERFORMANCE AND QUALITY DELIVERED

Intermediate Temperatures

Repeatable Results

Large Quantities Available



Anode supported cells are a great starting point for intermediate temperature (below 700°C) SOFC research and development. Using an ASC, you receive an optimal balance of membrane and ionic function by using a very thin electrolyte.

fuelcellmaterials' anode supported cells use a NiO/YSZ anode support, a YSZ electrolyte, a GDC barrier layer and an LSC cathode electrode. The thin anode support improves mass transport to the functional layers. They are available as a complete cell as well as a half cell, for those people interested in printing their own cathode layer. The standard sizes include 20 mm & 25 mm diameter button cells and 5 cm x 5 cm square or larger planar cells.

The standard cathode electrode is LSC, which provides a more optimal performance at lower stack operating temperature. For those people interested in researching other cathode materials, LSM or LSCF layers can be printed on the cells instead.

fuelcellmaterials maintains comprehensive inventory of the standard size half cell and full cell anode supports so that we can provide the parts quickly. To support the wide variety of our customer's research and development requirements, we are able to provide custom sizes and formulations.

Cells built with anode as the support structure have the advantage of having a thin electrolyte membrane. This greatly reduces the ohmic loss attributed to the electrolyte thickness, which enables lower operating temperature and higher performance.

The lower operating temperature greatly reduces degradation (related to the corrosion of the ancillary reactant delivery equipment and adverse effects on the cell), thereby increasing lifetime.

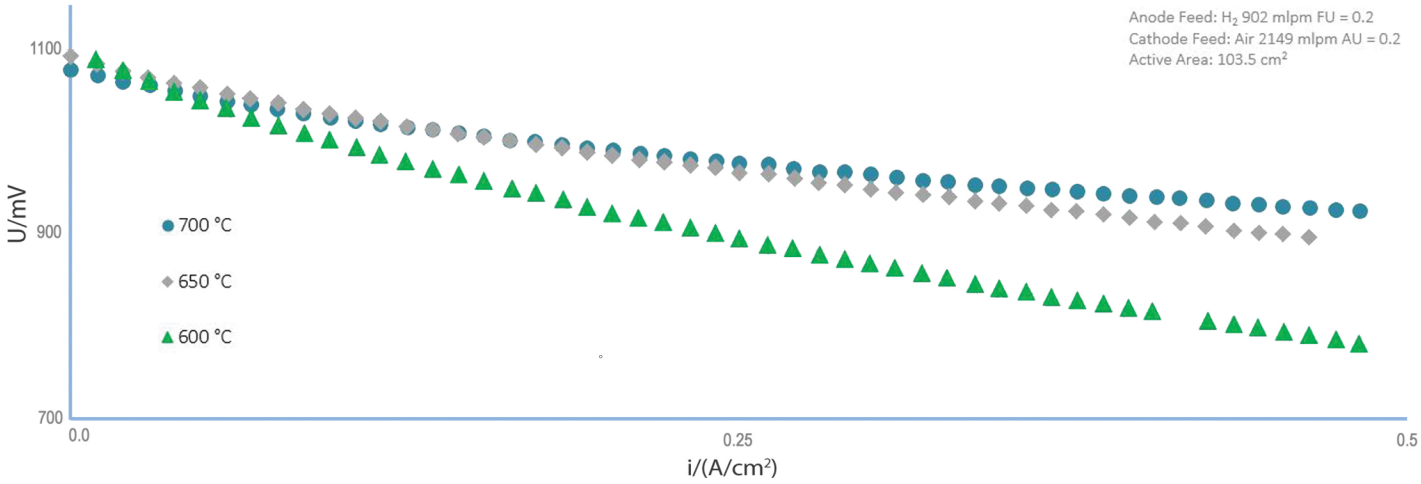
Additionally, this design has a thin cathode layer that provides an opportunity for tailoring the cathode material formulation to enhance performance or provide chemical resistance for various applications.

Providing proven and repeatable results to help simplify the complexities of research and development.

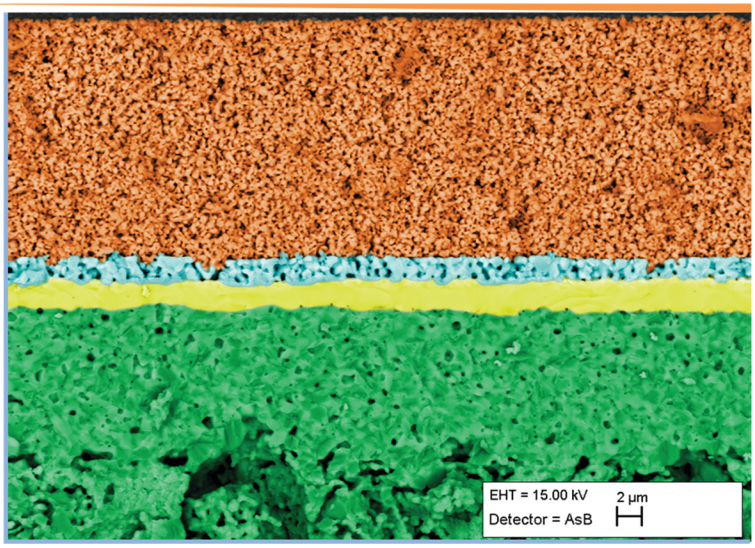
The ASC Breakdown

NiO-YSZ Anode Electrode Support	YSZ-8 Electrolyte	GDC Barrier Layer	LSC Cathode Electrode
400 µm Thickness	3 µm Thickness	3 µm Thickness	12 µm Thickness

Single Cell IV Curves



Cross Section SEM



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