

Highly efficient planar, ceramic, fuel electrode supported solid oxide cells

elcoCell®

The elcoCell technology is a bi-functional cell suitable for both electrolyser and fuel cell applications. The elcoCell technology combines highest electrochemical efficiency with the flexibility of available thickness, size and shapes. The elcoCell technology can be fitted to different stack technology requirements and for customised products.

Hydrogen production efficiency

33 kWh/kg

30% less than with alternative technologies

Fuel cell electrical efficiency

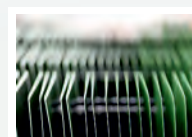
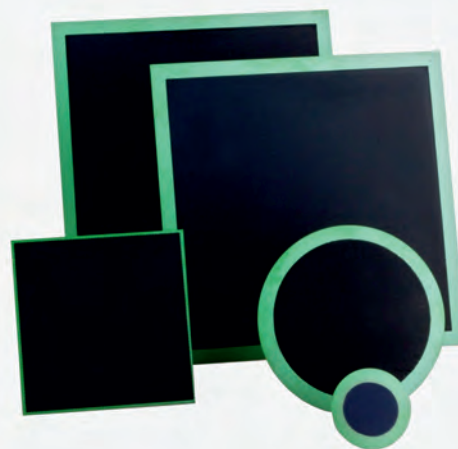
75%

About twice as efficiently as a combustion engine

Operating temperature

600-800°C

150°C lower than other solid oxide cell technologies



Find out more from elcogen.com



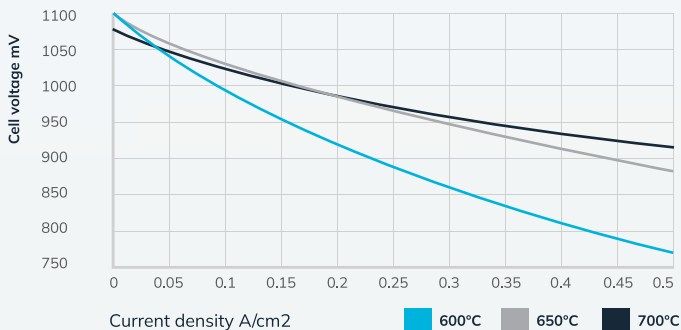
We enable the green energy transition, through our pioneering clean energy technology platform, for a sustainable world.

The anode supported solid oxide cells consists of an anode made by of a ceramic-metal composite and a cathode made by of a ceramic material.

The anode and cathode are separated by a thin ceramic electrolyte with and a protective ceramic layer between the cathode and electrolyte. The anode and optional cathode contact layer reduce overall resistance.

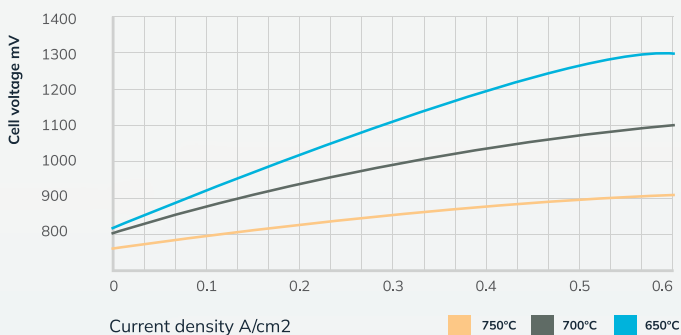
Elcogen Single CELL SOFC UI curve comparison

Anode feed: H₂ 902 mlpm; cathode feed: Air 2149 mlpm
Active Area: 103.5 cm²; FU=0.2; AU=0.2



Elcogen Single Cell SOEC UI curve comparison

H₂ 93 mlpm Air 2149 mlpm
H₂O 835 mlpm RU 0,5



Technical data	ASC-300C	ASC-400B
Fuel contact layer		NiO
Fuel electrode support composition		NiO/YSZ
Fuel electrode functional composition		NiO/YSZ
Electrolyte composition		YSZ
Electrolyte thickness		3 or 6 μm
Half-cell thickness	300 μm	400 μm
Half-cell tolerance	±30 μm	±40 μm
Barrier composition		GDC
Oxygen electrode composition		LSC
Thickness of oxygen electrode		15 μm
Total thickness	315 μm	415 μm
Thickness tolerance	±35 μm	±45 μm
Suggested operating temp		600-800°C
Standard size (cell)		12 x 12 cm
Standard size of active area		11 x 11 cm
Different sizes available		1 - 200+ cm ²
Different shapes available		Yes
Half-cells available		Yes
Contact layer of O ₂ electrode available		Yes

Interested? Contact us!

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Elcogen is an Estonian-Finnish innovative fast growing company headquartered in Tallinn.

20+ years solid oxide development experience

160+ customers in 30 countries

130+ people & growing fast!

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