

TOPAZ

COMPACT OFF-GRID ENERGY SOURCE



TOPAZ offers microtubular SOFC generators to be integrated into autonomous energy-demanding devices. SOFC electrochemical fuel cell generators are the most efficient energy sources in the range from few watts to several kilowatts.

AUTONOMOUS IoT



Devices such as lighting or radio equipment with stable power consumption, yet demanding high specific energy capacity, can be powered by TOPAZ in an affordable and reliable manner

ROBOTS AND COMPACT VEHICLES



Compact, reliable and long-lasting energy source for powering small size autonomous devices (robots, scooters, electro bikes, mono/dual wheeled transporters) in combination to Li-ion batteries

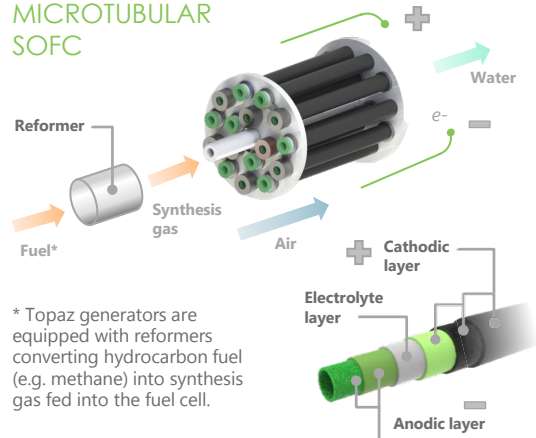
ELECTRO CARS



Propane-butane fuel cells systems, being added as a recharger for electro cars, provide autonomy and quick refueling, keeping all the benefits of non-combustion engines

TECHNOLOGY

MICROTUBULAR SOFC



Fuel cells are **transforming chemical energy** contained in fuel **directly into electricity** without intermediate stages of converting chemical energy into heat and mechanical energy.



HIGH POWER DENSITY

in conjunction with high electric efficiency and easily extendable power capacity 1+ kW/kgs

RELIABLE

Stable operation irrespective of ambient conditions
No self-discharge in standby mode
No mechanical moving parts

ADVANTAGES

COMPACT

Smoothly power increase from 30W for a device of 1L volume to 1kW

READY FOR WIDE ADOPTION

TOPAZ utilizes available and commonly used fuel (methane or propane-butane)

EXPERTISE IN ELECTROCHEMISTRY

InEnergy Group core competence lies in electrochemical solutions.

We employ more than 60 researchers, including 15 with PhD degrees.



TOPAZ REFERENCE DESIGNS



PORTABLE
30 – 100 W

TOPAZ-S

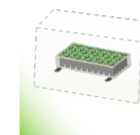
A portable power source (30–100 W) achieving high specific energies for a wide variety of consumer electronics; can serve as a long-lasting off-grid power source for lighting or radio equipment in field conditions or as a charger for portable electronic devices.



MOBILE
100 – 300 W

TOPAZ-M

A mobile power unit (100–300 W) for a range of emerging mass markets: Internet of Things, small autonomous robots, vending machines, personal mobility devices and other applications. Able to operate in harsh ambient environment.



STATIONARY
0.3 – 1 kW

TOPAZ-L

A stationary power unit (0.3 – 1 kW) designed for continuous unattended operation for months particularly in remote areas and harsh climates. Ideal as a backup or off-grid power source to low-power consumers, such as telecom or monitoring infrastructure.