

## Spectronik's Small Hydrogen Fuel Cell

Since Japan's announcement in October 2020 to go carbon neutral by 2050, the market demand for carbon neutrality has increased year by year. As the sole authorized distributor in Japan, NEXTY Electronics Corporation has started selling small hydrogen fuel cells built by Spectronik, a company which excels in the development of high-density hydrogen fuel cells. Owing to its size, this product can be equipped in relatively small applications such as industrial vehicles (AGVs, golf carts, etc.), robots, drones, and small agricultural equipment.

Do you have any of the following needs? We want to...

- Extend the running time of AGVs, drones, etc.
- Reduce the noise of equipment powered by a gasoline engine
- Carry out verification tests, including technical support, when considering the use of a hydrogen fuel cell in small applications

### Comparison with gasoline engines and lithium-ion batteries

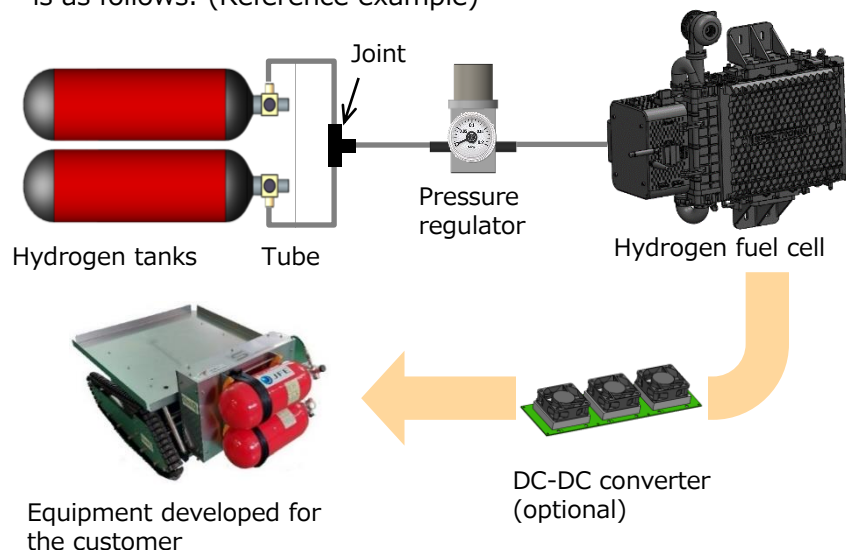
Power source	Hydrogen fuel cell	Gasoline engine	Lithium-ion battery
Running time	◎	◎	×
Quietness	○	×	◎
Eco-friendly	○	×	○

\*Survey by NEXTY Electronics Corporation

Hydrogen fuel cells can be used for a much longer time compared to conventional lithium-ion batteries. They are also quieter than gasoline engines and emit less carbon emissions.

### Hydrogen fuel cell system - basic configuration

The basic configuration used to create a hydrogen fuel cell system is as follows. (Reference example)



### Track record in Japan

In collaboration with a lawnmower manufacturer, UniQ Inc., and a partner company which produces high-pressure tanks, we have developed a hydrogen fuel cell powered lawnmower. NEXTY Electronics Corporation provided the hydrogen fuel cell and technical support for the development project.



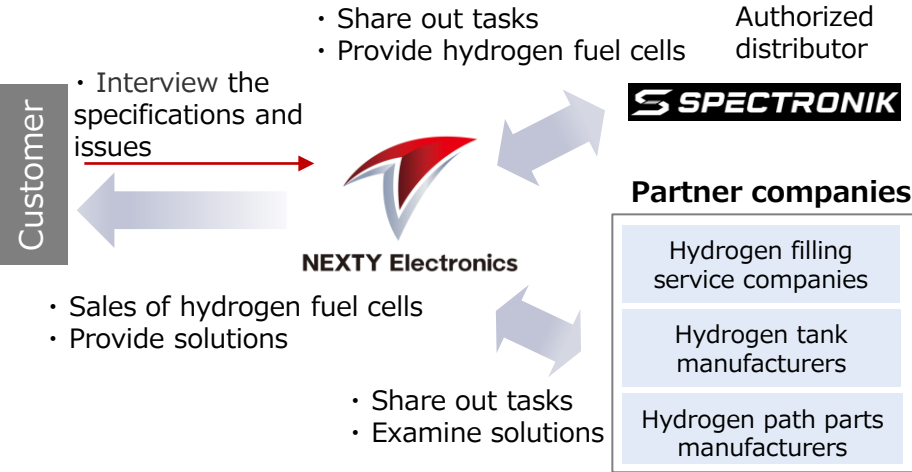
Spectronik's radio-controlled hydrogen fuel cell lawnmower (prototype)

■ Press release (Japanese) ■

<https://prtimes.jp/main/html/rd/p/000000002.000087374.html>

## Technical support system

As well as providing products, we provide technical support, including peripheral equipment, in cooperation with partner companies.



\*Please contact us regarding commercial distribution of peripheral products for hydrogen fuel cells.

## Possible Uses



Golf carts



AGVs



Drones



Portable generators



Service robots

## Hydrogen fuel cell - Protium series product lineup

Spectronik's Protium series is the ideal hydrogen fuel cell system for small applications.

Representative products below  
(full lineup = 9 product numbers)



Product	Protium-25	Protium-1000	Protium-2500
Rated output (W)	25/30W	1000/1200W	2500/3000W
Rated output (A)	4.2/5A	55.5/66.6A	55.5/66.6A
Output voltage (V)	6-9VDC	18-27VDC	45-68VDC
Operating temp. limit (°C)	0°C~40°C	-10°C~45°C	-10°C~45°C
Approx. weight (g)	360g	3,670g	7,880g
Dimensions (mm)	95 × 76 × 85mm	352 × 154 × 290mm	623 × 154 × 290mm

### ■ Main strengths and features

- A wide-ranging product lineup from 25W to 2500W output for use in many different applications
- Modules can be paralleled to meet higher power needs
- Stacks can be monitored on a computer, automatic control function also installed

## Spectronik – Corporate Profile

- Corporate Name: Spectronik Pte. Ltd.
- Established: 2011
- CEO: Jogjaman Jap
- Business: Development and manufacture of high-density hydrogen fuel cells for industrial machinery
- Headquarters: Singapore
- Sales track record: 28 countries
- Website: <https://www.spectronik.com>