

# Energy Storage Revolutionized: Lightweight, Safe, Zero-Pollution Solutions for Power and Personal Transportation



## Low Cost, On-Demand H<sub>2</sub> Generation

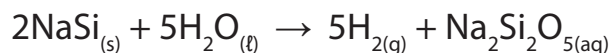
SiGNa's mobile power platform is a general-purpose power system, capable of acting as a range extender for electric bicycles. Hydrogen is generated on-demand at low pressure and is then converted to electric power by a low-cost proton exchange membrane (PEM) fuel cell. This power solution may be used with minimal modifications and assembly on many popular electric bicycle designs.

## Hybrid System Technology

SiGNa's power solution completes an electric bicycle solution by delivering power either for direct fuel cell drive, combined fuel cell/battery drive, or direct battery recharging. The extender provides longevity to the e-bike's existing lithium battery, giving the bike more than 3 times the normal range. The battery can still be recharged with standard adapters without removing the SiGNa range extender.

## Safe, Controllable Chemistry

Sodium silicide — a non-flammable, air-stable powder — reacts even with non-potable, non-distilled waters at room temperature to form H<sub>2</sub> in a rapid, stable reaction:



## Low Pressure Output

SiGNa's sodium silicide generates H<sub>2</sub> at low pressure (< 30 psi) enabling safe and easy use in a lightweight, inexpensive cartridge.

## Hot-Swappable

Exchange cartridges to extend runtime without interrupting power.

## Safe, Eco-Friendly

SiGNa's power solution emits zero air pollution. The sodium silicate (Na<sub>2</sub>Si<sub>2</sub>O<sub>5</sub>) by-product poses no environmental risk and resides completely in the original fuel container which may be readily recycled.

## Product Specifications



## SiGNa Cartridge Specifications

- Energy: Over 800 W-Hrs for each 750 g cartridge
- Cartridge Volume: 1.4 liters

## SiGNa System Specifications

- Power: Maximum continuous 200 W
- Voltage: Regulated 41 VDC with built-in current/voltage control for Li-battery recharging
- Startup Time: Instant
- Exhaust: Water vapor only – zero GHG emissions

## Features

- Real-time swappable cartridges
- Fuel gauge display
- Dynamic, load-following, rapid start/stop H<sub>2</sub> generation
- Removable power system as a non-polluting generator replacement



**Winner of the  
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At SiGNa, we can customize our hydrogen solutions to meet all your portable power needs.

720 Olive Drive, Suite C, Davis, CA 95616 USA | 1-530-554-2217 | fax: 1-866-587-9549 | [www.signachem.com](http://www.signachem.com)