




One Stop Laboratory Solution...

HYDROGEN GAS GENERATOR

ATHENA TECHNOLOGY

Why ATHENA

Provide one stop solution for customized hydrogen generating equipment and service




Rich experience in Hydrogen engineering and plant based equipment fabrication & supply.



Experienced experts in H2 related field to learn and do customer demand analysis.



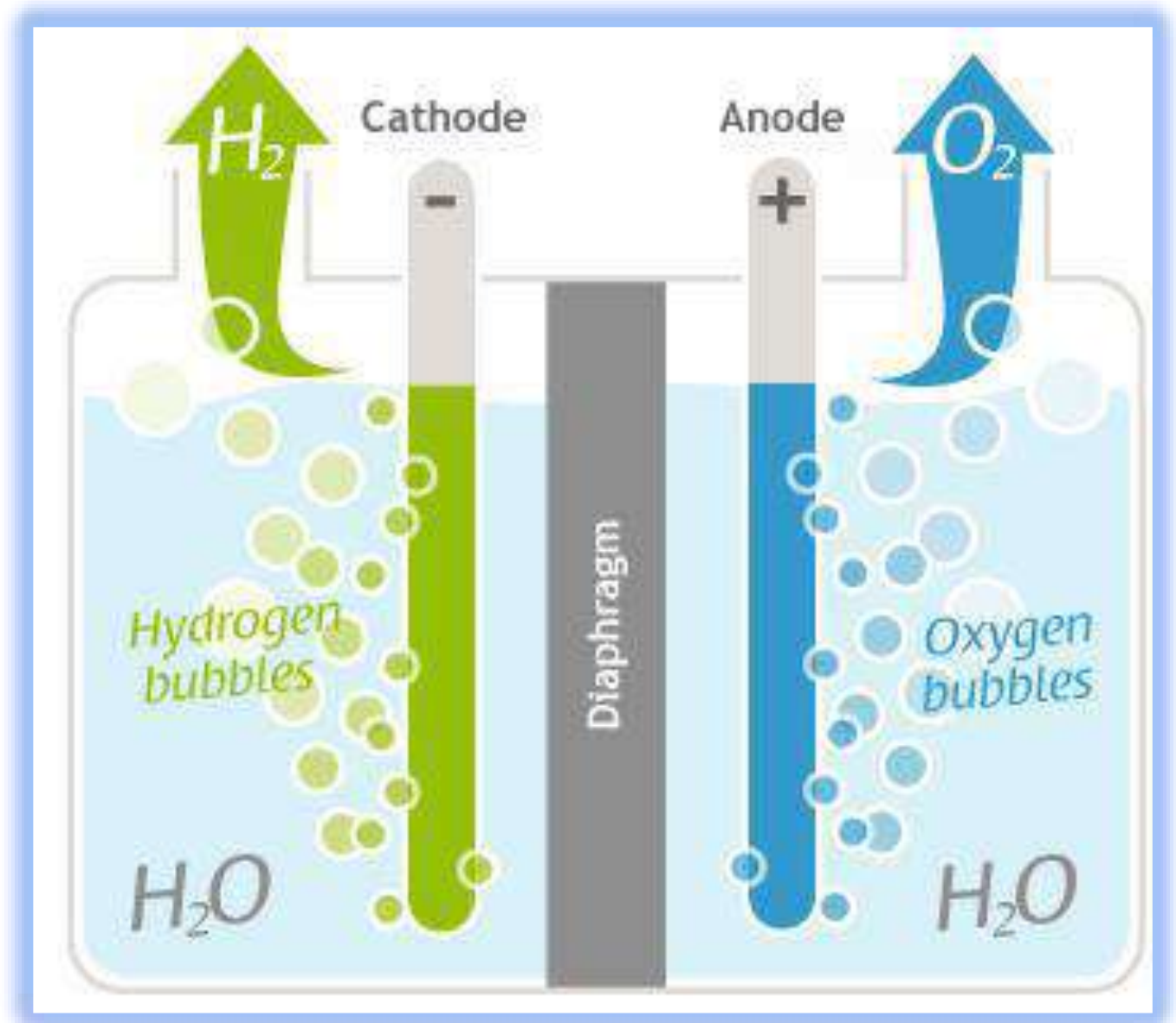
Professional team with expertise for overseas project management.



Experience with European and American Pioneer in Hydrogen Industry.

Product Introduction

- Water H_2O + Power = Hydrogen H_2 (+ Oxygen O_2)
- **Working pressure (according to technology) Up to 10-20 bar**
- Hydrogen production Up to $50Nm^3/h$
- Gas purity with purification system : $99.7\% \pm 0.2\%$
- (Water saturated)
- After purification Up to 99.999%



Athena H2 Generator

System Integration

- H2 produces by Electrolysis Technology to produce UHP Hydrogen Gas from H2O

High Reliability

- High quality components
- Optimized design to ensure the excellent quality

Cost Saving

- Low operation cost 7 x 24 Continuously running

Easy for Operation

- Optimised structure,
- Compact design
- Plug and play

Intelligent Control

- Intelligent evacuation of unqualified Hydrogen to realize unattended

Unique Material Selection

- Adsorption canister uses astronautics sophisticated aluminum profile,

| MODEL | (Nm3/h) H2 Capacity | (Nm3/h) O2 Capacity | H2 Purity | (A) Current | (V) DC Voltage | Cell Working Temp | Total Water Consumption | Total Power Consumption | Cooling Water Consumption |
|-----------|---------------------|---------------------|-----------|-------------|----------------|-------------------|-------------------------|-------------------------|---------------------------|
| ATH-5S | 5 | 2.5 | 100.00% | 250 | 100 | < 80°C | 5 L/hr | 27 Kw*h | 4 m3/h |
| ATH-10S | 10 | 5 | 100.00% | 250 | 200 | < 80°C | 10 L/hr | 52 Kw*h | 6 m3/h |
| ATH-15S | 15 | 8 | 100.00% | 960 | 78 | < 80°C | 15 L/hr | 78 Kw*h | 10 m3/h |
| ATH-20S | 20 | 10 | 100.00% | 960 | 90 | < 80°C | 20 L/hr | 105 Kw*h | 12 m3/h |
| ATH-30S | 30 | 15 | 100.00% | 960 | 156 | < 80°C | 30 L/hr | 155 Kw*h | 12 m3/h |
| ATH-50S | 50 | 25 | 100.00% | 960 | 260 | < 80°C | 50 L/hr | 260 Kw*h | 18 m3/h |
| ATH-75S | 75 | 38 | 100.00% | 960 | 392 | < 80°C | 75 L/hr | 382 Kw*h | 18 m3/h |
| ATH-100S | 100 | 50 | 100.00% | 3000 | 168 | < 80°C | 100 L/hr | 512 Kw*h | 18 m3/h |
| ATH-150S | 150 | 75 | 100.00% | 3000 | 252 | < 80°C | 150 L/hr | 764 Kw*h | 20 m3/h |
| ATH-200S | 200 | 100 | 100.00% | 3000 | 334 | < 80°C | 200 L/hr | 1012 Kw*h | 20 m3/h |
| ATH-250S | 250 | 125 | 100.00% | 3000 | 400 | < 80°C | 250 L/hr | 1212 Kw*h | 20 m3/h |
| ATH-300S | 300 | 150 | 100.00% | 3000 | 501 | < 80°C | 300 L/hr | 1515 Kw*h | 25 m3/h |
| ATH-350S | 350 | 175 | 100.00% | 3000 | 585 | < 80°C | 350 L/hr | 1760 Kw*h | 25 m3/h |
| ATH-400S | 400 | 200 | 100.00% | 7300 | 700 | < 80°C | 400 L/hr | 2115 Kw*h | 25 m3/h |
| ATH-500S | 500 | 250 | 100.00% | 7300 | 343 | < 80°C | 500 L/hr | 2520 Kw*h | 30 m3/h |
| ATH-600S | 600 | 300 | 100.00% | 7300 | 390 | < 80°C | 600 L/hr | 2860 Kw*h | 30 m3/h |
| ATH-700S | 700 | 350 | 100.00% | 7300 | 480 | < 80°C | 700 L/hr | 3525 Kw*h | 30 m3/h |
| ATH-800S | 800 | 400 | 100.00% | 7300 | 550 | < 80°C | 800 L/hr | 4040 Kw*h | 40 m3/h |
| ATH-900S | 900 | 450 | 100.00% | 7300 | 619 | < 80°C | 900 L/hr | 4540 Kw*h | 40 m3/h |
| ATH-1000S | 1000 | 500 | 100.00% | 7300 | 686 | < 80°C | 1000 L/hr | 5030 Kw*h | 40 m3/h |
| ATH-2000S | 2000 | 1000 | 100.00% | 12500 | 722 | < 80°C | 2000 L/hr | 9200 Kw*h | 100 m3/h |
| ATH-3000S | 3000 | 1500 | 100.00% | 12500 | 1085 | < 80°C | 3000 L/hr | 14000 Kw*h | 100 m3/h |

HYDROGEN ENERGY APPLICATION INDUSTRY



Hydrogen Fuel Station by Renewable Energy



Chemical Hydrogenation



Hydrogen Fueling Station for Hydrogen Fuel Cell Car or Bus



Metallurgical Industry



Power Plant Industry



Hydrogen Fueling Station for Hydrogen Fuel Cell Drone



Electric Appliance Manufacture



Glass Processing Industry



Cutting Industry



Hydrogen Agricultural Irrigation

Electrolyser CELL



World leading
technology



High efficiency/Low
Consumption



Reliable
Performance



Solid Quality &
Performance

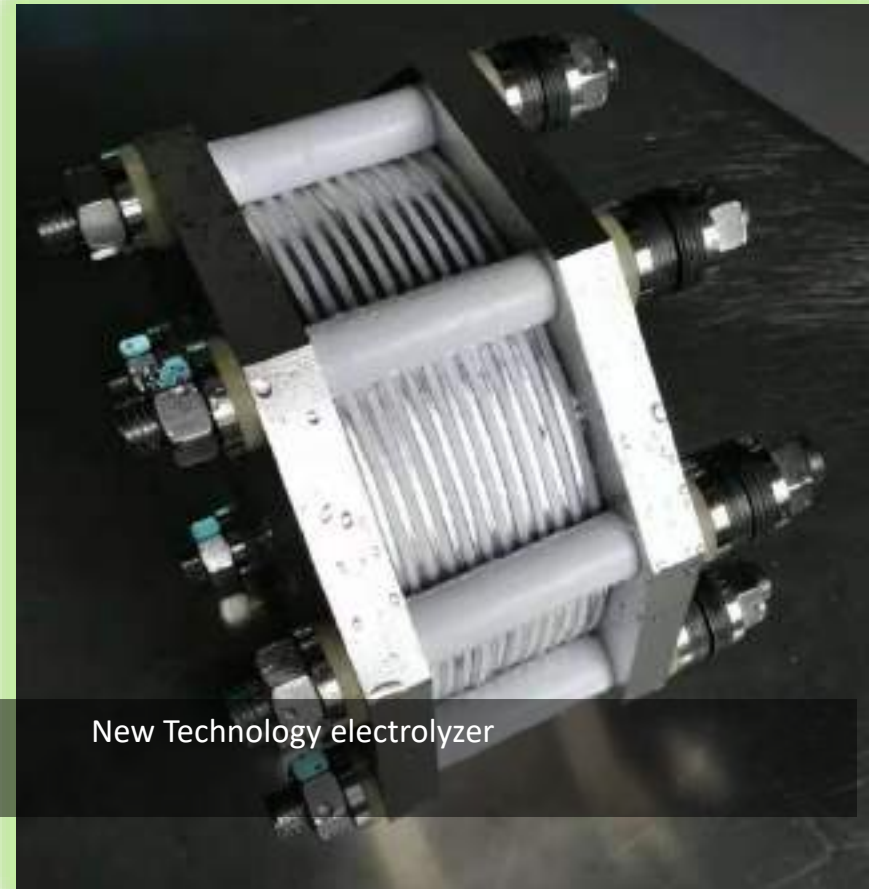


Less footprint



ELECTROLYZER-CELL

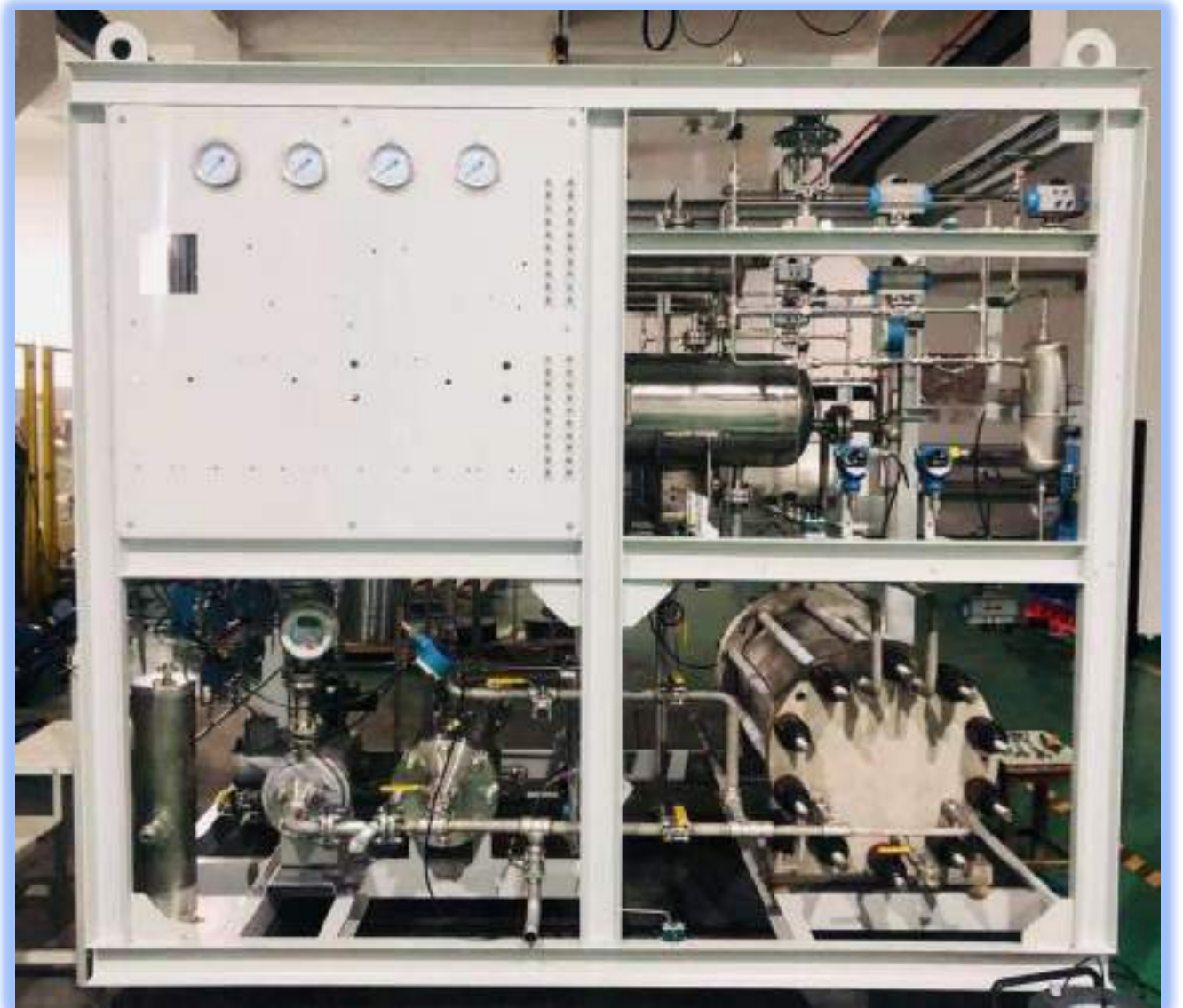
- **Electrolytic Cell**, we apply bipolar technology, special material polar frame, non-asbestos membrane cloth and low cost electrode for electrolysis cell. our major material for electrode is nickel. H₂ will be evolved on cathode side of cells and O₂ will be evolved on the anodes of cells at the same time.
- **H₂/O₂ Separator**, H₂ and O₂ come separately into H₂ separator, where they are cooled by cooling water and separated from the mixture of gas-lye. after that H₂ is cooled by coil-piped cooler which is erected in the washer. final H₂ flows into hydrogen drying unit for further purification. O₂ process will be same as H₂ process.



New Technology electrolyzer

H2 Separation and Purification Unit

- Compact design w/SS frame
- SS316L pipeline
- Lye cooler SS 316L applied
- ASME, PED standard available
- Separation and purification Skid with SS material



Dry unit

- Three tower design
- Zero consumption of regeneration

