

Bosch Optical Gas Spectrometer



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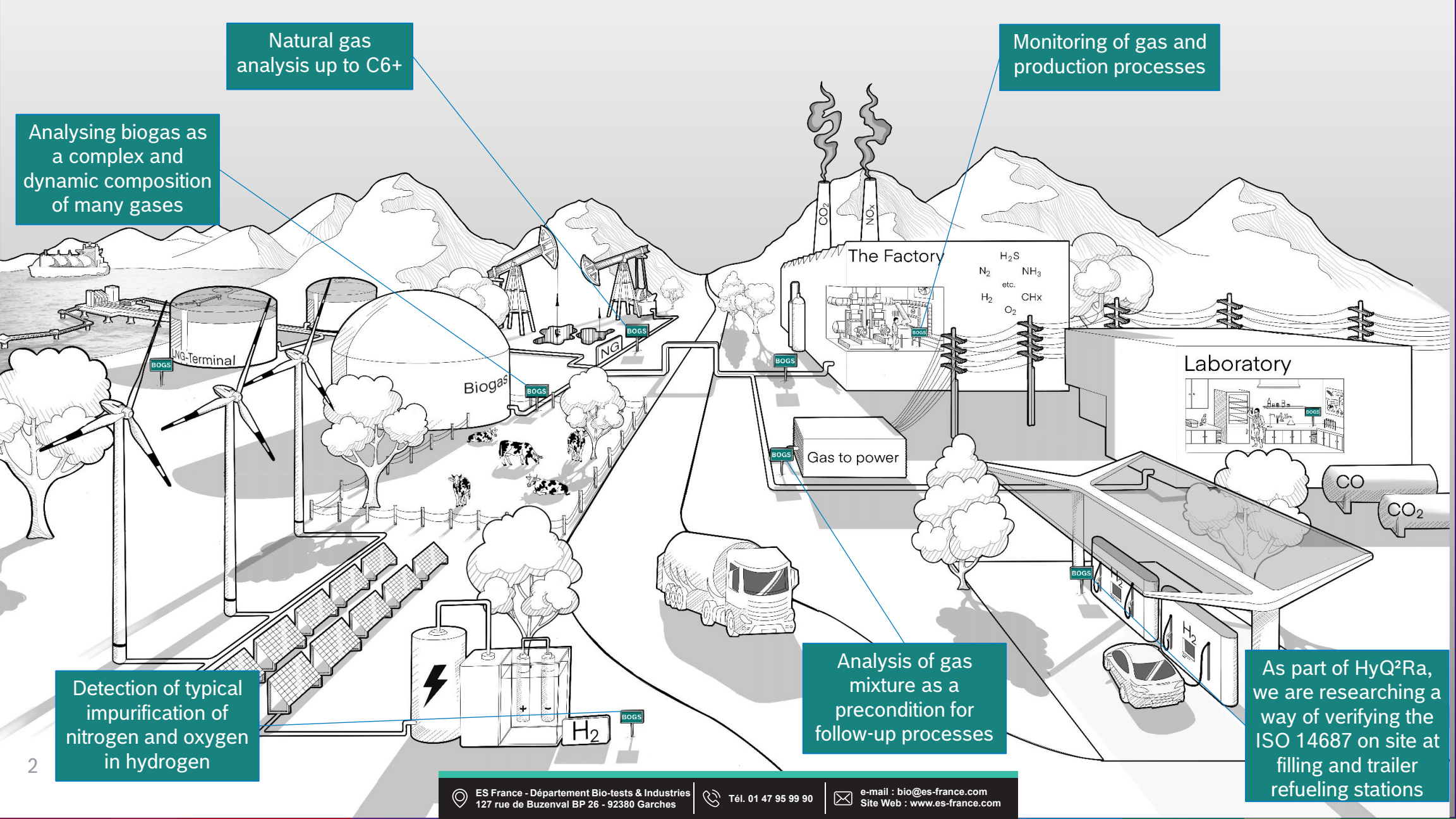
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BOSCH



Natural gas
analysis up to C6+

Analysing biogas as
a complex and
dynamic composition
of many gases

Monitoring of gas and
production processes

Detection of typical
impurification of
nitrogen and oxygen
in hydrogen

Analysis of gas
mixture as a
precondition for
follow-up processes

As part of HyQ²Ra,
we are researching a
way of verifying the
ISO 14687 on site at
filling and trailer
refueling stations

Product Profile

Bosch Optical Gas Spectrometer (BOGS)

Experience the future of gas analysis with our compact Raman-based BOGS. It enables you to detect a wide range of gases at a glance and is ready for hydrogen and natural gas applications.

Multi-gas inspection

Of molecular based gases



Plug & measure

Inline and at high pressure (w/o probe extraction and carrier gas)

 **Fast & accurate:** 0.1 vol% in less than 10 s, longer analysis time for 0.01 vol%

 **Inline operation:** Up to 40 °C and 40 bar

 **Easy data analysis:** Signal is strongly linear to gas density and analysis time

 **Emission free:** No emission of the analyzed gas

 **Cost-effective:** Easy installation and calibration, no carrier gas required

 **Small size:** 19-inch rack design compatible, In/Outlet interface ½ inch

Applications for the BOGS

Focus on natural gas and hydrogen



Natural gas

Gas matrix C1-C5, C6+, N₂, O₂, CO₂, H₂

- Use cases
- Natural gas composition
 - Gas-to-Power



Hydrogen

Gas matrix H₂, O₂, N₂, H₂O

- Use cases
- Fuel cell development and production
 - Electrolyzer development and production
 - H₂-Sensor reference

Your gas mix?

Gas matrix Your gases? E.g. NH₃,

Use cases Your applications, your analytics

BOGS Series Q1/2025

Pressure

0,1 – 40 bar abs. (2.5, 10, 40 bar)

Gas temperature

5 – 40°C

Environment temperature

5 – 40°C
Best measurement accuracy: 15 – 35°C

Max. humidity

< 90% rel.
No condensation allowed in gas path

Detection limit

100 ppm*

**Depending on gas matrix*

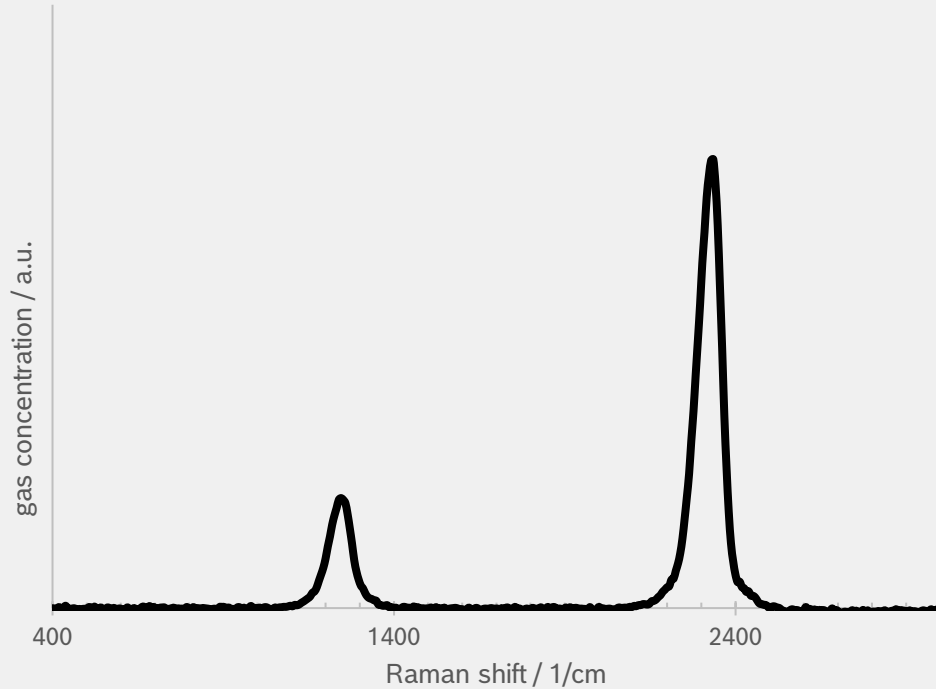


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How it works

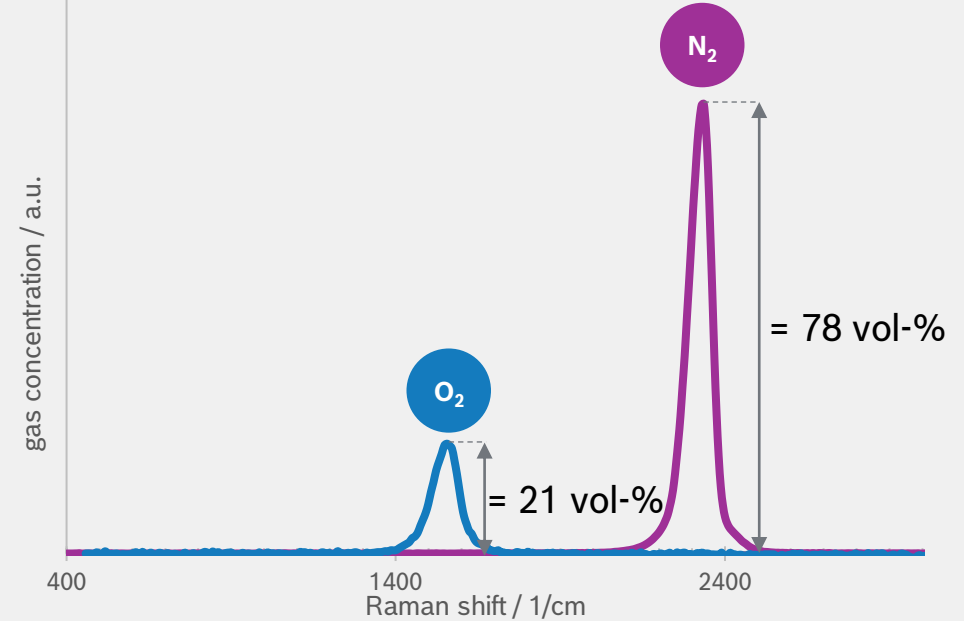
1. BOGS creates a digital signal

based on gas input under the use of Raman technology



2. BOGS interprets the signal

based on position and height in relation to calibrated gas

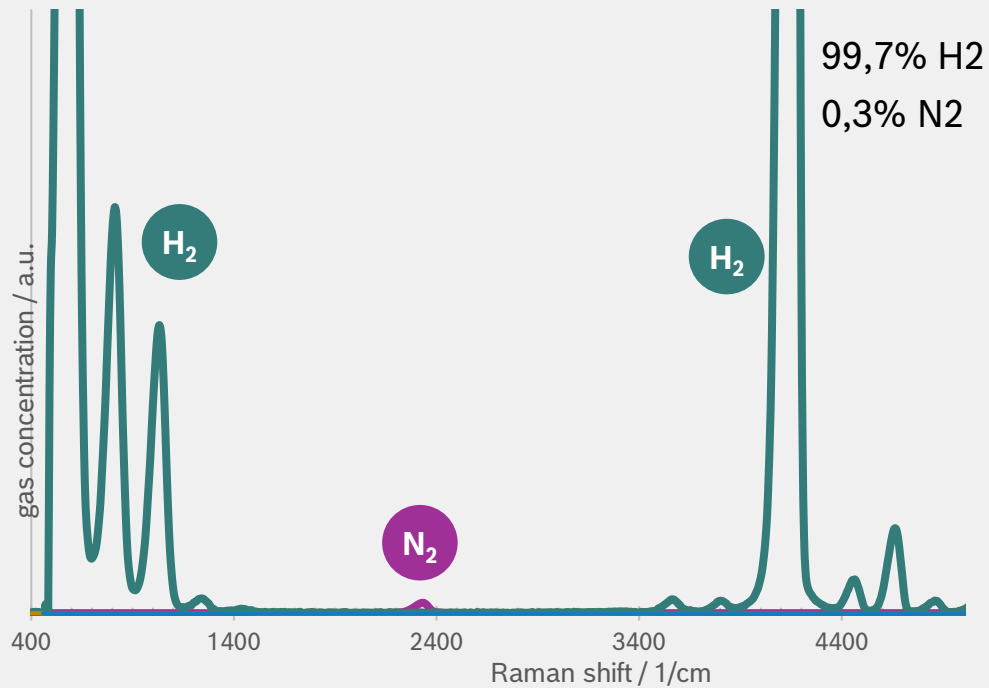


Qualitative representations

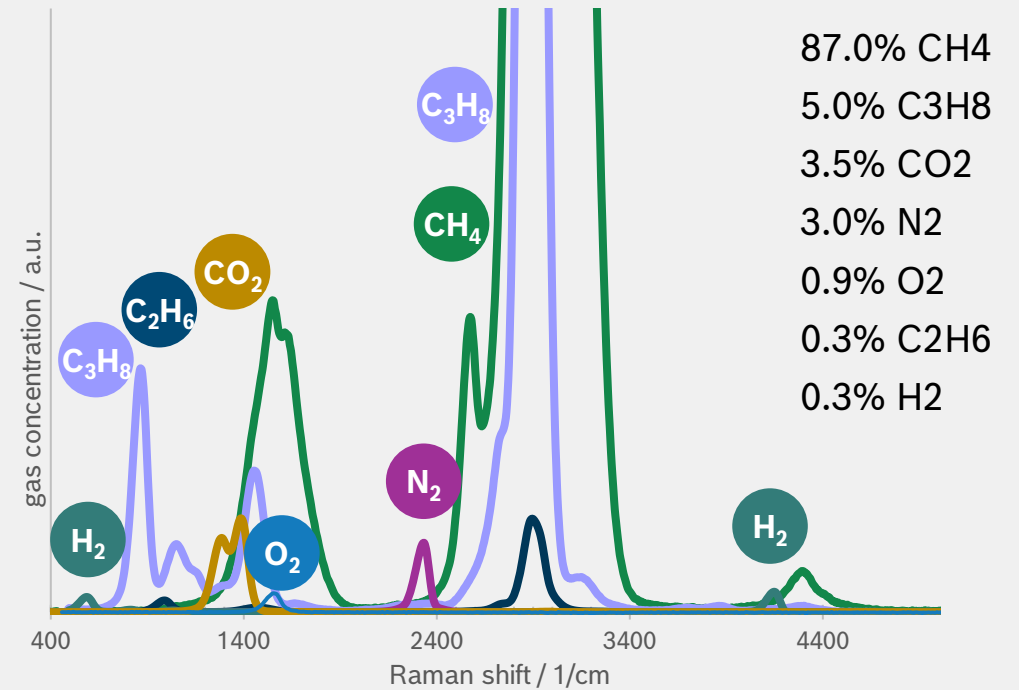
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Example applications

Purity of hydrogen



Complex natural gas (under development)



Qualitative representations

Bosch Optical Gas Spectrometer

Periphery

The scope of delivery includes the **BOGS**, the **power supply unit** and the **user software (HMI)** for installation on a customer device.

Schematic representation of the BOGS system:

