

High-pressure modular gas regulation technology for hydrogen and industrial gas applications

Summary

Profile type

Technology offer

Company's country

France

POD reference

TOFR20250619013

Profile status

PUBLISHED

Type of partnership

**Commercial agreement with
technical assistance**

Targeted countries

- **Netherlands**
- **Switzerland**
- **Spain**
- **Poland**
- **Sweden**
- **Germany**
- **Austria**
- **United Kingdom**
- **Italy**

Contact Person

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Term of validity

19 Jun 2025**19 Jun 2026**

Last update

19 Jun 2025

General Information

Short summary

A French SME specialized in high-pressure gas management has developed a patented modular technology for gas regulation, particularly adapted to hydrogen and other industrial gases. The technology, based on a plug-and-play concept, integrates multiple control and safety functions into compact, scalable units. The company seeks industrial and technological partners for commercial agreements with technical assistance or research cooperation.

Full description

A French company with over 14 years of experience in the industrial gas sector offers a disruptive technology platform for high-pressure gas regulation, specifically designed for demanding applications such as hydrogen mobility, industrial gas distribution and defense sectors.

The core innovation is a patented modular technology combining two primary elements: a Smart Cube, which allows leak-tight and flexible plug-and-play assembly without the need for tubing or fittings, and an interchangeable Cartouche, which performs a specific function such as pressure regulation, filtration, or shut-off. This design results in enhanced modularity, upgradability, and ease of maintenance.

The solution has proven particularly effective in hydrogen handling systems, including electrolyzer interfaces, high-pressure storage and buffer systems (up to 95 MPa), trailer loading/unloading systems, and dispenser panels. The modular approach enables the configuration of bespoke gas panels tailored to customer-specific needs, facilitating fast deployment, increased safety, and reduced operational cost.

The technology is intended for partners seeking advanced gas regulation and distribution solutions for hydrogen and other gases. The company is open to collaborations through commercial agreements with technical assistance, joint development, or research and development cooperation agreements for further product integration or adaptation to new use cases.

Advantages and innovations

- Patented modular architecture combining Smart Cube and functional Cartouche
- Designed for very high-pressure hydrogen environments (up to 95 MPa)
- Compact and scalable design enabling reduced footprint and high integration
- Plug-and-play assembly allowing rapid deployment and leak-proof configuration
- Fast and cost-effective maintenance due to removable and interchangeable modules
- Proven field applications in hydrogen mobility, defense and industrial gas sectors

Technical specification or expertise sought

Stage of development

Already on the market

IPR Status

IPR granted

IPR Notes

The technology is protected by patents covering modular high-pressure systems for gas handling. International filings secure the innovation in key industrial markets.

Sustainable Development goals

• Not relevant

Partner Sought

Expected role of the partner

The company seeks:

- Industrial integrators in hydrogen mobility or gas infrastructure seeking to integrate modular gas regulation systems into their applications.
- OEMs and system engineers needing bespoke high-pressure gas management solutions.
- Research and technology developers interested in co-developing new applications based on the modular technology.

The desired cooperation types include:

- Commercial agreement with technical assistance: adaptation of the solution to client-specific environments or integration into complex systems.
- Research and development cooperation: joint development of new hydrogen infrastructure components or system architectures using the modular platform.

Type of partnership

Commercial agreement with technical assistance

Type and size of the partner

- **SME 50 - 249**
- **SME <=10**
- **Big company**
- **SME 11-49**

Dissemination

Technology keywords

- **02007009 - Materials Handling Technology (solids, fluids, gases)**

Market keywords

- **08003007 - Other industrial equipment and machinery**
- **06001004 - Equipment and instrumentation**
- **08002003 - Process control equipment and systems**

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Sector groups involved

Media

PDF documents



[4-Alcrys-SalesBrochure2025-EN.pdf](#)

1