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## INFRARED DETECTORS FOR GAS DETECTION

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EPIC Online Technology Meeting on Environmental Monitoring



# About us

## // Our strengths

- > **Unique technology** – 30 years of innovation and continuous improvement of the company's original concept
- > **Value for money** – the best quality to price ratio
- > **Custom-fit solutions** – flexibility to tailor and test solutions that respond to the most demanding customer requirements (e.g. NASA, military industry)
- > **R&D capabilities** – world class scientific R&D expertise with access to and affiliation with major academic research institutions (e.g. MIT, Princeton, Fraunhofer, Gesellschaft)
- > **Research projects** – coordinator and commercial partner in a number of national and EU research projects (e.g. Horizon 2020, POIR)
- > **The best team** – highly educated and experienced staff, friendly atmosphere promoting creativity and innovation, 155 employees (1 professor, 14 PhDs and >50 engineers)

## // Our products



Epitaxial wafers



Infrared detectors



Detection modules



**MIRPHAB**  
ENABLING CHEMICAL SENSING

**WATERSPY**

**AQUARIUS**



# Environmental protection

## // Air quality analysis



Emission control of greenhouse gases:

CO<sub>2</sub>, C<sub>2</sub>H<sub>6</sub>, CH<sub>4</sub>



Emission control of car exhaust fumes:

CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>

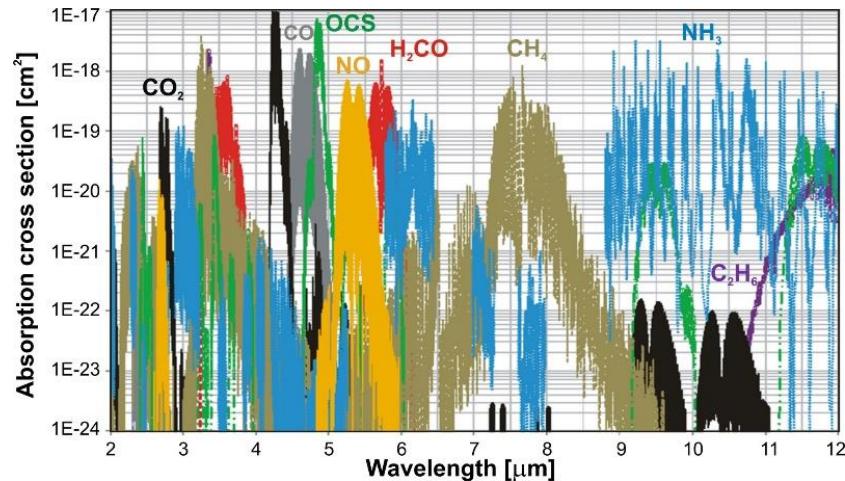
## // Water quality control

- > WaterSpy project

<https://waterspy.eu/>

- > AQUARIUS project

<https://aquarius-project.eu/>



Leak and leakage monitoring:

CH<sub>4</sub>



Combustion process control:

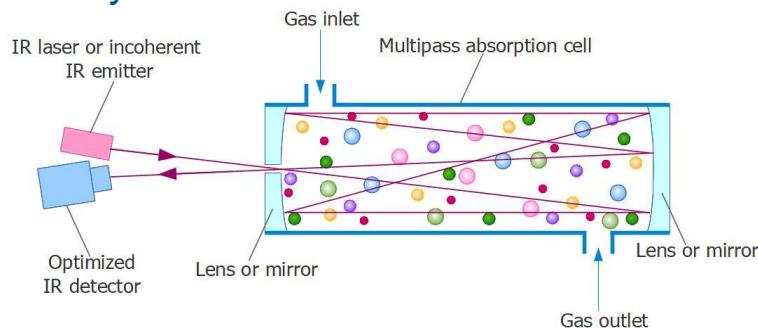
CO, CO<sub>2</sub>, CH<sub>4</sub>, NH<sub>3</sub>, NO<sub>x</sub>



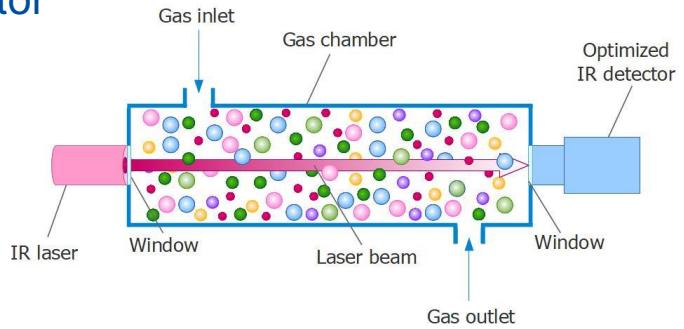


# Gas sensing

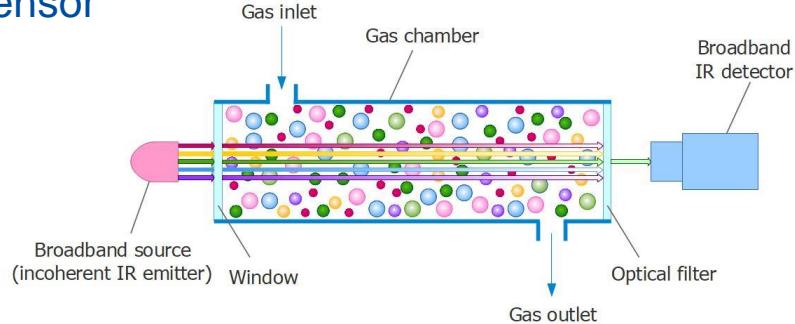
## // Gas analyzer



## // Gas detector



## // Gas sensor



## // IR detector – VIGO recommendation SYSTEM

- > TE cooled photodiodes and photoconductors
- PV-xTE / PVI-xTE, PC-xTE / PCI-xTE
- > Ultra high speed „all-in-one” modules
- UHSM series
- > Balanced / autabalanced IR detection module
- NIPM-I- 5
- > MWIR or LWIR linear arrays

- > TE cooled photodiodes
- PV-xTE / PVI-xTE
- > Universal modules
- UM series
- > Programmable, laboratory modules
- LabM series

- > Uncooled photodiodes
- PV / PVI
- > Affordable MWIR detection module
- AM series



# Antifringing technology

## // Decoherence of radiation

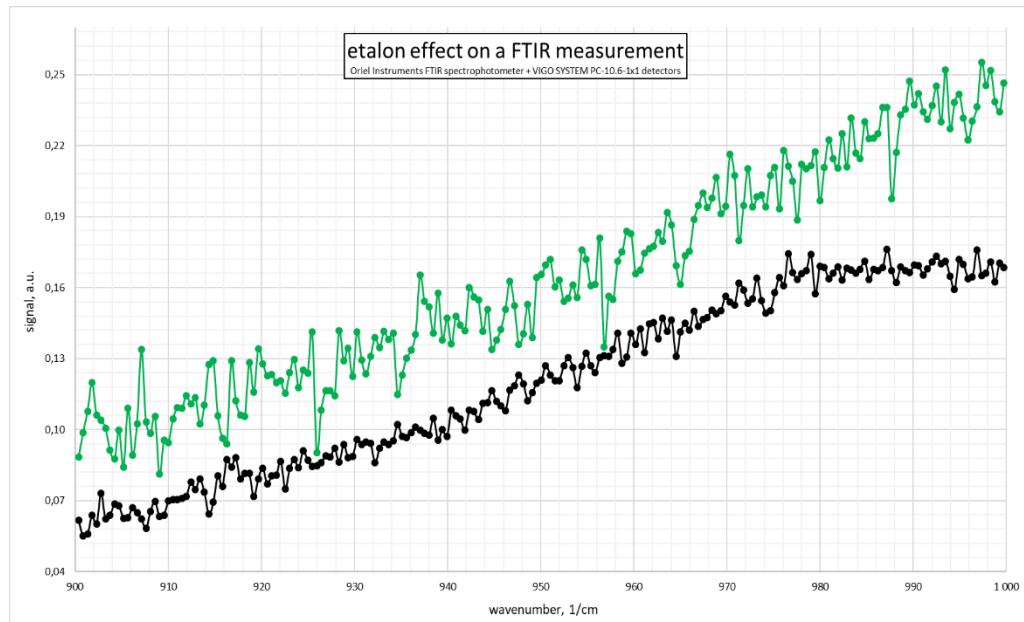
- > Wedged window
- > Wedged cap
- > Wedged structure

## // Reduction of the reflection coefficient of the surfaces

- > Anti-reflection coating at the window
- > Anti-reflection coating at the active structure (MWIR detectors)

## // Modification of the internal design

- > No metalization on the back
- > Roughened surface
- > Reducing the NA of the upcoming radiation





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**Ready to match your needs!**

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