

## Remote Sensing of Gases Using Infrared (IR) Sensors

### Summary/Characteristics

Researchers from Universidad Carlos III de Madrid, belonging to the LIR group (Infrared Sensors Laboratory), have developed multi- and hyperspectral IR analysis techniques for gas remote sensing. The technology enables the design of specific sensors to determine the presence of gases and their concentration.

Virtually all gases (CO<sub>2</sub>, CO, NO<sub>2</sub>, O<sub>3</sub>, hydrocarbons, NH<sub>3</sub>, etc.) involved in industrial, environmental, or military safety can be detected, making this technology of great interest to related sectors.

Companies or research centers interested in the use of application-specific sensors are sought.

### Innovative Aspects

- Capable of measuring the spectral distribution, thereby enabling the acquisition of quantitative data.
- IR sensor technology that allows multi- or hyperspectral detection, achieving improved results for quantitative analysis and for detecting gas composition.

### Competitive Advantages

- IR sensor technology with greater spectral discrimination than most current sensors.
- High competitive efficiency by providing a highly reliable remote gas detection system for companies in sectors such as petrochemical, energy, and perimeter security.
- Customization applied to the design and specification of each sensor to best meet the client's needs.

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#### Technology readiness level:

Technology developed and ready for its demonstration. TRL 7.

#### Intellectual and Industrial Property Status:

Industrial secret– *know how*

#### Type of collaboration sought:

Technical Cooperation Agreements, Joint Ventures, or Commercial Agreements with technical assistance are sought with companies or R&D institutions interested in the application of identification technologies in real-world scenarios.