

Technology Offer

CSIC/IG/118

High-accuracy industrial Radon detection system



Advanced industrial radon detection system based on an innovative cylindrical chamber design, featuring axial sensor distribution and precision focusing bars to ensure superior measurement accuracy, reliability and long-term operational stability in demanding environments.

Intellectual Property

European patent filled

Stage of development

TRL6

Intended Collaboration

Licensing and/or co-development

Contact

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Market need

Prolonged exposure to radon in confined spaces such as basements and mines poses serious health risks, including respiratory problems and lung cancer. Older and underground buildings often lack adequate ventilation, making early detection of radon essential to preserve healthy environments. Existing solutions are either very inexpensive ($\approx$ €200) but unreliable, or accurate but very costly ($\approx$ €10,000) and slow in measurement..



Proposed solution

Cost-effective, high-precision, and versatile radon detection solution, designed to meet the growing market demand for monitoring in older buildings, confined spaces, and underground environments. Competitively priced compared to other reliable detection alternatives ($\approx$ €1,500), it also offers advanced features such as isotope identification and network connectivity. It consists of a cylindrical chamber with axially distributed sensors and focusing rods, providing fast, reliable, and highly accurate measurements, while offering a more affordable and precise option than existing systems.

Competitive advantages

- **Very high sensitivity:** Detects even low levels of radon quickly (minutes) and accurately, ensuring reliable monitoring in all environments at competitive cost.
- **^{222}Rn / ^{220}Rn discrimination:** Spectroscopic measurement, that precisely distinguishes between different radon isotopes, and other background radiation, for more accurate risk assessment
- **IoT connectivity:** Enables real-time data transmission and remote monitoring, making management and analysis effortless.