

Next Generation Hydrogen Leak Sensor

Fibre optic sensors for cost effective hydrogen measurements



Positive Impact

The production of green hydrogen will increase significantly in the coming decades towards net zero. Improving safety and performance is key and in the digitally connected world, the NEXT Generation hydrogen measurement sensors are crucial.



Initial Validation

Initial proof-of-concept experiments have been performed and based on the applications the technology could be tuned. In addition, patents have been filed.



Solution

Advanced coated fibre Bragg-based sensors could be integrated into various hydrogen value chains (e.g. electrolysers, hydrogen pipelines, hydrogen fuelling stations) to accurately measure low hydrogen concentrations with rapid response times. This enables smooth data acquisition and data management of the operating systems within smart grids and dynamic energy mix demands.



Problem

Gas leaks possess a significant threat to safety and health. It can lead to explosions, fires, environmental contaminations, amongst others.

To mitigate these risks, the field of sensors is continuously emerging, incorporating new sensing capabilities. This allows individuals to smartly monitor and take prompt actions.



Technology

- Robust integrated multiparameter monitoring system
- Precise measurements of the gas concentration
- Multiple non-electrical sensing points on a single fibre
- Extension to multiparameter sensor platform inside electrolysers and fuel cells



Call to Action !!!

We are looking for individuals with a passion for optics, sensors and business development. An educational background in engineering, physics/chemistry is desired for this role!

If you are interested, please reach out to entrepreneur@hightechxl.com



Potential Markets

There are several potential markets where hydrogen leak detection sensors could be used. A few are listed below:

- Electrolysers
- Pipelines
- Hydrogen fuel stations
- Hydrogen storage
- Possibility to create entrance point for integrated FOS system