

Technology Offer

CSIC/AF/010

## Electrochemical sensor for detecting water pollutants



**New disposable electrochemical sensor for the on-site detection of water pollutants. It is a sample-to-result device that does not require manual sample pre-treatment.**

### Intellectual Property

PCT patent application filed

### Stage of development

Technology validated in real environment

### Intended Collaboration

Licensing and/or co-development

### Contact

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### Market need

Water pollution is an increasing global concern that damages human health, aquatic ecosystems, and economic growth.

Frequent monitoring of water is currently unfeasible due to the complexity of the processes and equipment needed. If we consider Chemical Oxygen Demand (COD), state-of-the-art analytical methods require the use of hazardous materials, sample pre-processing and must be done by skilled technicians. New approaches using electrochemical methods determine water pollutants in a faster and more user-friendly manner. However, different manual steps are still required, making in-field testing less convenient and sensor fabrication more difficult to be scaled up.



### Proposed solution

We have developed a new screen-printed electrochemical sensor using tailor-made functional materials. The sensor is portable, just requires sample addition and is user-friendly. Professionals without specific training can detect water pollutants on-site with no need for manual sample pre-treatment. The resulting sensor approaches have been applied to the detection of different contaminants, such as heavy metals, COD or halogenated compounds.

### Competitive advantages

- User friendly screen-printed electrochemical sensors that do not require any manual sample pre-conditioning for sample-to-result analysis.
- On-site rapid detection.
- Production of screen printed electrodes easily scaled up.

<https://www.youtube.com/watch?v=HDdfSmkmdo8>