

PORTABLE DETECTION SYSTEM FOR *AEROMONAS SALMONICIDA* IN SEAWATER AQUACULTURE SYSTEMS

The current methods available for the detection of *Aeromonas salmonicida* (*A. salmonicida*) include ELISA and PCR/qPCR, which are highly sensitive and reliable. These methods are time-consuming, not portable and require complex sample pre-processing.

At INL, we have developed a Portable Quantification System for *A. salmonicida*, which is composed of an integrated electrochemical detection system, based on lab-on-a-chip technology, integrating microfabricated electrodes and microfluidics with a read-out portable platform, with an impedance analyser integrated circuit, for the acquisition of electrochemical signals.

It allows the fast screening of the presence of *A. salmonicida* in water samples in real-time and could be adapted for automated online detection. Moreover, the use of electrochemical sensors as a transduction system offer the possibility of size reduction, due to the use of microelectronics and microfabrication, which leads to the decrease in the cost of the technology. The portable detection system for *A. salmonicida* in seawater aquaculture systems can be used by inexperienced operators.

+ Competitive advantages

High sensitivity
Lightweight, ergonomic & portable
Low cost

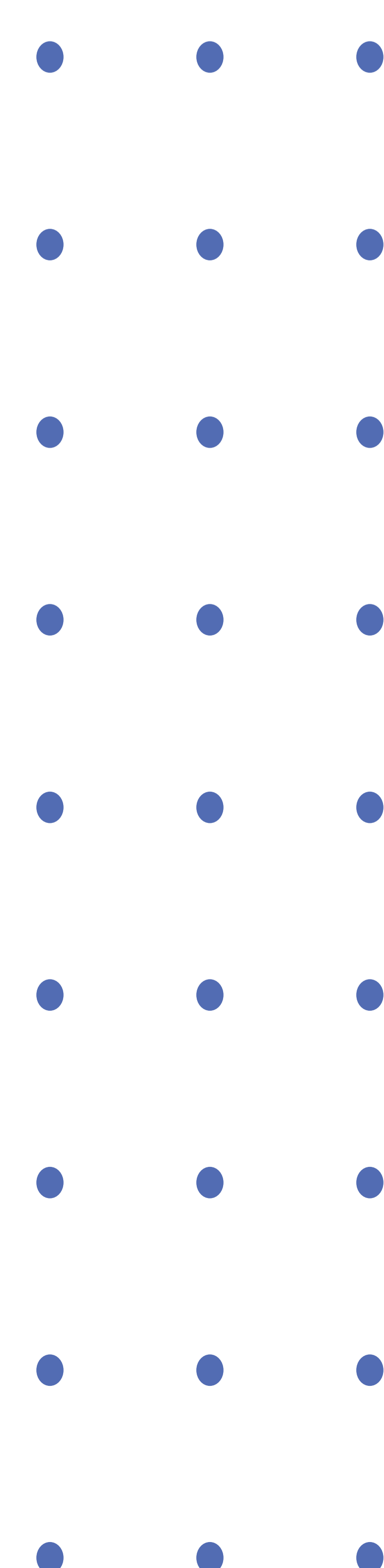
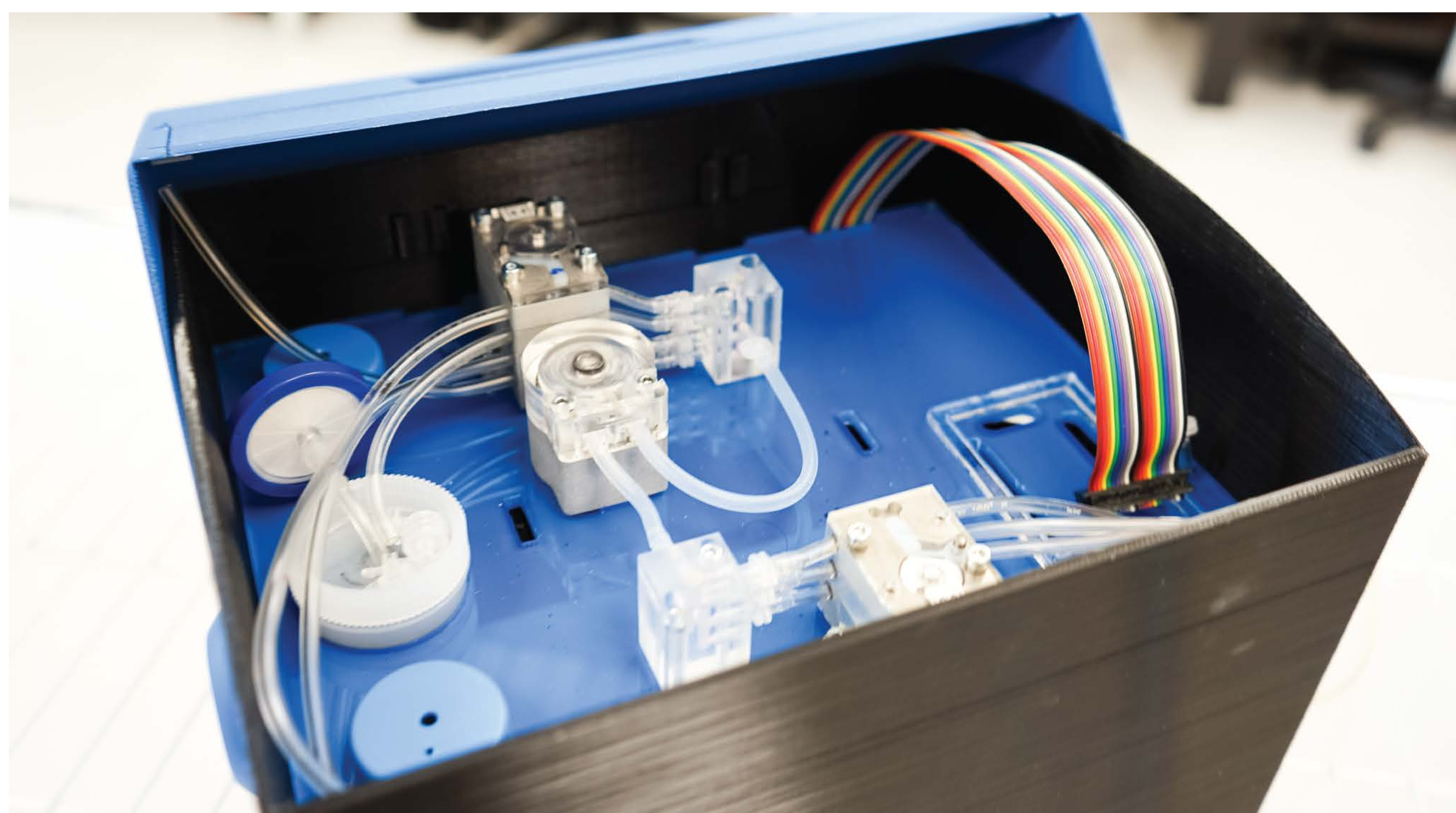
+ Features

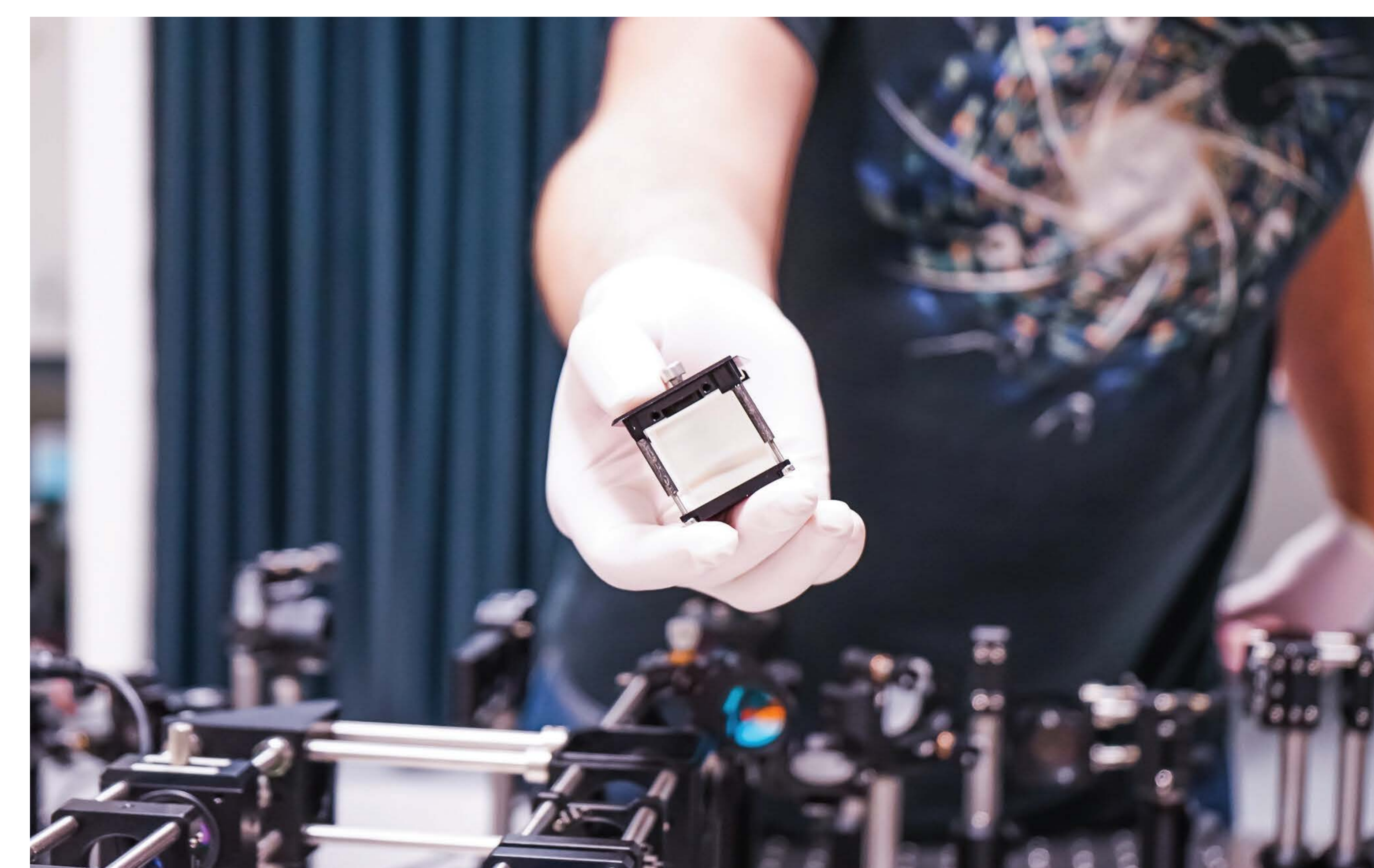
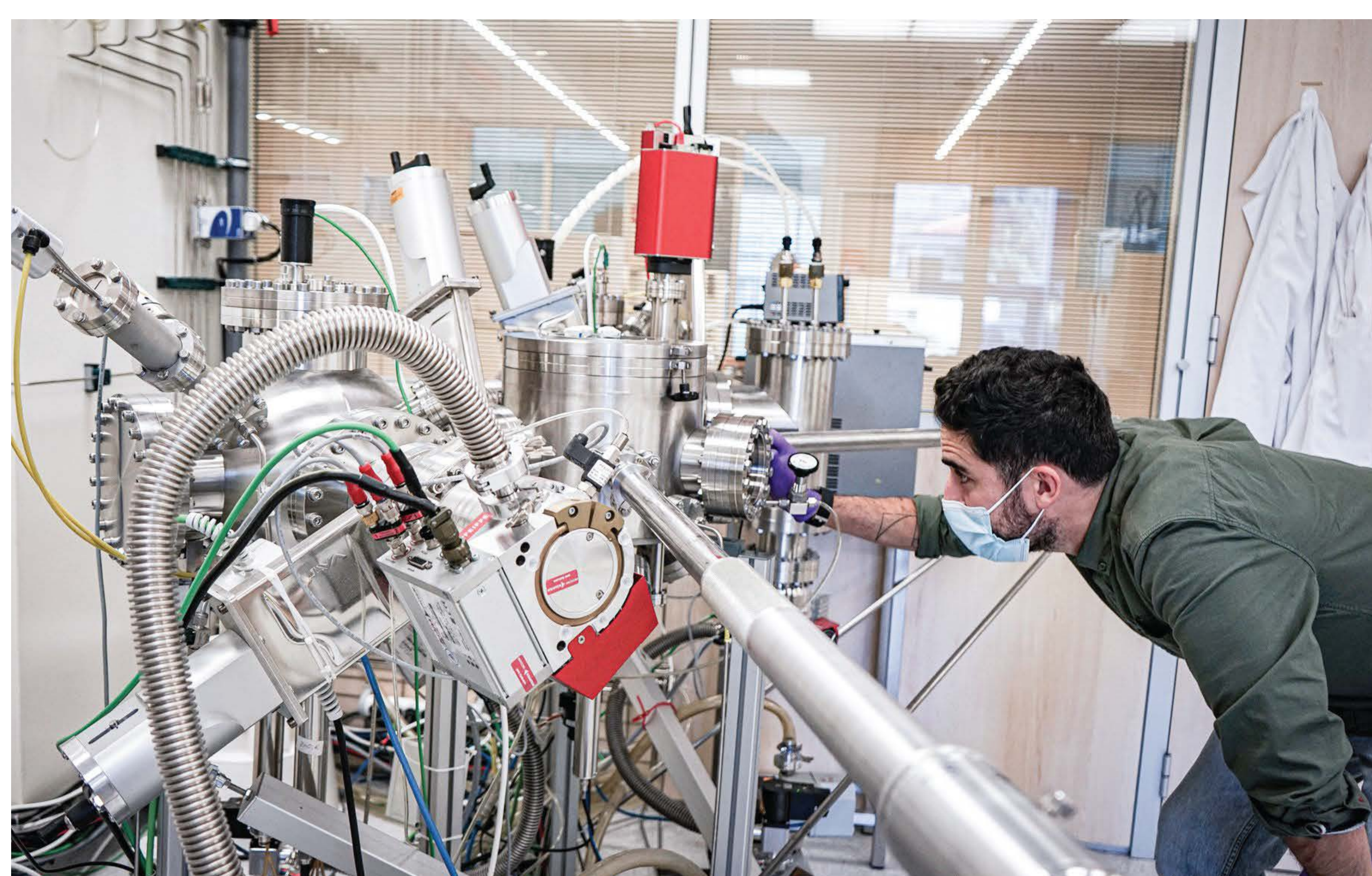
Portable
Autonomous system
Fully integrated
Accurate detection
Anti-contamination valve system
Low power
Powered & operated by a computer USB port
Linear working (between 1 & 10^7 CFU mL⁻¹)
Limit of detection (LOD) of 1 CFU mL⁻¹

+ Suggested application

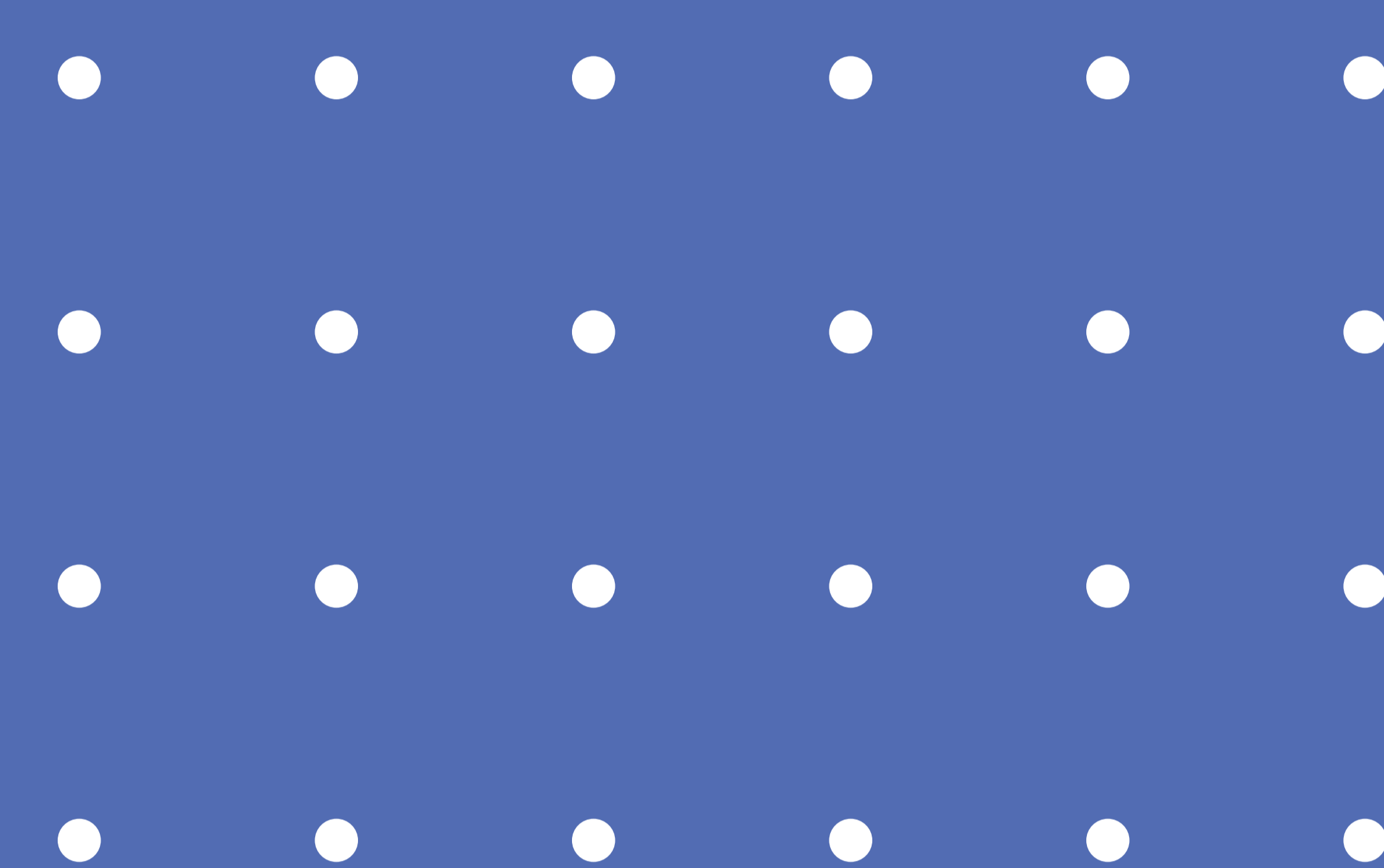
Aquaculture

TRL
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