



# ANB Sensors

**Dr Nathan Lawrence**

Nathan Lawrence is a founder of ANB Sensors, which was set up with prize money from the Wendy Schmitt Ocean Health XPrize competition. The company received a grant through the European Union (EU) Horizon 2020 framework, which enabled them to carry out a Phase 1 feasibility study. They later applied for further funding, which they will use to fund a two-year Phase 2 project.

Company: [ANB Sensors](#)

Founder: [Dr Nathan Lawrence](#)

Funding: [Horizon 2020 SME Instrument](#)

ANB Sensors design and implement technology for measuring the pH of water – in oceans and in the water we drink. Being able to measure the pH, or degree of acidity or alkalinity, of water accurately is very important environmentally. The existing sensors used in industry for measuring water pH are made from glass electrodes, and their major drawback is that they need to be recalibrated on a regular basis. ANB Sensors have developed a technology that can be retrospectively placed into existing sensors, making them essentially calibration free. This will significantly reduce the running costs of these sensors.

“Everyone agrees today that pH sensors drift”, says founder Nathan Lawrence. “We are saying that we can do a live update of what the changes are and recalibrate for those changes. **Essentially most sensors today are dumb, and we are making them smarter.**”

**“We predict that, with our technology, you will be able to buy three of our sensors for every one you could previously afford – just because we are cutting down the running costs. The impact will be huge.** One company we spoke with say they want to put a sensor every kilometre or so across the entire network, which they cannot do at the moment because each sensor needs to be recalibrated; they don’t have the time and money to be able to do that currently.”

ANB Sensors received a grant through Horizon 2020 that allowed them to carry out Phase 1 activities – laying the groundwork for taking their technologies forward. “This included understanding the market and putting a business strategy and product development strategy in place”, says Nathan. **“The Phase 1 funding allowed us to go to various conferences and exhibitions to meet and understand the needs of end users and manufacturers.”**

In fact it was these conversations that led the company to branch out from monitoring pH in oceans, to breaking into the water industry and developing their sensor recalibration technology – crucial in making the business commercially viable. “At the conferences we were able to attend through the grant we spoke with people working in pH sensing and also glass electrode manufacturing, to try and understand how we can put our technology into their systems.”

Support from the grant is helping the company reach an international market. “We have talked to water companies in the UK but also some in Europe, including Belgium. We’ve spoken to water sensor manufacturers in the UK, Germany, and Switzerland. **This technology is very applicable to both the UK market and internationally.**”

Nathan says the EU funding has been extremely valuable. **“Without the Phase 1 funding, we could never have developed the business case so well. We did have some InnovateUK funding during the same period but the Phase 1 funding really allowed us to pull the EU connection together.** We were able to visit a pH sensor manufacturer in Germany, which allowed us to pull together even bigger numbers and put a number of other aspects of the business strategy in place.”

“The Phase 2 funding has enabled us to attract an investor which in turn has allowed us to recruit new staff – so we’re now providing employment. We have just taken on our third Research Scientist through the grant and we have one more joining in early December. **We have filed seven patents to date, all in the UK, and we’re aiming to file 10 more in the next two years.** All these developments will enable us to really get our technology out there.”

ANB’s sensor technology may prove useful in solvents used in various industrial systems. We have also been funded by the European Association of National Metrology Institutes (EURAMET), to look at pH sensors for non-traditional solvents (such as ethanol and methanol systems).

Dr Nathan Lawrence (top left) and the team at ANB Sensors

