

Innovative Research Solutions with Industry

Environment

CLIENT:

T.E. Laboratories

AREA:

Environmental Water Monitoring



Development of a range of electrochemically based sensors for detection of water pollutants



Global Trends within the marketplace indicate significant and lucrative commercial opportunities in the area of environmental and drinking water analytical systems that can report real time analysis. Indications of issues in the quality of drinking water or wastewater is a valuable tool which allows problems to be resolved in an efficient and timely manner.

While a number of analytical devices have some capability in this area there are serious limitations regarding the in-situ calibration. The technology proposed by DKIT will overcome this issue by designing and validating a range of electrochemically based sensor systems for the detection of common pollutants in waste and drinking water.

T.E. Laboratories is directly collaborating with the Electrochemistry Research Group at DKIT. This group is led by Dr. Tim McCormac and is currently comprised of 4 Ph.D. and 2 M.Sc. researchers. The group has attracted over €3m in funding since 1996 and has published over 45 scientific papers in internationally peer reviewed chemistry journals.

The Group has been actively applying the tools of synthetic chemistry, electrochemistry and material science to design a range of multi-functional materials which possess applications in strategically important technological fields such as nanotechnology and environmental sensor development. It is this expertise in surface science and sensor development that is being leveraged by the industrial partner.



Mark Bowkett, Managing Director, T.E. Laboratories

Tellab offered commercial market research and the ability to validate the new technology against existing ISO17025 accredited test methodology. ➔

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•→ The support offered by the Tellab includes:

- In kind support by validation studies.
- Opportunities to integrate new technologies into current sensor platforms which will significantly speed up the commercialisation process.
- Access to sample sites with historical data.

Through the on-going research collaboration it is envisaged that a range of electrochemically based sensors will be developed which will be targeted at the detection of common water pollutants. Such systems should offer:

- High specificity whilst achieving relevant limits of detection.
- The ability to incorporate the sensor into existing lab on the chip devices.
- The ability to fabricate multi-electrode array systems for multi-analyte detection.
- The ability for wireless communication.
- Relatively low cost and robust.

There are great opportunities to place the new technology into the portfolio of products and sensors that Tellab are actively developing at the moment. The commercial potential in the sensor market is well documented and recognized by many industries, including the ICT sector which is making plans to deal with large amounts of data that will be produced when this technology is deployed. Major improvement in environmental protection will be achievable due to the real time detection of incidents. ■

TESTIMONIAL

Mark Bowkett

*Managing Director
T.E. Laboratories*

“DKIT have technical solutions that fit into the company’s strategic plans for sensor development. Collaboration on this project has provided significant leverage of the company’s money allocated to R&D and gives access to renowned expertise that would otherwise not be available.”

Dr. Tim McCormac

HEAD OF RESEARCH

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