



### Abstract

**The ecological status of water can be accurately established using measurements of the water clarity, the concentration of green algae and the concentration of blue algae. A Dutch SME has developed a method with which these parameters can be measured at a glance. The company seeks a commercial agreement with technical assistance with market parties who can act as "launching customers".**

### Description

Changes in climate and human intervention can lead to severe deterioration in water quality. An overabundance of nutrients (eutrophication) can cause long-term harmful or even toxic algal bloom in water bodies such as lakes, ponds and rivers. Many water bodies are sampled only irregularly and many (swimming) waters not at all. Water samples are sent to a lab and it can be weeks or months before the results are available.

A good, quick picture of the waters ecological status is necessary for the management of inland water; it can prevent incidences of human and animal poisoning.

The ecological status of water can be accurately established using measurements of the water clarity, the concentration of green algae (using the proxy Chlorophyll-a) and the concentration of blue algae (using the proxy Phycocyanine, the blue algae pigment).

A Dutch company has developed a method with which these parameters can be measured at a glance. The method entails measurement of the water colour with a spectrometer. The company has captured the method in an instrument: the WISP-3. Not only can this instrument be used for direct observation, it is also particularly suitable when a quick impression is needed of the spread of an algae bloom, say a blue algae bloom. This is due to its

portability and ease of use. With lab sampling as costly as it is, this is something that is currently prohibitively expensive. The primary parameters (clarity, Chlorophyll-a and Phycocyanine) can be translated using simple algorithms into numbers of cells and the concentration of microcystine, a method that is a seamless fit with current measuring practices.

The technology has potential for those market segments that would benefit from rapid, cheap and reliable information on the ecological status of surface water. A good example of such a segment would be the countless summer swimming locations where there's no monitoring of water quality at all. The technology would be very useful here to prevent swimmer's itch, diarrhoea and other symptoms of poisoning. In addition, the method is valuable for anyone who regularly carries out water quality sampling involving the parameters mentioned above since the WISP-3 system will bring considerable cost savings.

### Innovations and advantages of the offer

Thanks to the WISP-3, a non-specialist can take on-site samples quickly and easily with the same accuracy as comparable lab tests. As the wireless measuring instrument can send its results directly to an internet database, those in charge can see exactly what the sampler's sees.

Moreover, an intelligent measuring system can be built whereby the measurement is placed immediately in the context of earlier measurements. If desired, the WISP-3 can be placed at a fixed location so that water quality can be measured over time.

### Current and Potential Domain of Application

- The management of surface water and recreation water including swimming water
- Applications that provide fisheries and recreation with water quality information
- The monitoring of drinking water collection sites as well as locations where process water and cooling water are discharged
- The monitoring of ecological recovery measures
- The supply of reporting information for the Water Framework Directive



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# Enterprise Europe Network Partnership Tools

INDUSTRIAL MANUFACTURING, MATERIAL AND TRANSPORT TECHNOLOGIES, Technology Offer

Surface water technology: checking water quality at a glance

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