



## Detecting and Determining the Concentration of a Target Bioagent

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**WARF: P06457US**

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**The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a small, portable sensor that can be used to detect the presence and concentration of biological agents in liquids, such as water or milk.**

### Overview

A UW-Madison researcher previously developed an inexpensive, real-time wireless microsensor for detecting biological agents in water supply networks and other aqueous environments, such as the milk supply. In that sensor, multiple membranes were needed to estimate the concentration of a target agent because each membrane could only function as an on/off switch.

### The Invention

UW-Madison researchers have now developed an improved sensor that requires only one membrane to determine target concentration. The membrane is fabricated from a polymeric material that dissolves when exposed to a particular biological agent. To detect the agent, the membrane is contacted with a sample of fluid. If the target bioagent is present in the fluid, the membrane dissolves at a speed dependent on the concentration of the agent. A beam of light with a specific wavelength is passed through the membrane to determine the degree of dissolution, and a detector generates an output voltage in response to the intensity of light transmitted. The change in voltage can be monitored to determine the concentration of the target agent.

### Applications

- Detecting the presence and concentration of biological agents in liquids, such as water or milk

### Key Benefits

- Sensor is small, portable and capable of delivering an accurate result in less than five minutes.
- Highly sensitive and selective
- Inexpensive to manufacture
- Provides continuous monitoring of an environment

### Additional Information

#### For More Information About the Inventors

- [Hongrui Jiang](#)

#### Related Technologies

- [See WARF reference number P04357US for the previously developed microsensor.](#)

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#### Tech Fields

- [Analytical Instrumentation, Methods & Materials : Biodefense](#)



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