**The CUNY Center for Advanced Technology In Photonics Applications (CUNY CAT)**
*Designated by NYSTAR, the New York State Foundation for Science, Technology and Innovation*

# Photonic Detection System for Biohazards and Bio Defense

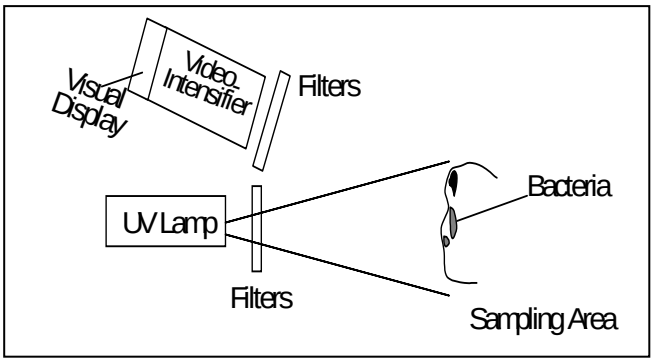
A new and patented* photonic technology has been developed that enables detection of key fluorescent biological molecules, including various bacteria and other micro-organisms. There are indications that the technique might also be useful in the detection of certain viruses. The patent includes the conceptual design of a handheld device for real-time detection of these materials non laboratory environments

**Potential commercial uses:**

- Bioterrorism agent detection
- Biocontamination measurements in ships
- Safety monitoring of food production
- Water supply safety monitoring
- Hospitals and other medical areas
- Post Office for Screening Mail and Packages

**Benefits**

- Method requires no sample preparation or the use of contrast enhancement agents
- Proposed instrument is portable
- Real time detection




*Simplified Drawing of Photonics-based Detection Device*

**The Technology:**

The method relies on the illumination of the area to be examined with light of a wavelength selected to excite the biomaterial. The resultant fluorescent light emitted at key wavelengths, when measured and analyzed, is an indicator of the increased presence and type of biomaterials in the area under investigation. Many exciting applications can be envisioned using this new photonic technology. Areas can be monitored over time to measure changes in the levels of biological molecules or microorganisms in diverse locations such as in the home, hospitals, doctor's offices, restaurants, food markets, semiconductor processing facilities, the battlefield or elsewhere. With the combination of video mapping, a pseudo-color image of a region can be constructed which will show the presence of biomaterials. Prescreening of a body or object for bacteria on its exterior will be important for the medical, military and industrial fields. Device applications range from the medical, contamination-monitoring and food processing industry to remote sample analysis in hostile environments.

*US Patent #5,474,910

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