



## Enhancement of Sensitivity of Fountain Flow Cytometry by Background Attenuation

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**Inventor:**

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**Patent Status:**

Patent Pending

### Description of Technology

Fountain Flow Cytometry (FFC) is a method of detecting particles in transparent and translucent fluids such as water, blood, and beverages. It can detect particles from micrometer-size bacteria to multi-millimeter-sized multicellular organisms. Another benefit of FFC is that it can detect particles that are unwashed. FFC works by first fluorescently staining a sample and then passing the sample by a light source to increase the fluorescence of the particles. This is done to aid detection. The sample then flows toward a digital camera which captures images. These pictures are then analyzed by an automated target particle recognition computer program, called Biocount, which counts the particles. The biggest drawback to this technology is background noise, which can disrupt an accurate reading.

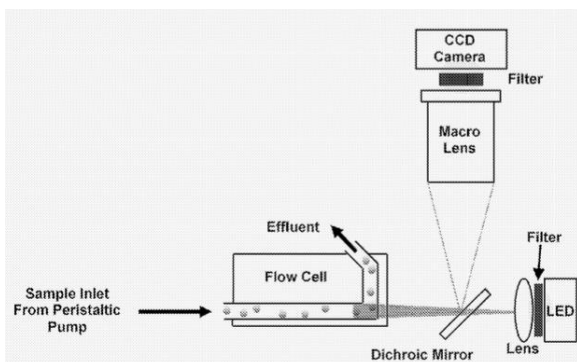
Researchers at the University of Wyoming have created innovative ways to reduce the background noise that is seen during fountain flow cytometry. These ways are to reduce the flow volume being illuminated and viewed by the camera, add a background suppressant to the sample, minimize Raman scattering from the liquid by using an emission filter, and to minimize the concentration of free dye in the sample. These methods have been found to be effective in reducing background to an acceptable level without reducing the signal fluorescence from the targets.

### Applications

Fountain Flow Cytometry (FFC) can be used to detect particles in transparent and translucent fluids. The new technology from the University of Wyoming can be added on to FFC in order to obtain cleaner results.

### Features & Benefits

- Reduces background noise of FFC
- Does not reduce the signal fluorescence from the target particles



**Figure:** A schematic of a Fountain Flow Cytometer utilized for single-color measurements, showing: a Flow cell with sample inlet and outlet, Dichroic mirror, LED-focusing lens, and LED, and CCD camera with a macro lens.

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