

A Wavelength Dispersive Microscope Spectrofluorometer for Measuring Multiple Particles Simultaneously

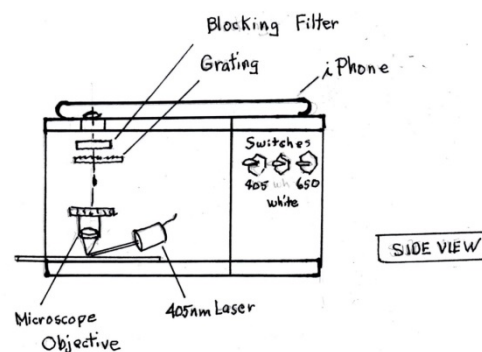
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Summary: A microscope to simultaneously detect fluorescent spectra of multiple particles

Description: The Wavelength Dispersive Microscope Spectrofluorometer combines telescopic wavelength dispersion techniques with fluorescence microscopy to enable detection of the full fluorescent spectra of many individual particles at once. Traditional spectroscopy with a microscope allows for singular spectral detection of a particle or group of particles. This invention combines wavelength dispersion and microscope spectroscopy, enabling the user to rapidly, and cheaply, detect and characterize individual bioparticles in a sample. This technology, designed both as a research instrument and smartphone instrument, can be used to detect and distinguish between biogenic and nonbiogenic particles with unparalleled efficiency.

Advantages of this Invention:

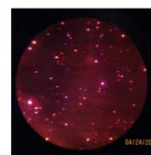
- Rapid detection and recording of spectra from many particles
- Drastically reduces cost of real-time bioparticle detection



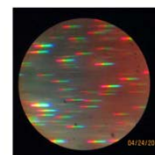
Potential Areas of Application:

- Medical: detection of airborne pathogens and allergens
- Environmental: detection of biological ice nucleators

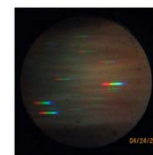
Example outdoor sample



(1) Dark-field microscope image



(2) λ -dependence of elastic scatter



(3) Fluorescence emission spectra

Stage of Development: Prototypes completed; PCT Application filed June 2015

DU Log Number: #230

Intellectual Property Status: Application Pending, Application #PCT/US2015/010418

Opportunity: We are seeking an investor or strategic partner to license this invention.

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