



# FlowCAM®-XPL

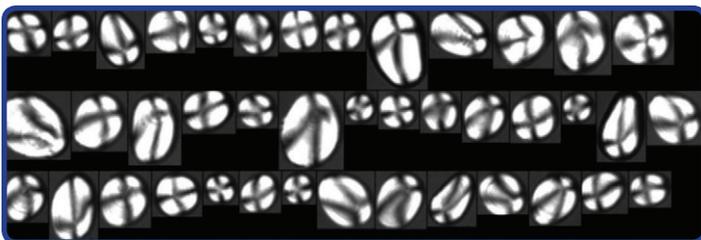
## A Digital Imaging Particle Analyzer with Cross-Polarized Illumination

The FlowCAM®-XPL (Cross Polarized, patent pending) is an imaging particle analyzer using proven FlowCAM technology with the addition of cross-polarized illumination for isolation and quantification of particles which are anisotropic, and thereby can exhibit birefringence under cross polarization. Cross-polarization has been a very common technique used in microscopy, but the FlowCAM-XPL is the first *flow-through* microscope system to allow for examination of birefringent particles.

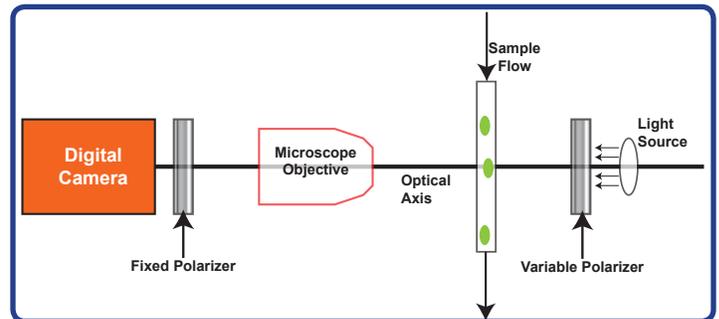
### FlowCAM-XPL Applications:

- ◇ Foods (starches, gums, etc.)
- ◇ Early Detection of Invasive Mussels
- ◇ Plastics (polymers, polystyrene, etc.)
- ◇ Liquid Crystal Display Particles
- ◇ Crystalline Particles (Calcite, Quartz, etc.)
- ◇ Fibers (cotton, cellulose, etc.)
- ◇ Silicon Carbide (abrasives, electronics)

Having the option of birefringent imaging expands the capabilities of the FlowCAM to address new applications. For example, starch particles exhibit birefringence under cross-polarized illumination, therefore images such as those shown below can be clearly used to distinguish, and therefore quantify, starch particles versus other particles that might be present (and do not exhibit birefringence) in a heterogeneous sample. Another example of an application where the FlowCAM-XPL is being used heavily is in the early detection of zebra mussel larvae (veligers) in water bodies where these mussels are dangerous invasive species.

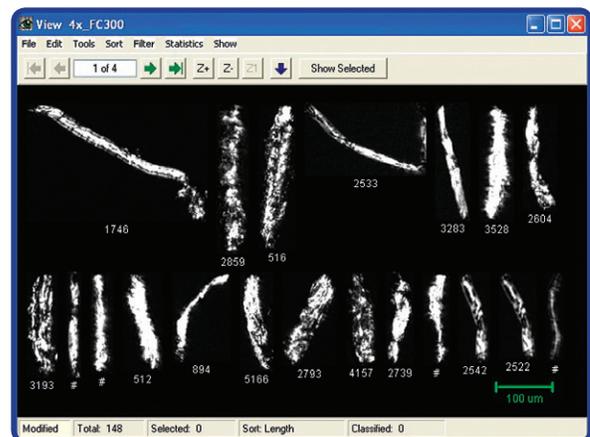


*FlowCAM-XPL Images of birefringent starch particles*



*Schematic of FlowCAM-XPL Architecture*

In some applications, such as the production of cellulose acetate for various products (film base, adhesives, synthetic fibers, etc.), birefringence imaging is often the only way of actually capturing some of the fiber particles for measurement. This is due to the fact that the fiber particles may have an index of refraction identical to the liquid they are suspended in, and are also transparent. Therefore, the particles can not be seen by the system under normal illumination conditions. However, under cross-polarization, the fibers show up distinctly as light areas on a dark background, as can be seen in the following images.



*FlowCAM-XPL Images of birefringent cellulose fibers*

FlowCAM can be ordered with the cross-polarized illumination as an option, and most existing systems can be upgraded at the factory.

*Contact us today to discuss your requirements!*