Digital camera floc sizing flow through cell

Goal

We need a tool that will allow us to quickly measure floc size and floc size distribution in a nondestructive manner in a flow through cell. We are not the first to need this tool and thus a literature search will provide at least [one example of a system used to measure floc size](#).

The floc size tool will be used to learn more about the relationship between floc size and energy dissipation rate. Ideally it will be possible to use the digital floc camera immediately downstream from the floc break-up points in the laminar flow tube flocculator. It will also be applied at the effluent of both the laminar and turbulent tube flocculators.

Next steps

Use the best system that you can find in the literature as a guide for your design of the system. Locate or design components including camera, lenses, light source, strobe system, flow through sample cell. Determine if a strobe light is necessary to stop the motion of the flocs. If a strobe is needed, then acquire hardware and develop LabVIEW software to synchronize the camera and strobe.

The software application must be developed using high level programming in LabVIEW. The application should be a stand alone application that is user friendly based on the needs of the student teams that will be using the floc sizing system. The system should be designed to automatically take samples every x seconds and to produce a floc size distribution that is recorded in a data file.