CytoBuoy BV

Imaging Flow Cytometry Solutions

Introduction

- Based in Woerden, The Netherlands
- Over 25 years’ experience in imaging flowcytometry solutions
- SME with 14 employees
- Mechanical engineering, Research and Development, Optics, Fluidics, Electronics, Software, Sales, Finance and Management
- Over 150 instruments deployed globally

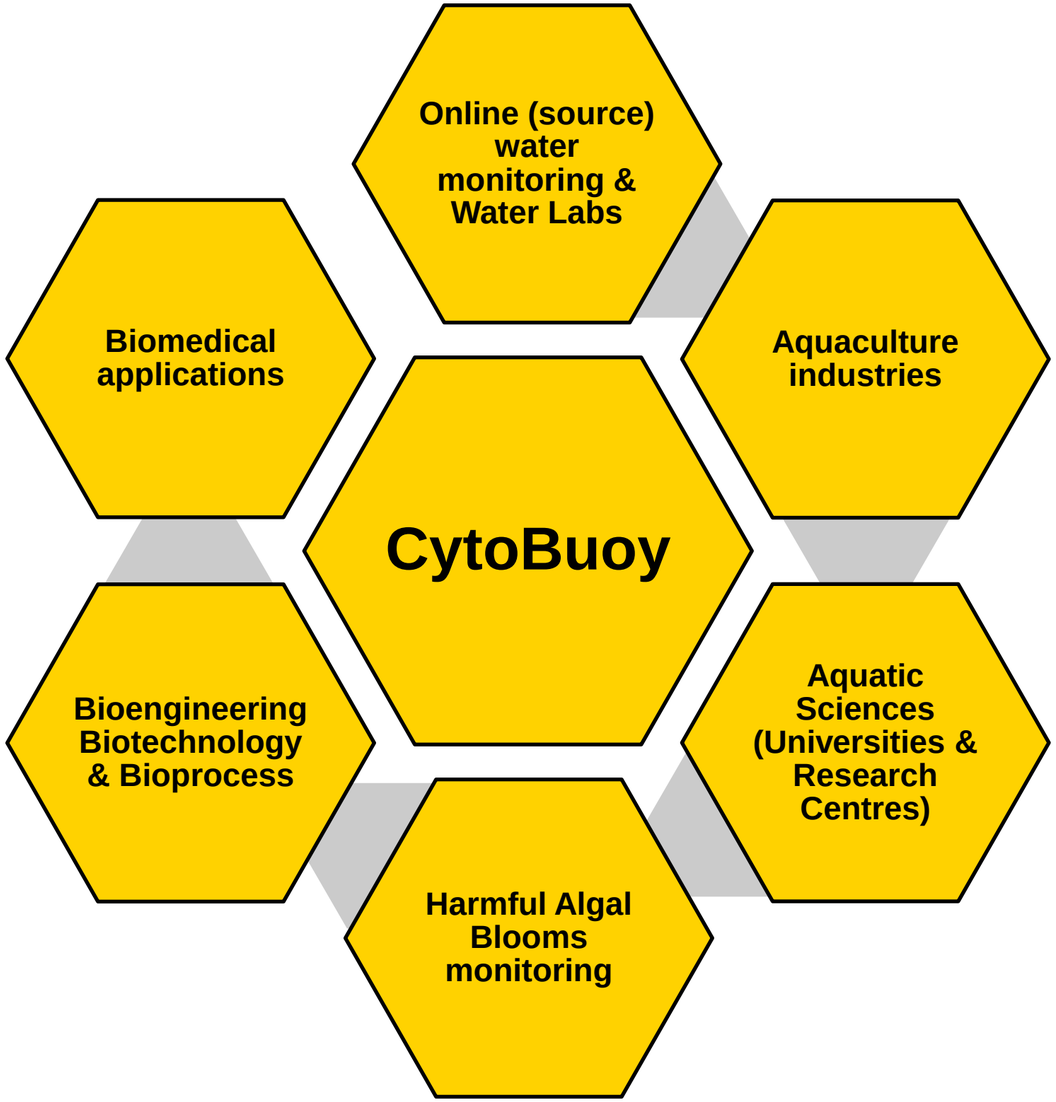
Mission, Vision and Values

Mission: We support researchers and scientists understand ecological processes to maintain a sustainable environment supporting the wellbeing of current and future generations.

Vision: To be the market leader providing specialist equipment within the rapid laboratory and remote outdoor analysis of microbes for the aquatic research, water monitoring and bioprocess monitoring industries.

Values: Collaboration, Innovation and Quality

What are our markets?



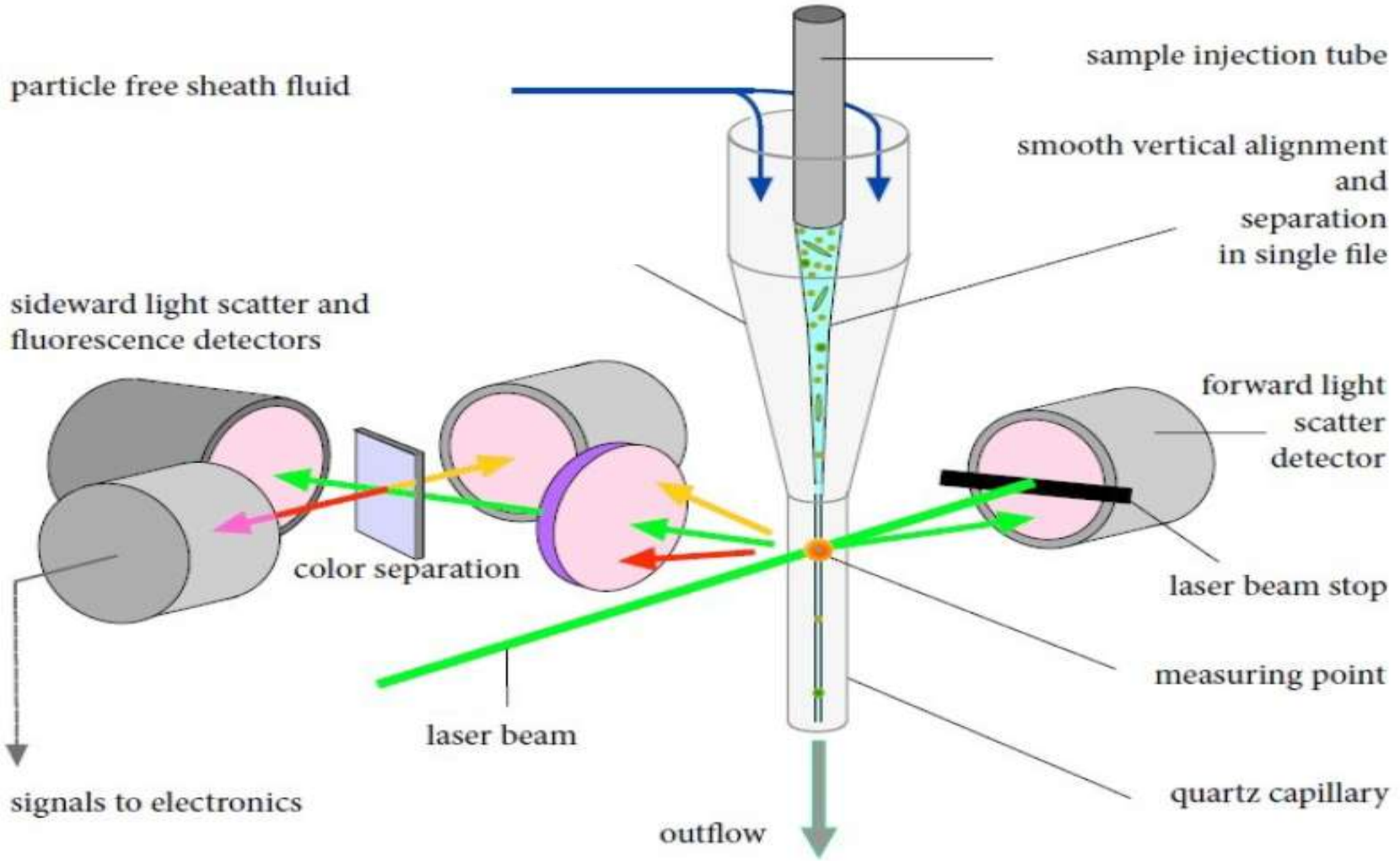
Main Products

CytoSense XR

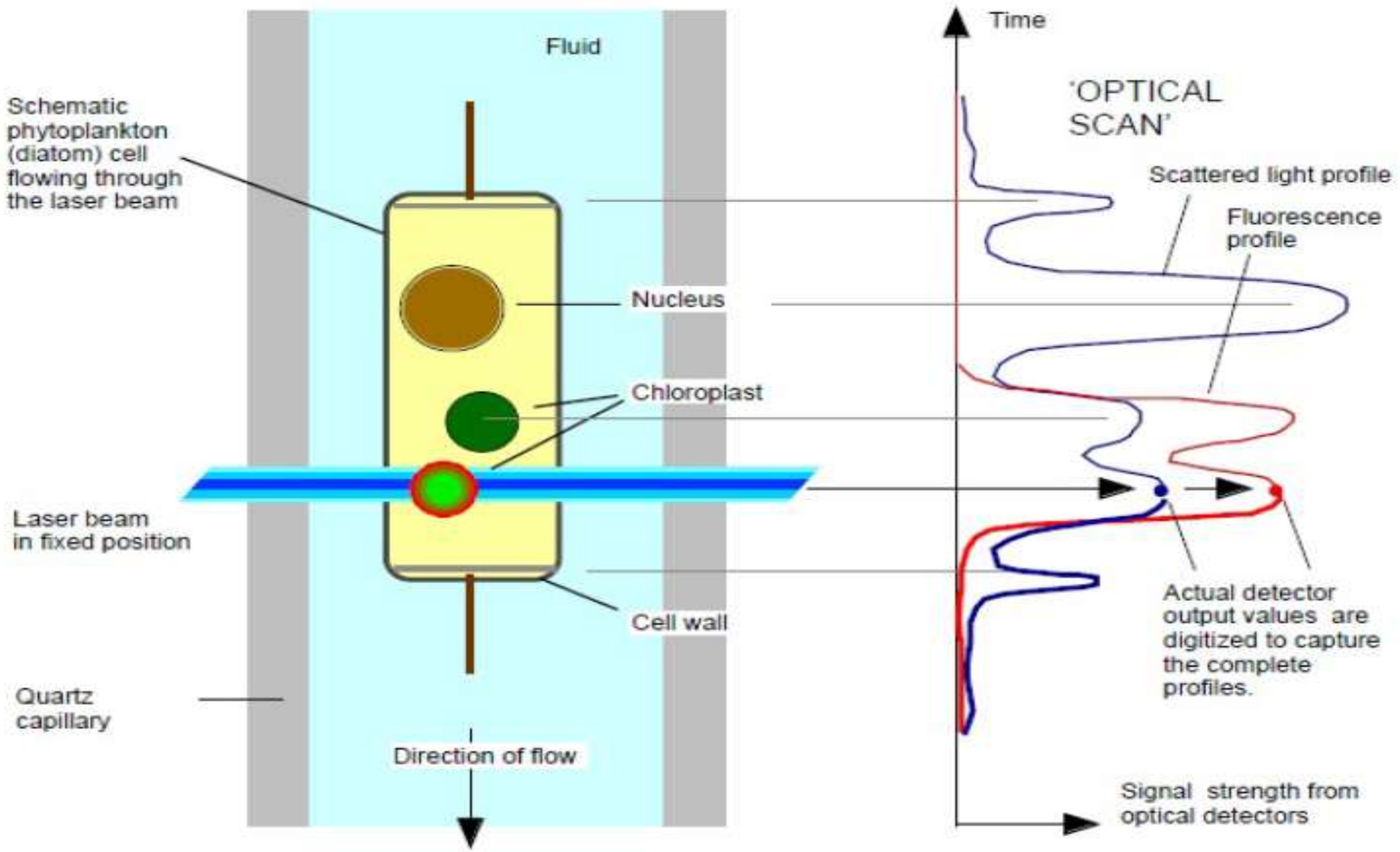
CytoSense Classic

CytoSub
Surface (2m)
Shallow (20m)
Deep (200m)

Principle and working



Principle and working



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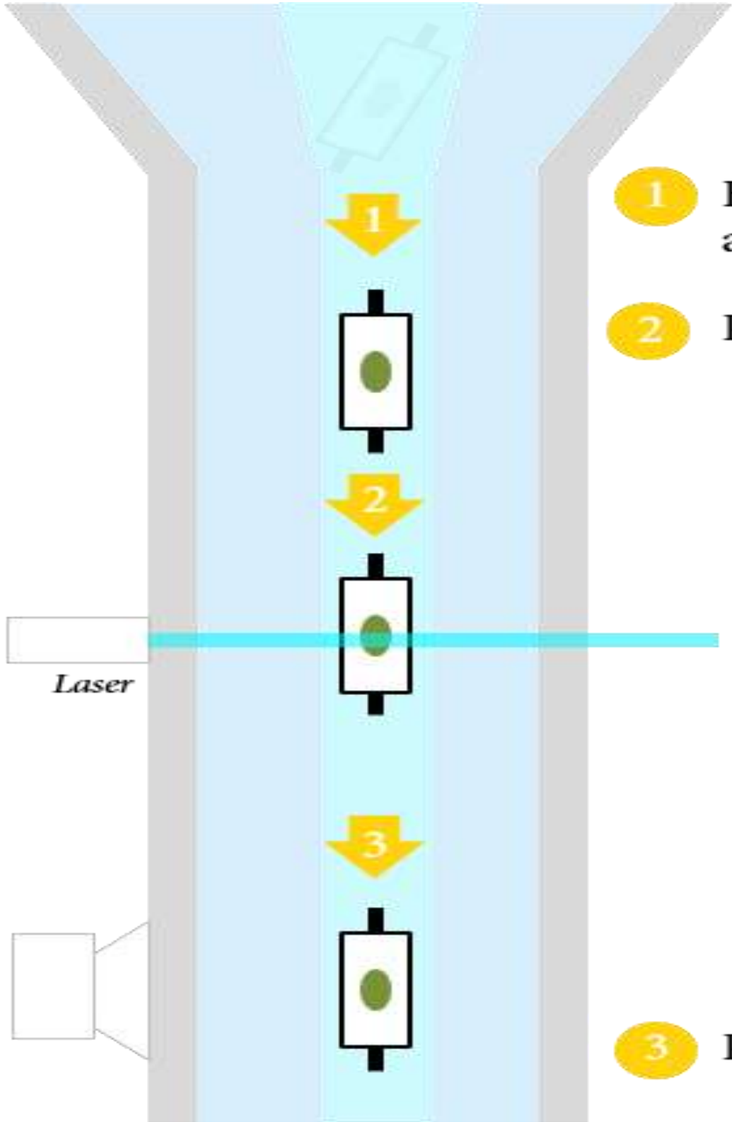
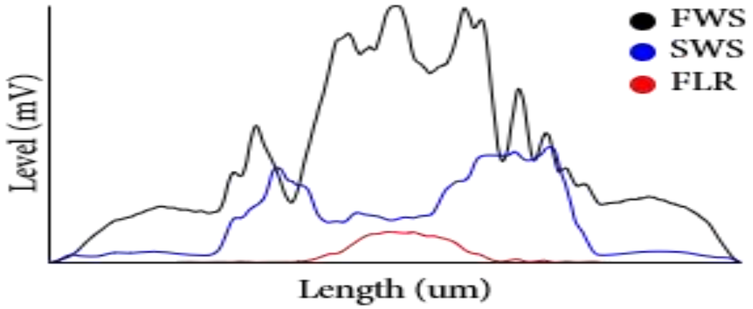
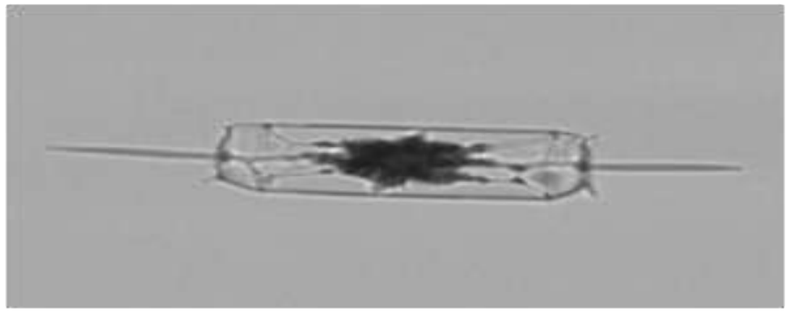


1 Hydronamic alignment of analyzed particles

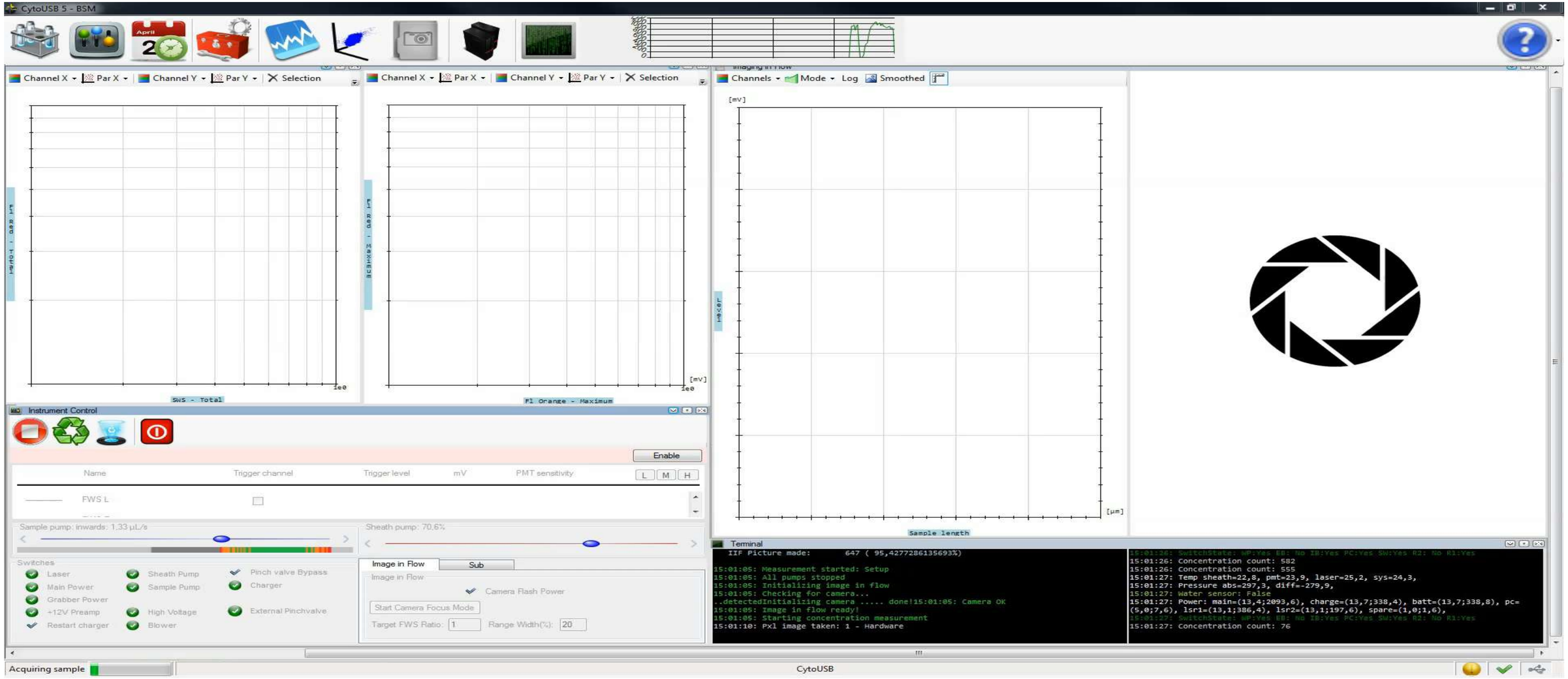
2 Particle is scanned by the laser



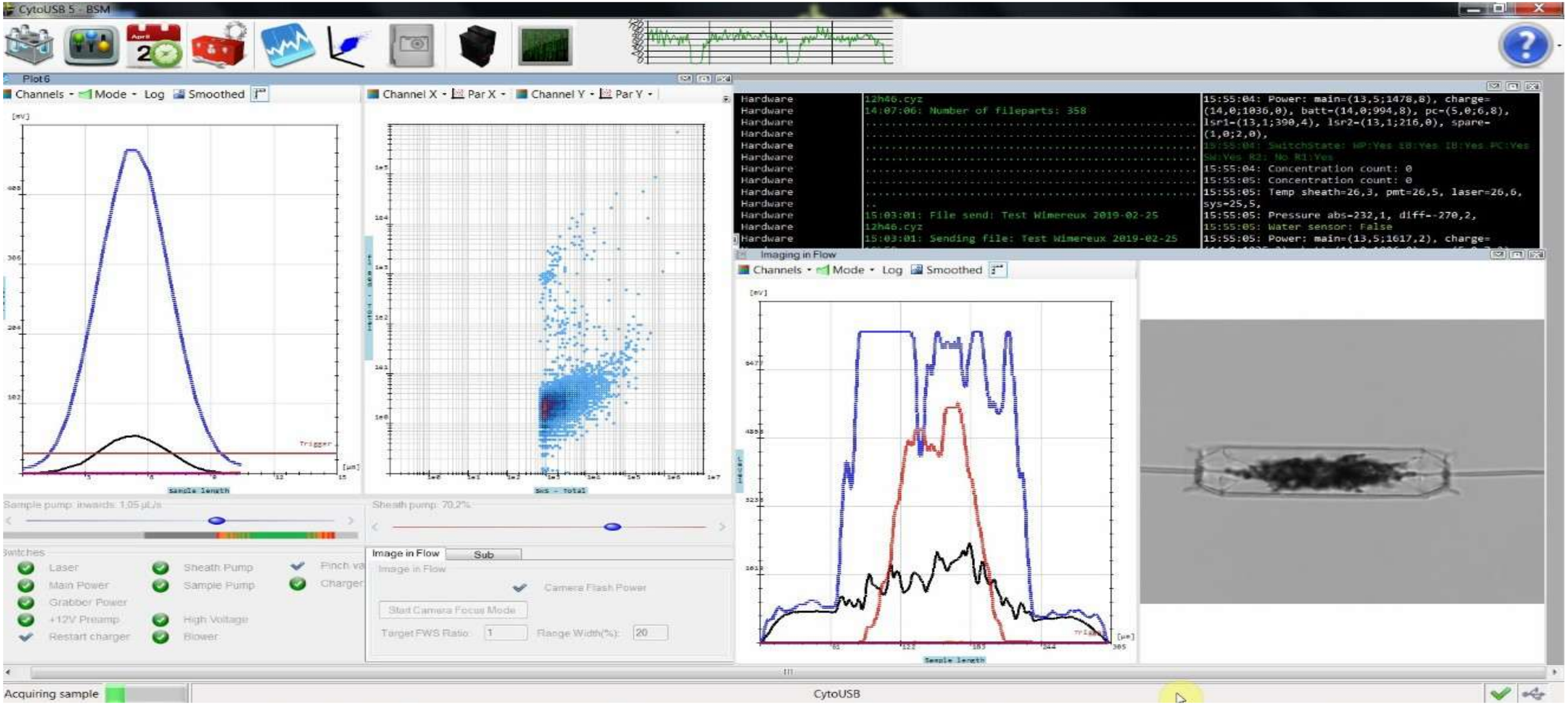


3 Particle is imaged by the camera

Principle and working



Principle and Working



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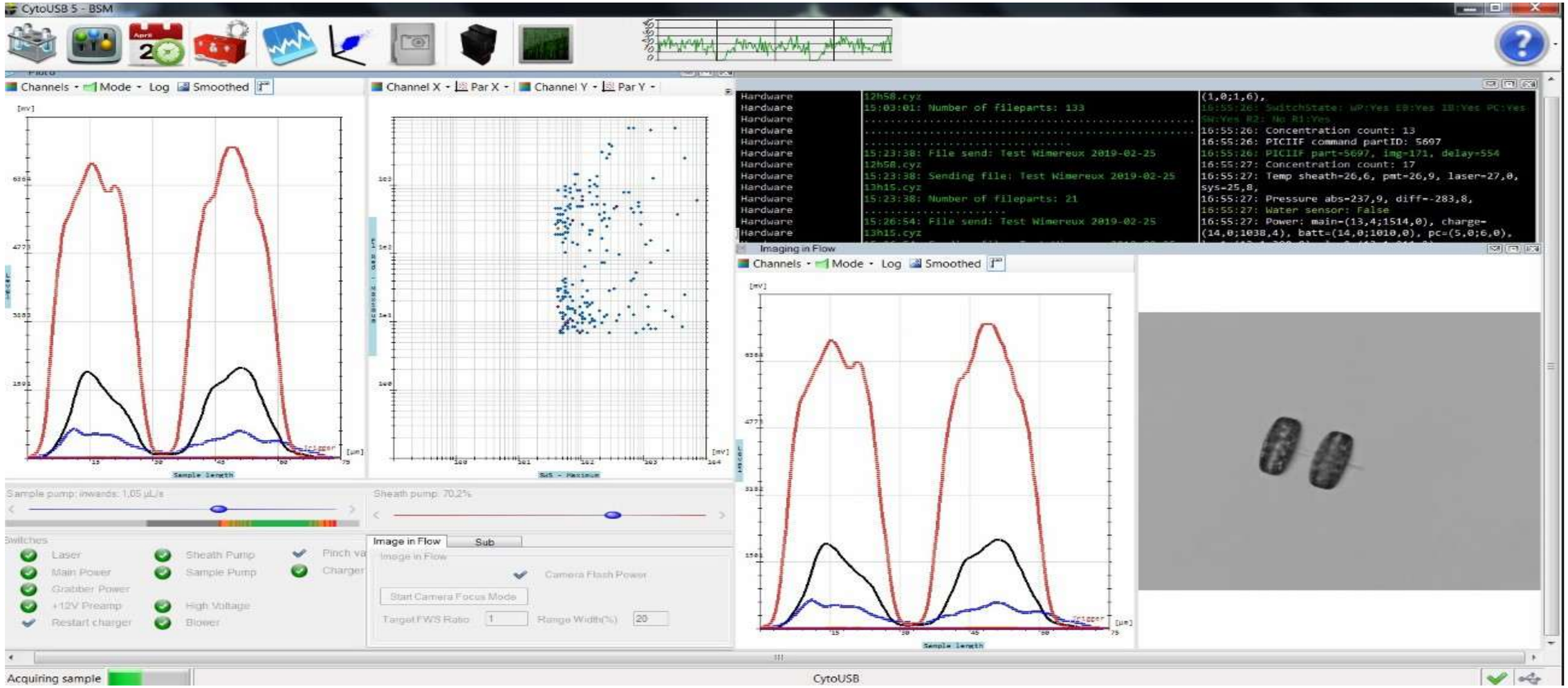
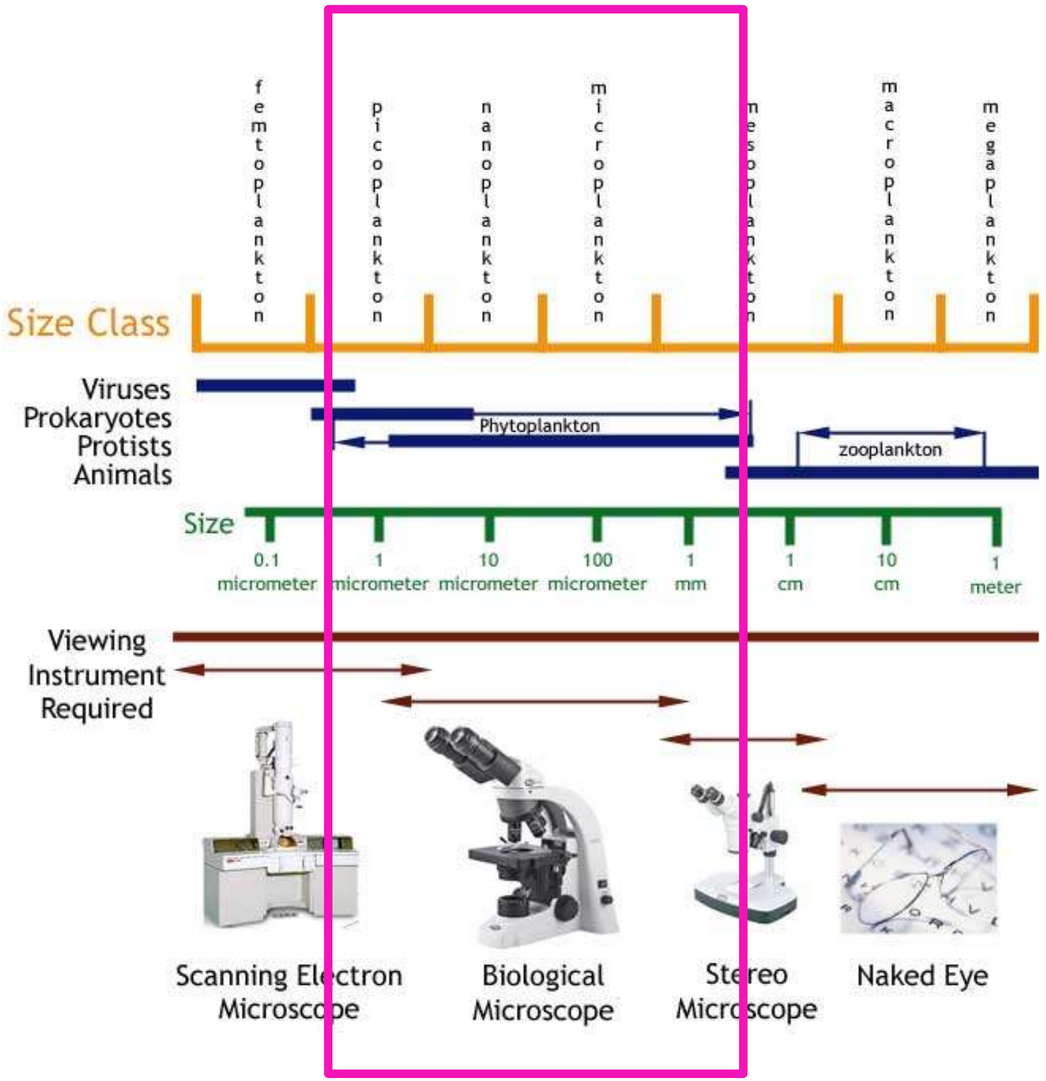
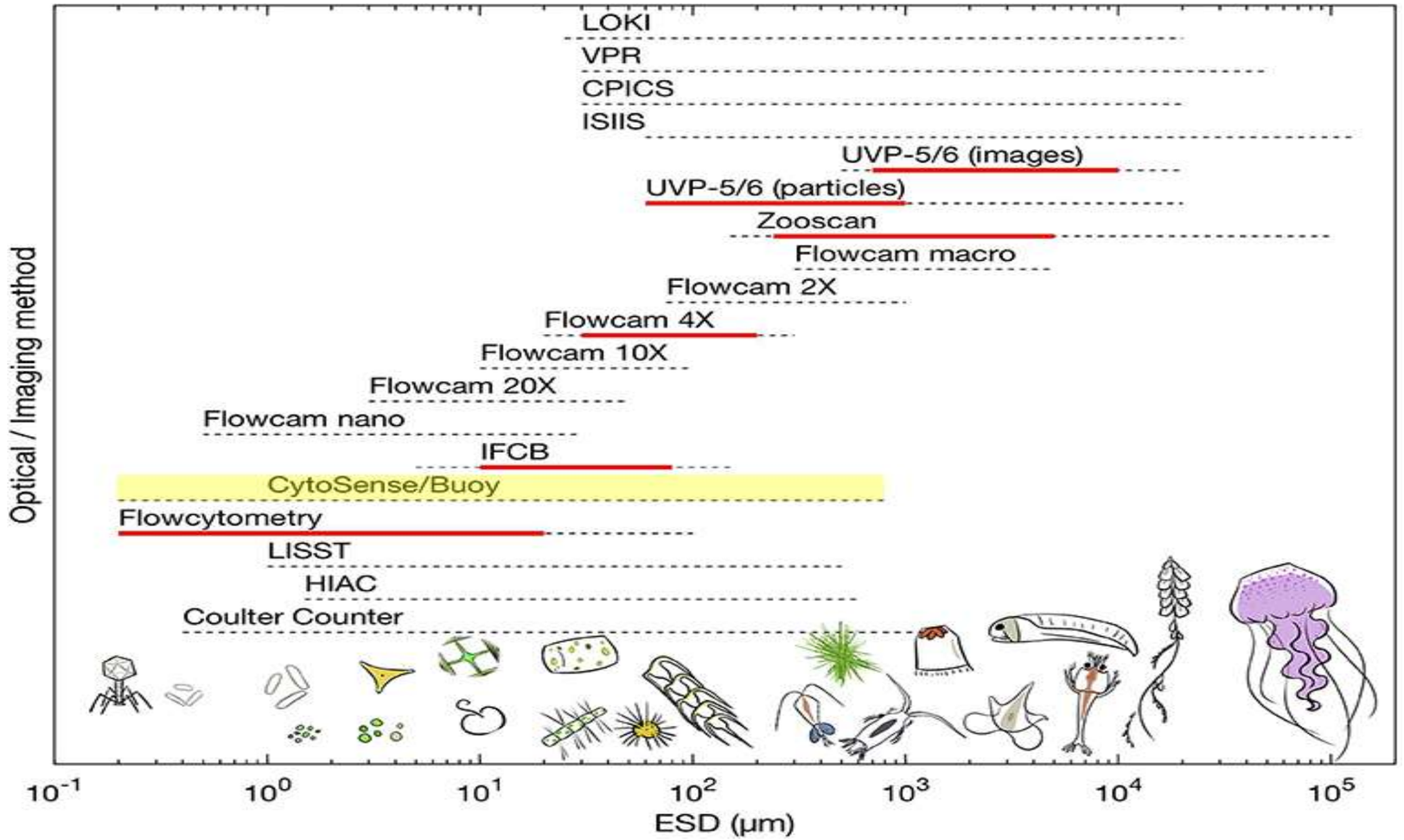


Why us?


femtoplankton
picoplankton
nanoplankton
microplankton
mesoplankton
macroplankton
megaplankton
Size Class
Viruses
Prokaryotes
Protists
Animals
Phytoplankton
zooplankton
Size
0.1 micrometer
1 micrometer
10 micrometer
100 micrometer
1 mm
1 cm
10 cm
1 meter
Viewing Instrument Required
Scanning Electron Microscope
Biological Microscope
Stereo Microscope
Naked Eye

Why us?

The size range of particles



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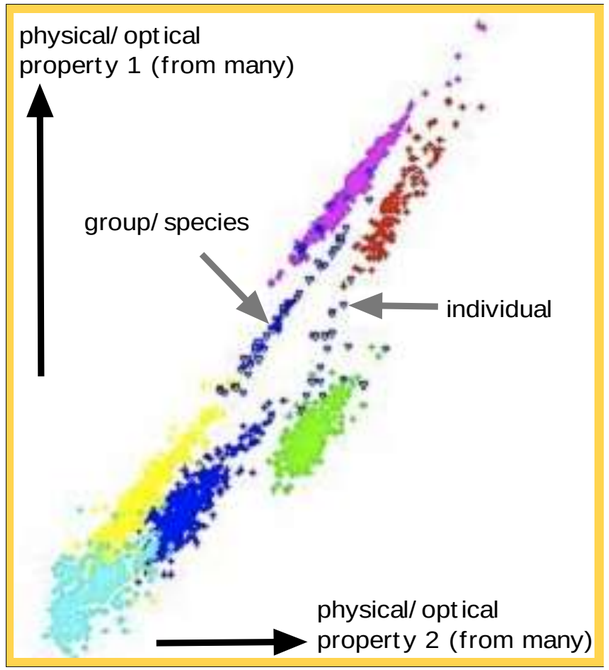
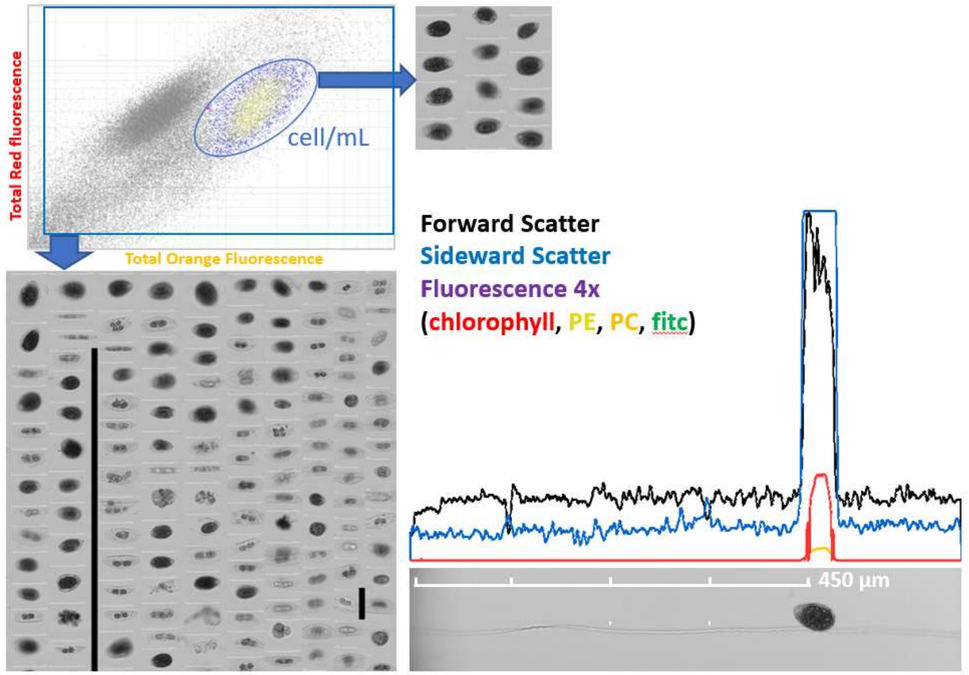
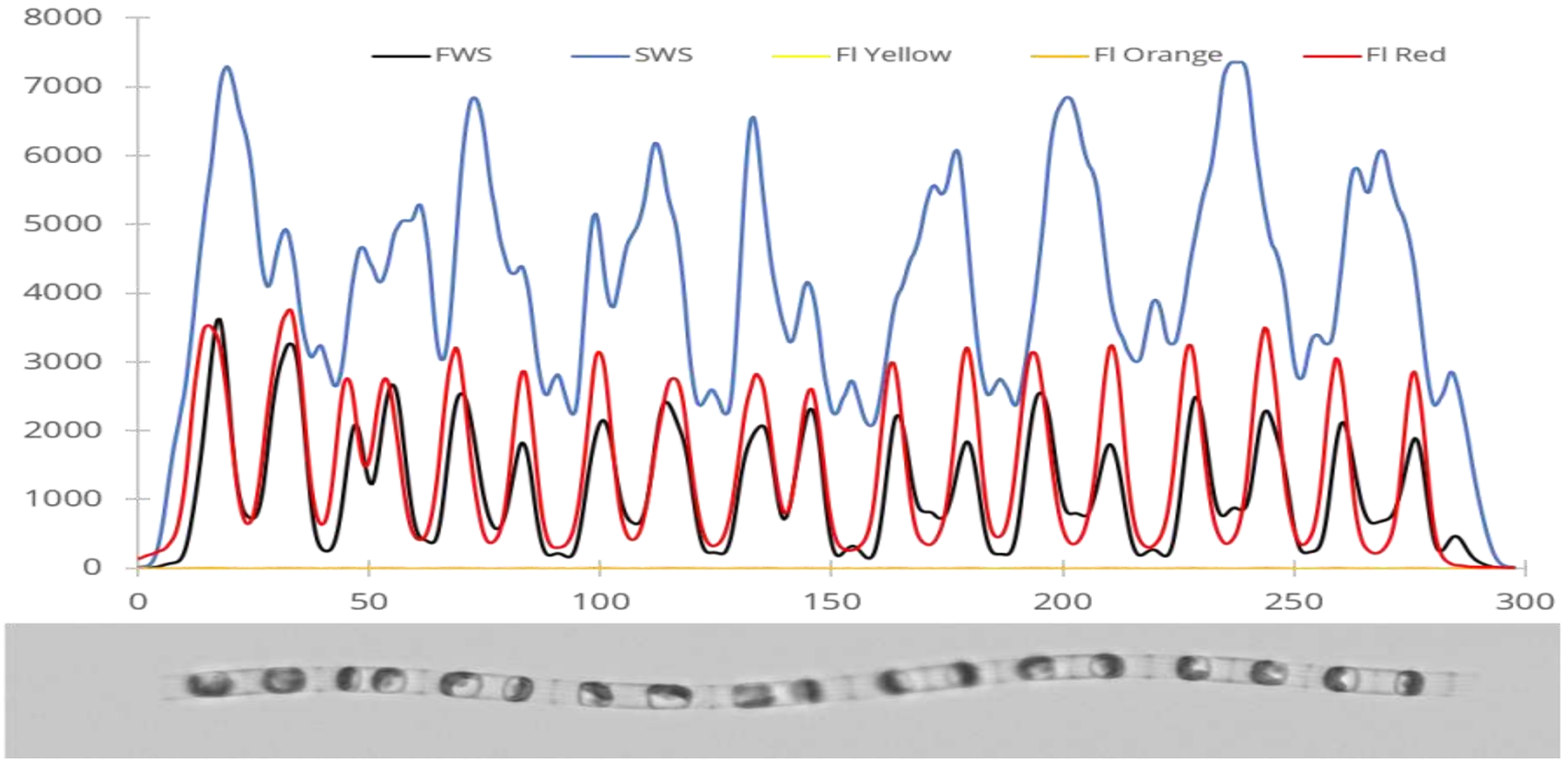




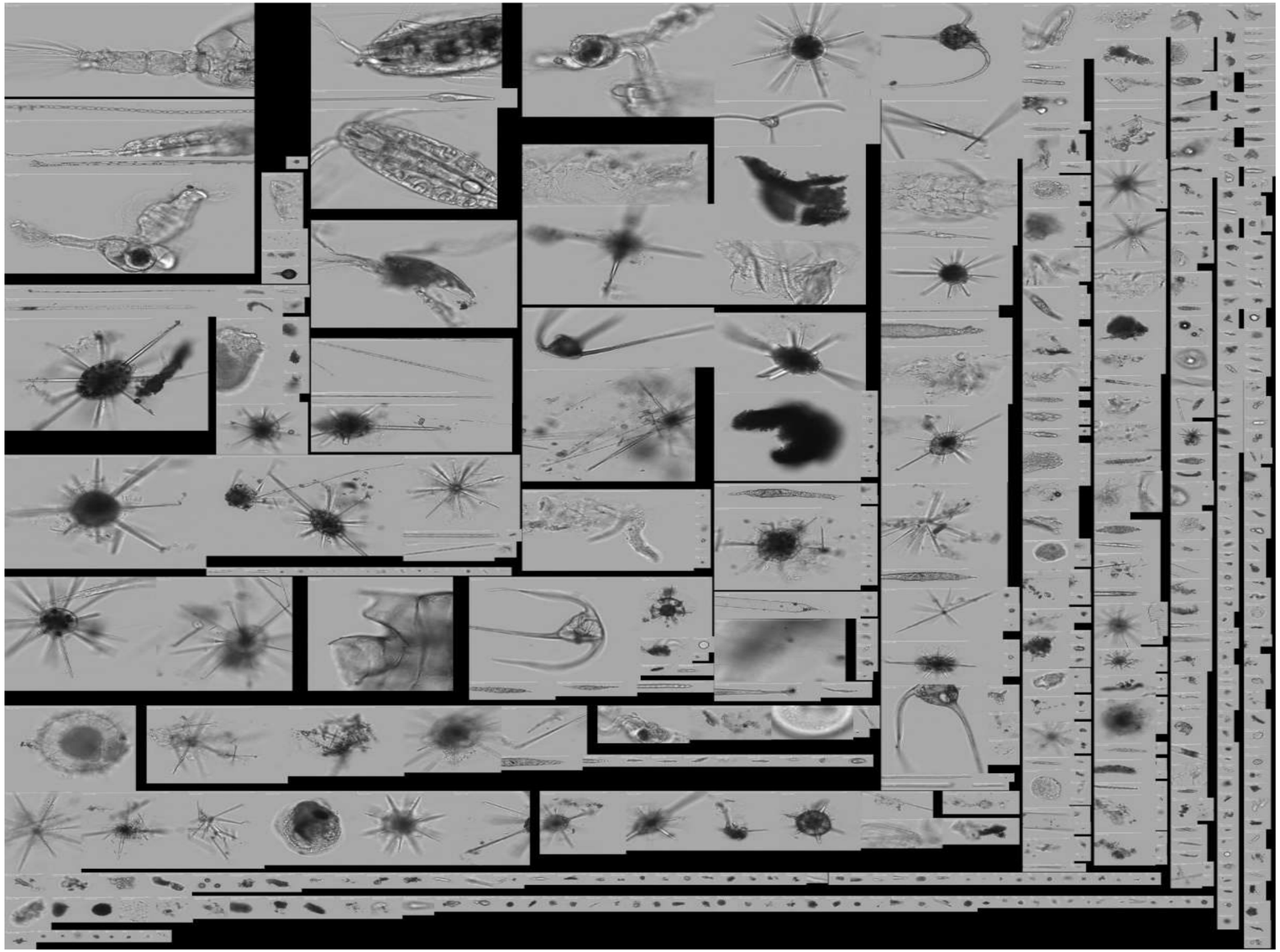
Unique type of information of particles in one analysis

Why us?

The type of particles



Why us?



- Size range of 0.3 µm to 800 µm in diameter and 2.5 mm in length
- No pre-filtration and no pre-processing required
- Maximum particle analysis (scan) rate of 10,000 particles per second
- Image rate is 35 frames per second
- Low total cost of ownership

CytoSense XR

- Basic benchtop instrument
- Laboratory only
- Standard configuration
- 520nm 40mW laser (fiber optic)+ 2 Forward Scatter + 1 Sideward scatter + 3 Fluorescence Channels
- No embedded PC
- Particle analysis rate: 5000 particles/sec

CytoSense Classic

- Customized benchtop instrument able to analyze wide range of particles
- Can be deployed in a laboratory and/or aboard a ship in the Ferry box setting
- Adjustable configuration depending on the species of interest and mode of deployment
- 1 or 2 Laser (beam) instrument
- Assortment of laser combinations and powers to choose from
- Internal embedded PC which can be accessed remotely
- Several add ons, viz. automated cleaning system, ferry box interface, staining module,

CytoSub

- Customized in-situ submersible instrument
- Can be modified for laboratory and Ferry box aboard a ship deployment
- 3 types: 2m max, 20m max, 200m max
- Can be deployed on a buoy or a platform submerged under water for a lengthy periods of time for real time measurement
- All the features of CytoSense
- Internal automated cleaning system for extended deployment

Accessories

Buoy

- Can accommodate 4 submersible instruments
- Solar panels and telemetry can be provided
- Medium sized at 2.25 meters diameter

Accessories

Autonomy Module

- External or internal
- Additional filters
- Carbon Filter
- Biocide bag
- Syringe with beads
- Remotely operable
- Suitable for long term deployment

Autonomous Staining Module

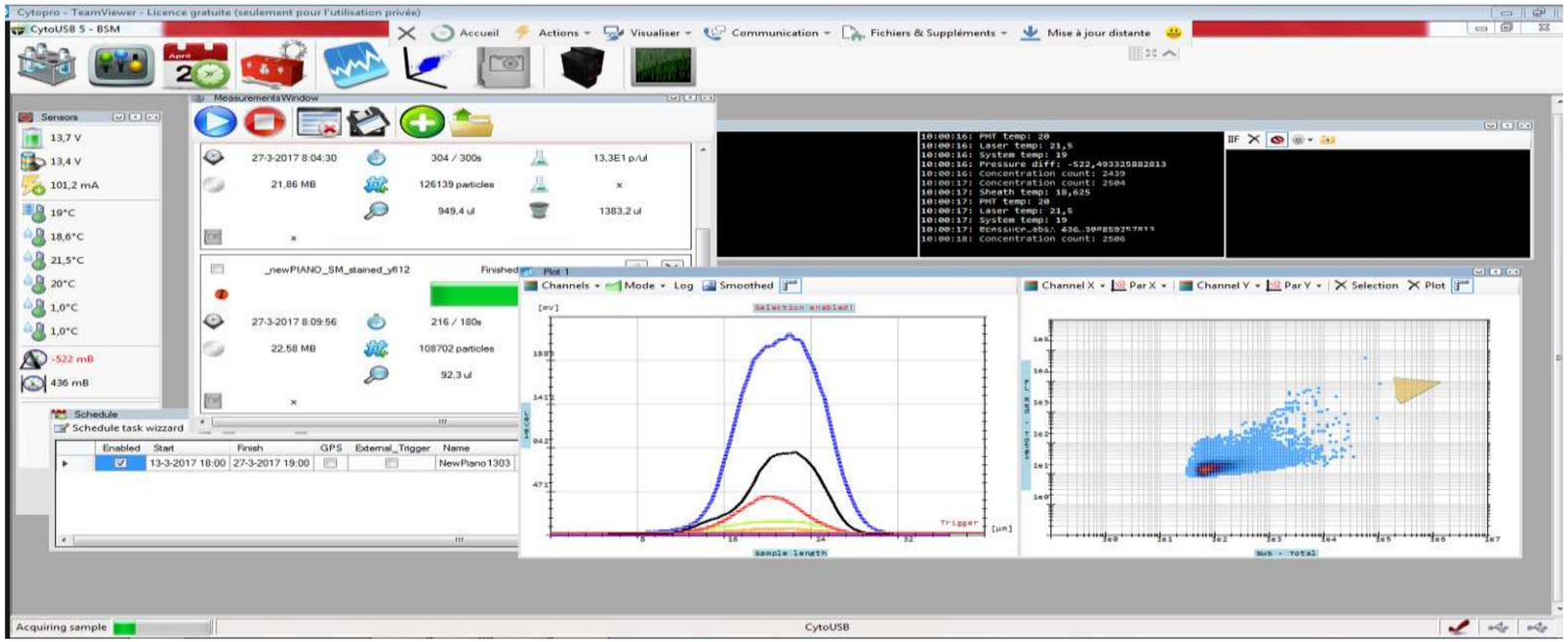
- Completely automated
- Analysis of autotrophs
- Compatible with CytoSense
- 1 dye unit

Multi-point sampling

- Enables to monitor multiple individual sample stations with individual scheduling
- Multiple stations possible
- Fully compatible with CytoSense

Software

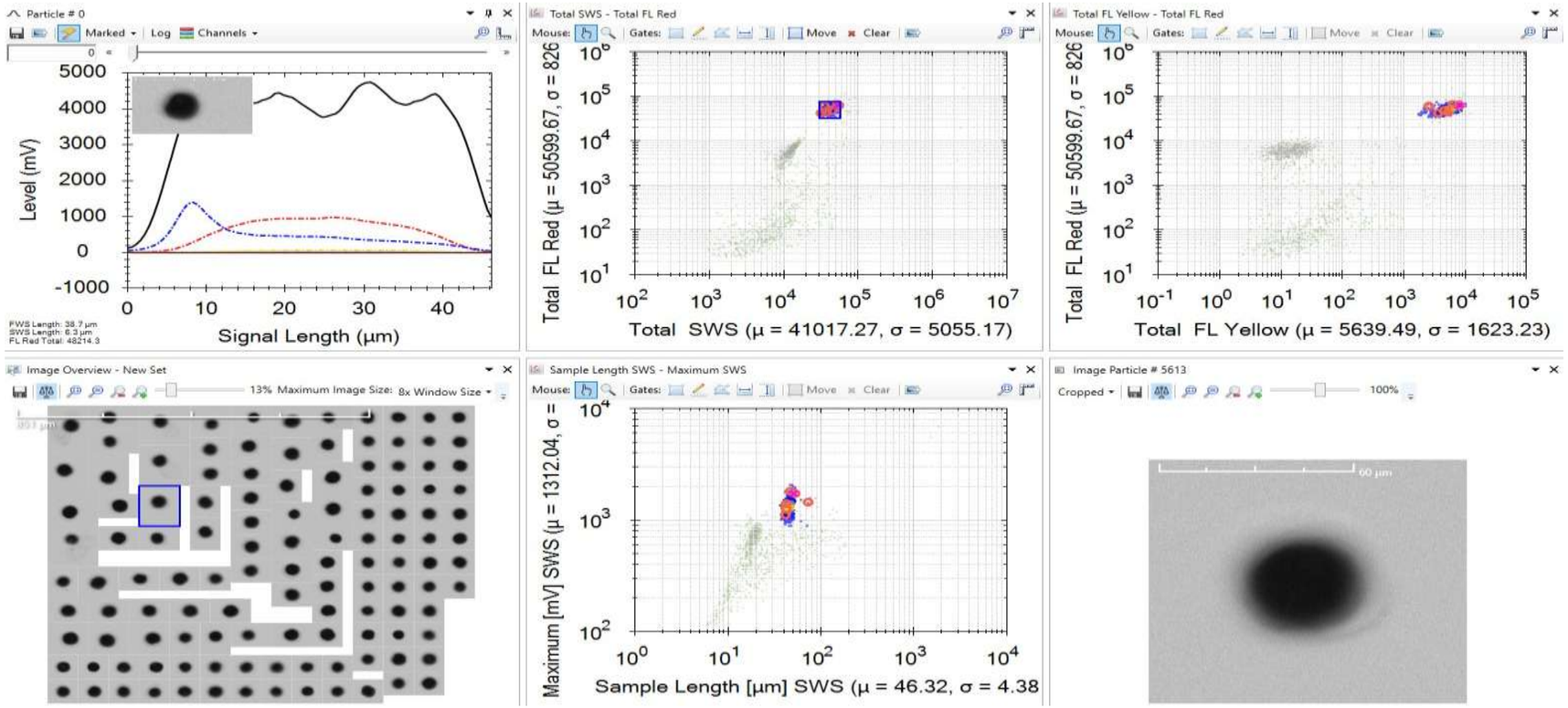
CytoUSB



- Observing data during measurements
- Schedule measurements at fixed times or at time intervals
- Checking the instrument on the sensor readouts.
- Remote control from your office computer or your cell phone

Software

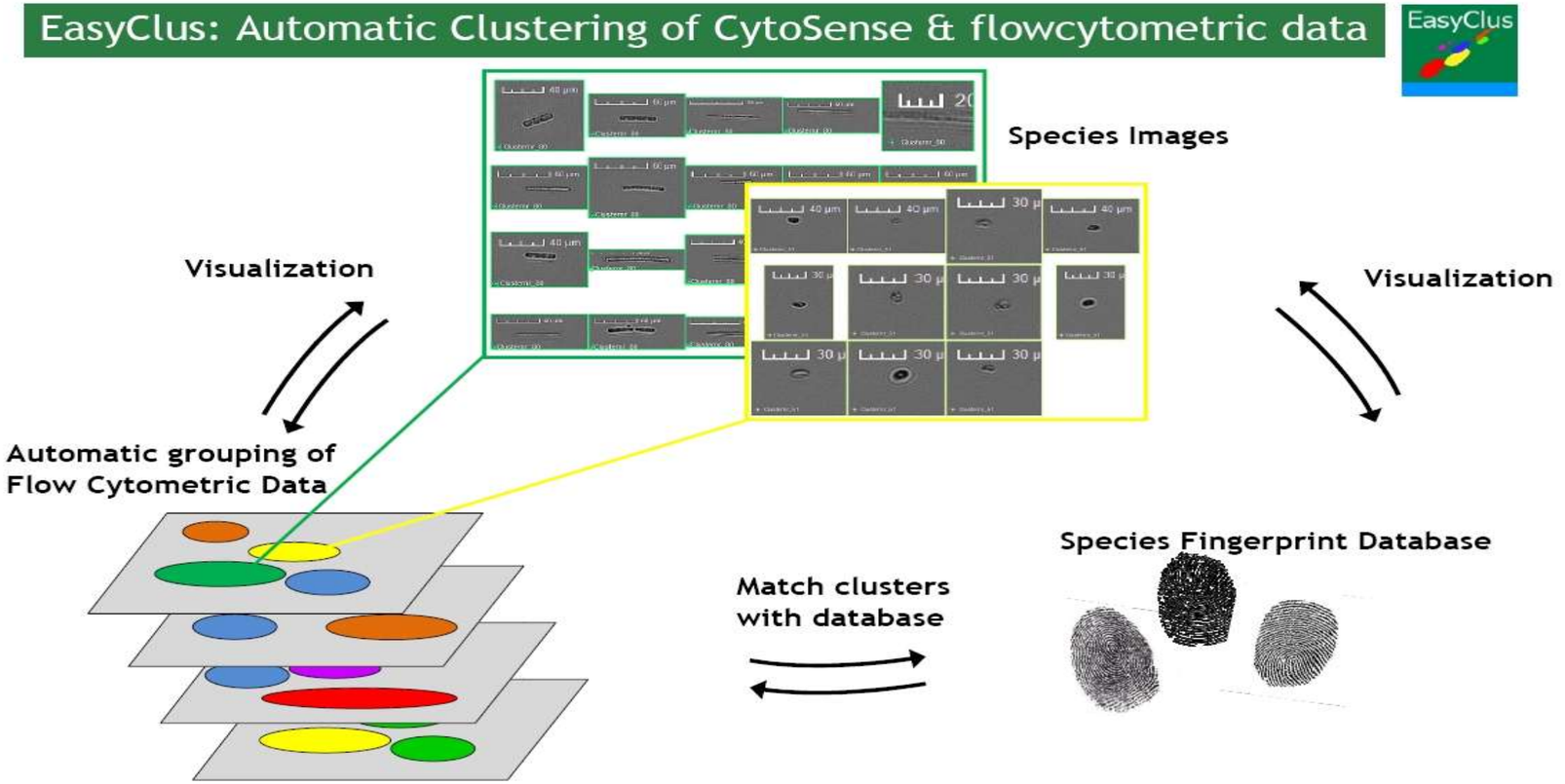
CytoClus



- Data exploration with **CytoClus** software

Software

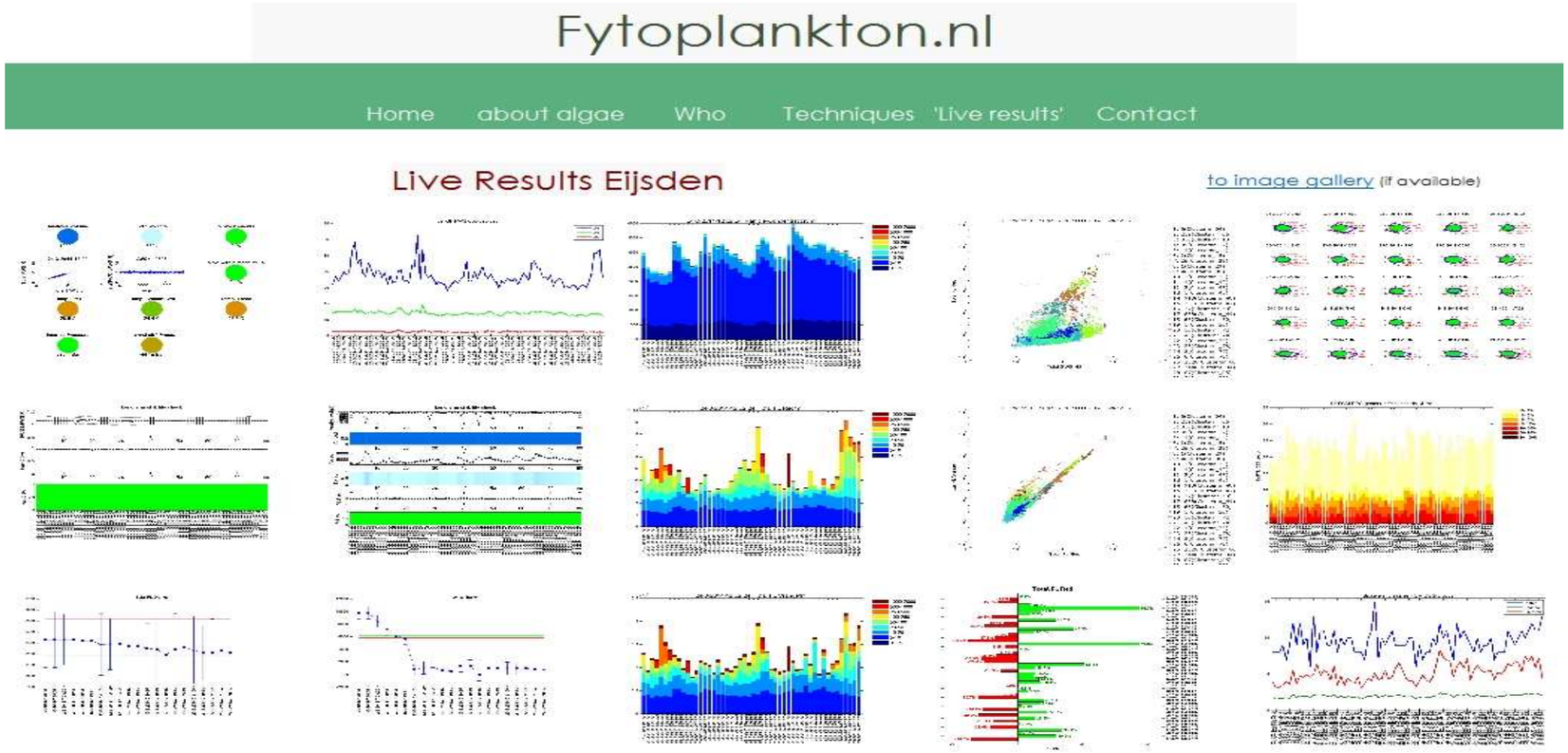
Easyclus©



Easyclus© can handle large amounts of flow cytometric monitoring data and is especially optimized for phytoplankton data of CytoSense flow cytometers

Software

Easyclus© Live



Easyclus LIVE© is the online real-time flow cytometric analyses.

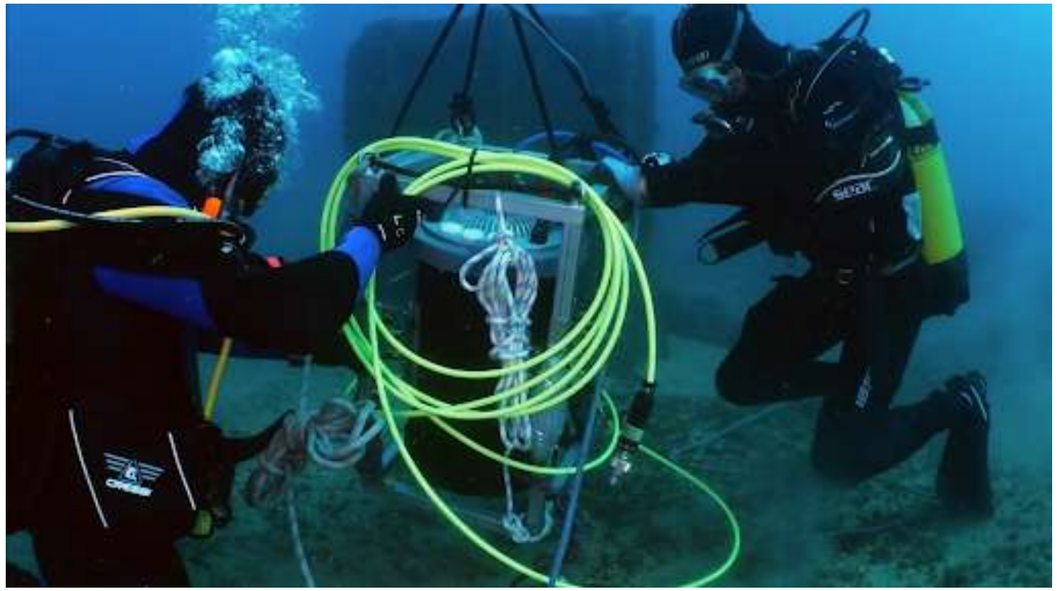
Results and the instrument status can be watched on an internet website (also by smartphone) just a few seconds after analysis.

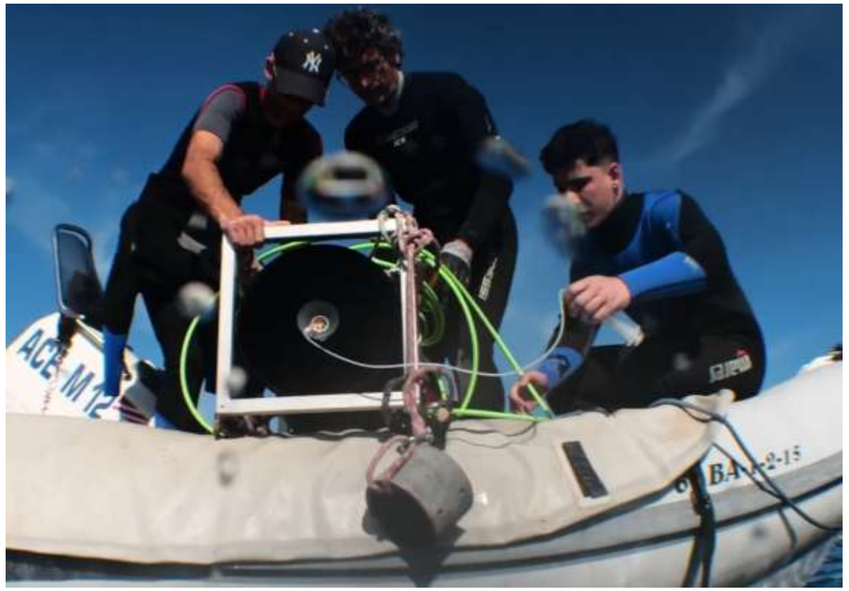
Deployments

Eijsden, The Netherlands

Finmaid Ferry, Finland

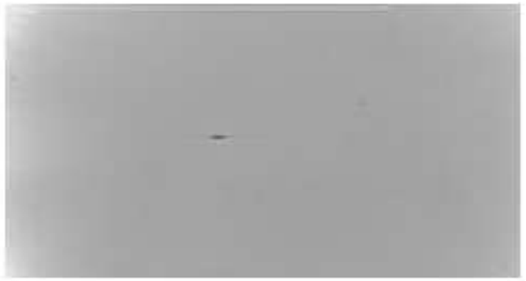
Deployments



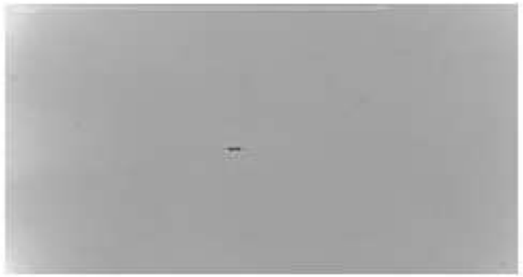


Deployments

Particles



Nitzschia sp.



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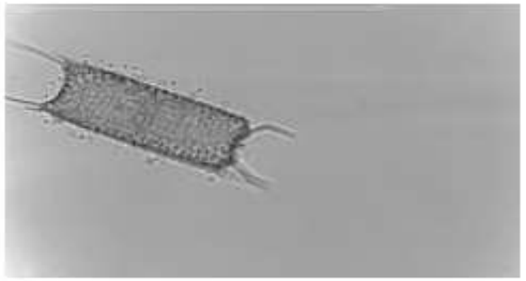
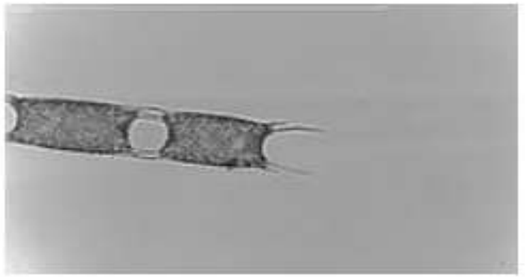


Odontella sp.



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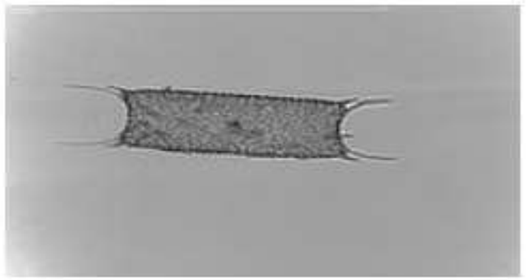

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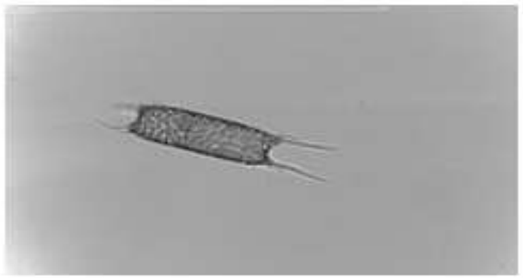

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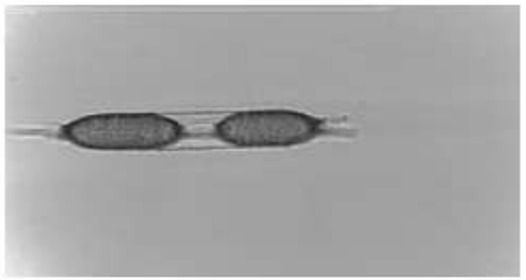

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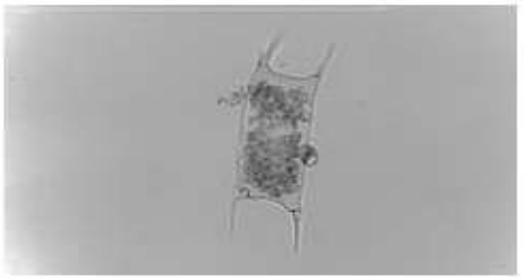

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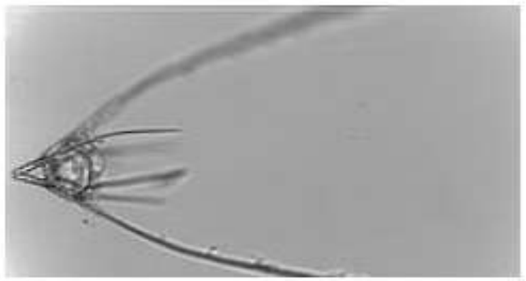
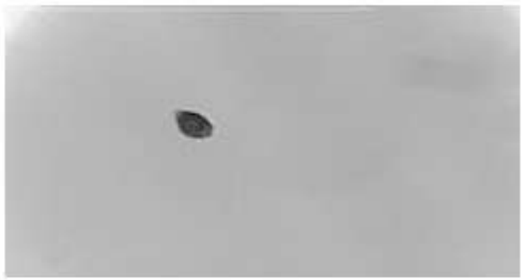


ophipleteus

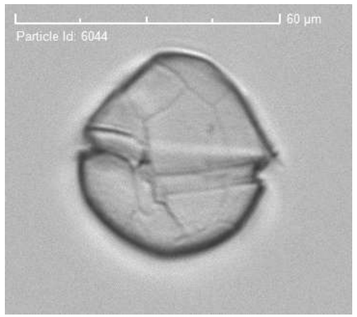
Prorocentrum micans

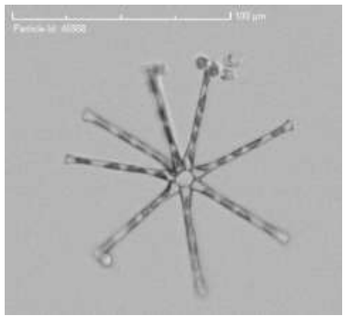


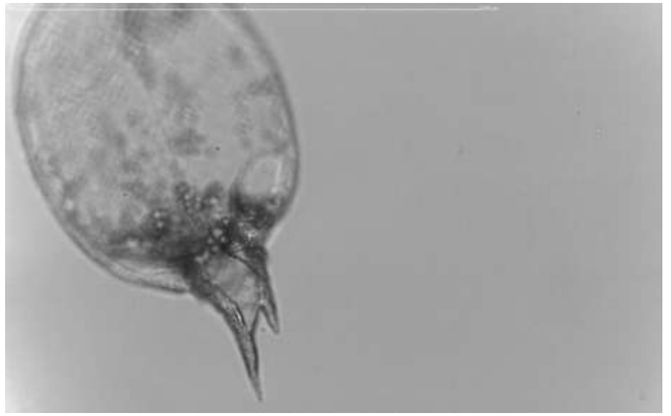
Prorocentrum micans

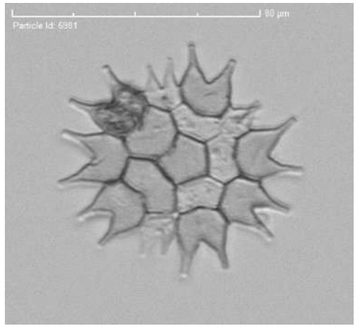
Prorocentrum micans

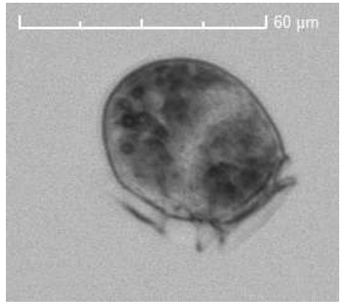
Particles

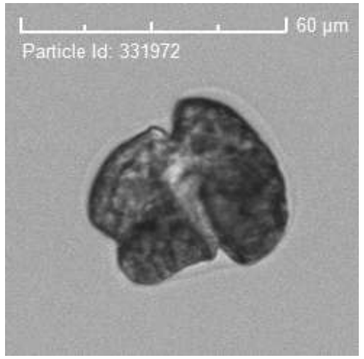

60 µm
Particle Id: 6044








60 µm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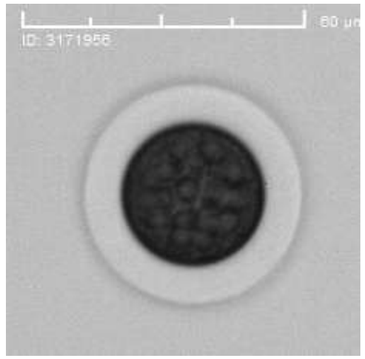
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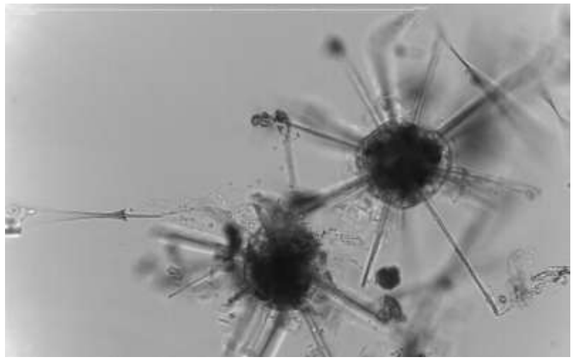
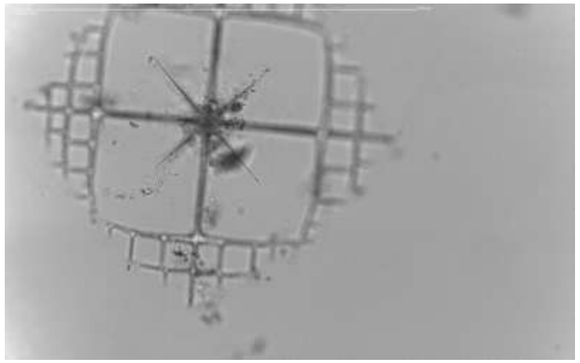
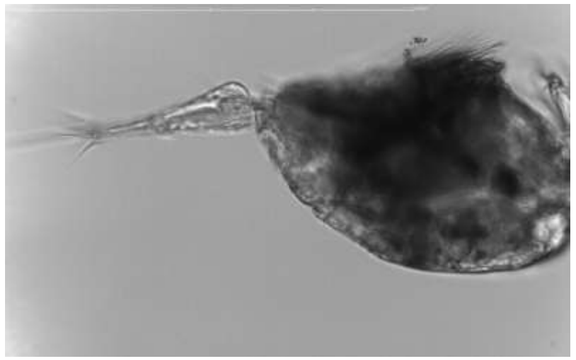
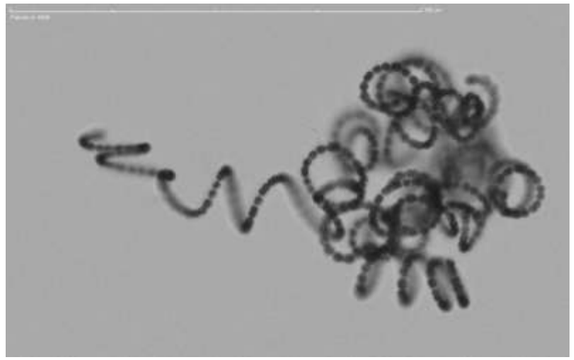
Some pictures









Thanks for your attention