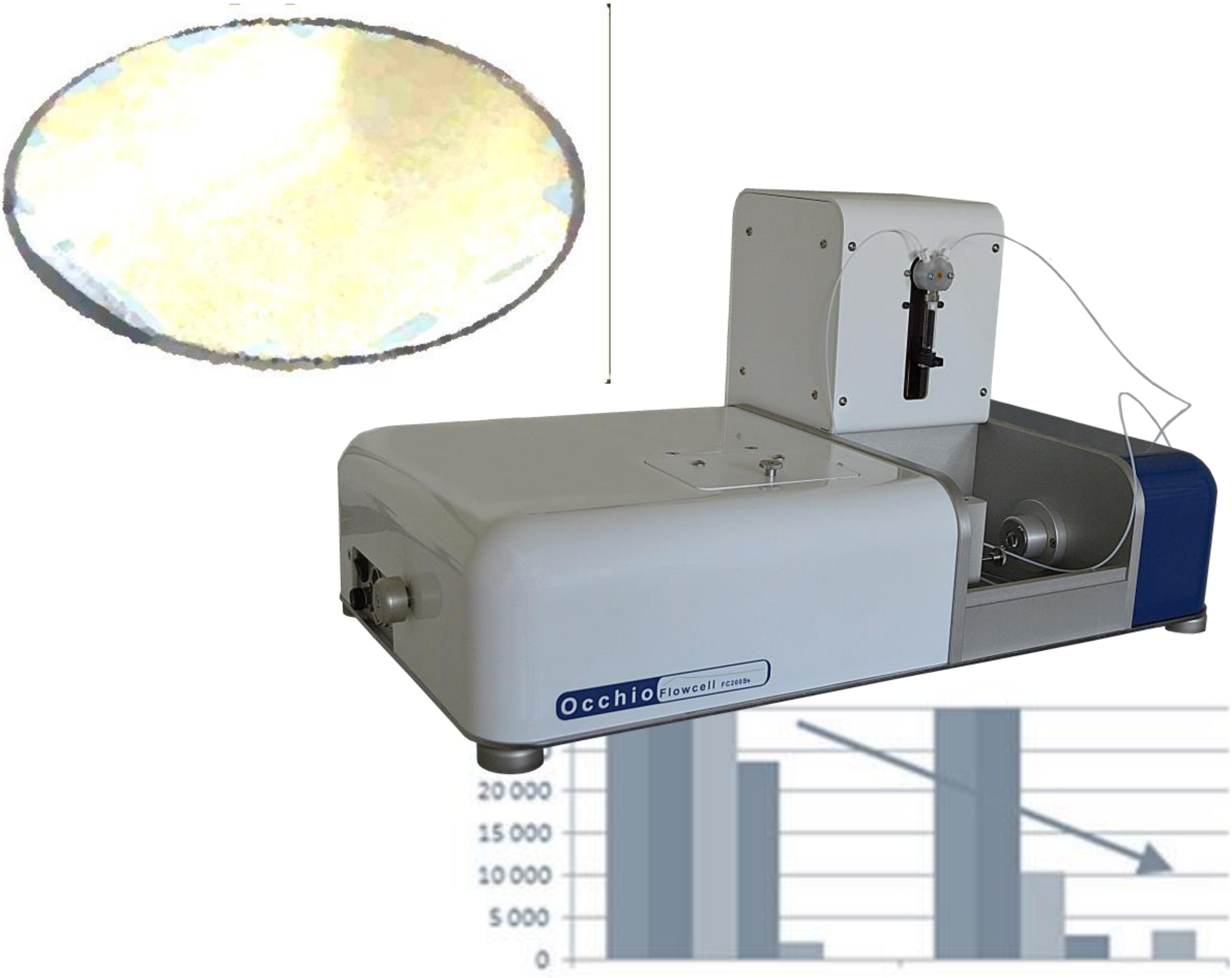
QAQC LAB
www.qclabequipment.com

CMP DEPARTMENT



FC200S-CMP Slurry

Particle counter for CMP slurry

0.2 µm — 500 µm

www.occhio.be

OCCHIO Instruments: Particle analyzers

Since 2001, OCCHIO Instruments develop devices characterizing particles through image analysis methods. We offer systems for measuring particles from 200 nm to 10 cm in size. These measuring instruments are both granulometers and particle morphology analyzers, but also high-resolution counters.

2010: FC200 line was created. Today, more than 5 models make up the FC200 family. With the principle of image analysis, these devices can both measuring particle size, counting and morphology analysis.

For microelectronic application, OCCHIO decided to create a new particle counter for CMP slurry control.

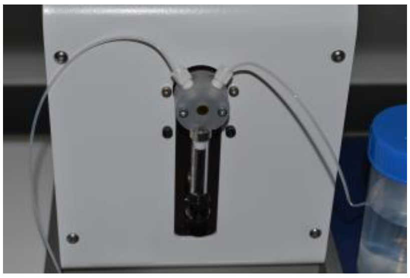
FC200S-CMPslurry: particle aggregates detection

The FC200S-CMP slurry is designed to count the particle number/mL. Designed on the principle of image analysis, it also allows morphological analysis.

Thus, we can accurately identify each type of particle population in suspension. For example, in particle suspension, it will be easy to identify aggregates and pollution or droplets of oil.... FC200S-CMP slurrry is designed with an evolutive configuration. User will be able to update it, following new development provided by OCCHIO INSTRUMENTS.

- Designed to work under an fume hood
- Counting by image analysis technique
- High resolution optical bench (detection from 200 nm)
- Monochromatic collimated light
- Pipe tip or tubing injection
- Callisto™ Software
- Can be used with a laptop

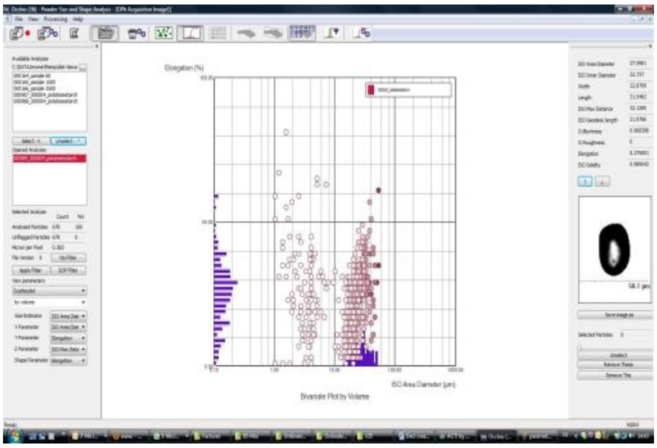
- 3-way syringe pump
- BK7 glass syringe
- Wide flow rate range
- Teflon tubing
- Compatible with DLS and 4F principle



FLOWCELL FOR CMP Slurry

- Calibrated spacer = perfect counting
- Dedicated glass windows geometry
- Special optical glass for CMP Slurry
- Strong design

FC200S-CMPslurry: More than a particle counter

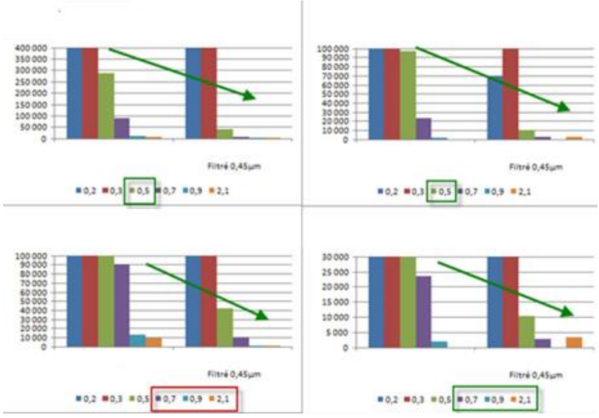


CALLISTO SOFTWARE

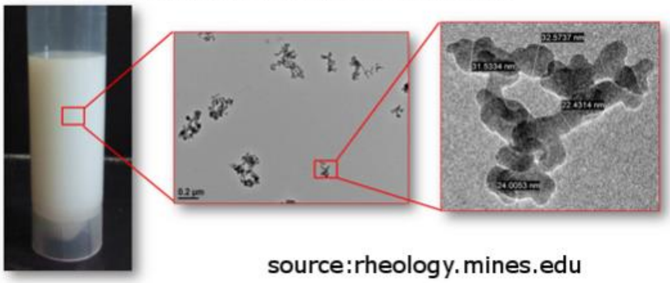
- Particle count by mL
- Particle size size analysis
- Morphology analysis
- Special filters
- More than 52 parameters
- Export to txt and Excel format

Special algorithm

- Particle size versus time
- Stability analysis
- Aggregates detection
- Sedimentation analysis
- Kinetic analysis on several days
- Fast and easy analysis



Fumed Silica Chemical Mechanical Polishing Slurry



source:rheology.mines.edu

CMP Slurry analysis: Aggregates detection

In order to avoid any scratch on wafer, it is necessary to check CMP Slurry before polishing step. Our particle counter allows to detect aggregates in suspension which are scratching wafer.

With image analysis technique, this device is unique to detect few aggregates in suspension. With connected software, user can check each data with corresponding picture.

Automatic injection without any dilution

TECHNICAL SUPPORT

OCCHIO is a team with specialists in image analysis and particle size analysis;

OCCHIO is collaborating with acadamic lab to make new developments

Technical support is provided in order to help all users

Occhio devices + technical support

= Perfect results

TECHNICAL SPECIFICATIONS

Model	FC200S-CMP slurry
Particle size range	Wet method : 0.2-500microns
Time duration	2-5 minutes (sample dependent)
Parameters	Norms ISO 9276-6; 7; 8 + Parameters OCCHIO **Particle size**: ISO Area diameter; ISO Inner diameter; Mean diameter; Perimeter diameter;Crofton diameter; Half Crofton diameter; Width; Length; Ellipse Width; Ellipse Length; ISO Max Distance; ISO Geodesic Length; **Morphology**: Occhio Bluntness; Occhio Roughness; Elongation; ISO Aspect Ratio; Ellipsoid Elongation; Ellipsoid Roundness; Ellipse Ratio; ISO Eccentricity ISO Straightness; ISO Roundness; ISO Compactness; ISO Extent; ISO Solidity; Convexity; ISO Circularity, Luminance mean, Luminance var.
Dimension and weight	630 x350x330 mm ; 18.5 kg
Disperser	Magnetic stirrer and ultrasonic probe in option
Optical bench	C-Mos 10 Mpixels ; Collimated and monochromatic light
Validation	IQ,OQ,PQ in option
Computer Configuration	Windows 7-8, , Intel Core i5-650 @3.2GHz, 4MB cache ; 4 GB @ 1156MHz , HD 500GB
Power supply	110-240 V 50/60 Hz
Working conditions	Temperature 5°C – 45°C, HR 35-80 %
Images format	Bitmap
Database	*.oph , export to txt and excel
Statistic presentation	Particle size distribution (counting, volume) Morphology distribution Individual picture for each analyzed particles Scatterplot PDF report …..

These specifications can change in future in relation with new developments