



You need precision, you want morphology



OCCHIO Zephyr ESR

The new solution for particles and granulates analysis



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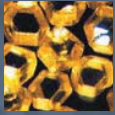
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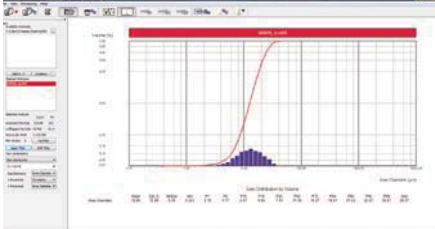
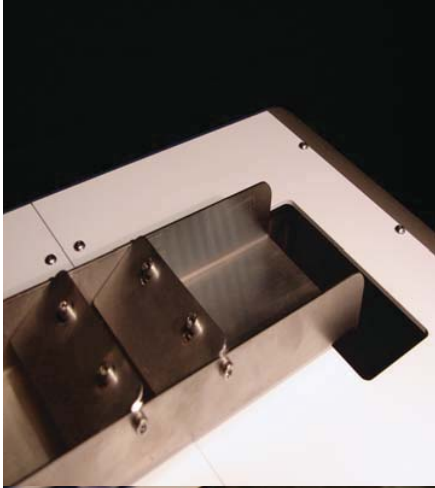
Imaging solutions in particle analysis

www.occhio.be



OCCHIO Zephyr ESR

Size, sieves correlation and shape analysis for particles from 30 microns up to 30 mm



Through the efforts of an international and multidisciplinary team of engineers, **OCCHIO** offers you a complete range of solutions, starting from 200 nanometers and ranging up to centimeters. Whether it is for laboratory instrumentation, «at line» or even «on line» solutions, **OCCHIO** is prepared to be your partner in high-level powder characterization. **OCCHIO** and **OCCHIO ZEPHYR ESR** bring you accuracy, profit and innovation.

_ Accuracy

With its proprietary Light and high quality lens, **OCCHIO ZEPHYR ESR** will change your own perception of image analysis, measuring particles like granulate, sand, ceramics, fibers etc..

_ Profit

ZEPHYR ESR is an automatic device dedicated to sieveable powders characterization. Associated with the software **CALLISTO**, It is easy to use and carries out rapid analyses in less than few minutes.

_ Principle and innovation

Based upon a combination of mechanical and gravity dispersion, the **OCCHIO ZEPHYR** provides for a fast and accurate size and shape analysis of sieveable powders. The instrument combines a high quality imaging system with a robust mechanical quality design for at-line and on-line process control. The powder is dispersed by means of vibrating feeder and gravity dispersion. The system uses a combination of specific lens & lights.

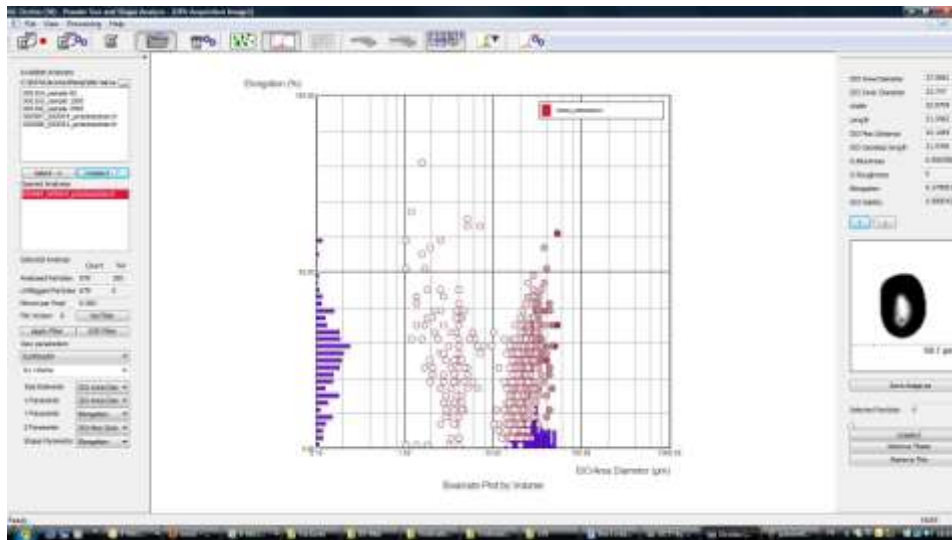


For more information contact us

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PARTICLES ANALYSIS WITH NEW CALLISTO™ 2011

Since 2001, OCCHIO develops revolutionary systems by image analysis technique to study all particles types (powders, suspensions, emulsions and foams). These new systems, associated to the powerful software CALLISTO™, allow particle size measurements, shape analysis & particle counting. Now, more than 43 parameters are available ...



PARTICLE SIZE PARAMETERS:

- Area diameter
- Inner diameter
- Length
- Width
- Geodesic length
- Mean diameter

SHAPE PARAMETERS ON CALLISTO™ 2011

O. Aspect Ratio and Elongation: The Elongation is defined as $1 - \text{AspectRatio}$ with AspectRatio being the ratio between the width and the length of the particle

ISO Straightness: For very elongated particles, the straightness is described by the ratio between the maximal distance and the Feret Length

ISO Compactness and ISO Roundness : Compactness and roundness are related to the degree to which the particle is similar to a disc. Roundness is less robust than compactness

ISO Circularity: Degree to which the particle (or its projection area) is similar to a circle, considering the smoothness of the perimeter

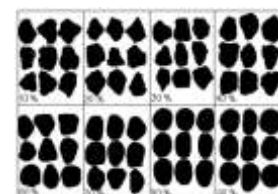
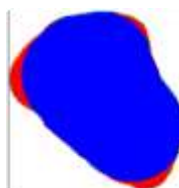
ISO Solidity: Solidity is the object area divided by the area enclosed by the convex hull (perfect to detect aggregates in suspension)

O. Bluntness : The Bluntness Index is the expression of a “ maturity in the abrasion process ”. It specifies how far we are from a perfectly rounded shape

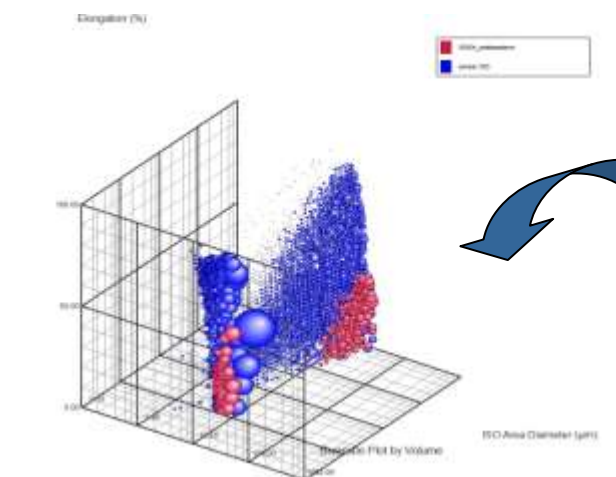
O- Roughness: Amount of material to be removed from the shape before getting a smooth surface

Luminance: The luminance is the mean greyscale level of the particle

O-Porosity: Porosity estimator



CALLISTO™ 2011 : A LOT OF STATISTIC TOOLS



SCATTERPLOT

Possibility of **having a representation** of the particle size parameters versus morphologic estimators
According to the particle size classes chosen by the operator, all plots are corresponding to particles. Operator can visualize each particle in clicking on each plot.

Scatterplot in 2D and 3D

MICROSCOPE MODE

Display of each parameters and picture for selected particle on Scatterplot or live pictures. Operator can save picture for individual particle in Bitmap format. Possibility to select several particles to make specific groups.



OTHER TOOLS...

- Particle size & shape distribution by volume and number
- « TRENDS » mode in having all parameters versus time
- Operator can choose particle bins
- Export to Excel format
- Choose presentation of your data report
- Correlation with sieves analysis
- Analysis filters 1D or 2D with shape and size parameters
- Overlay your data
- Shape, size, count on several graphics. A lot of statistics tools

NOUVEAUTES

New Algorithms for particle detection: « Ghost particles » to analyze particles with very low contrast; special algorithm for bubbles detection

Particle counting with particle shape filter : « Flowcell » systems with CALLISTO™ software provides real counting

All OCCHIO 's products are using CALLISTO™

- ZEPHYR & ZEPHYR ESR: Size, shape and sieves correlation for powders 20 microns - 3 cm
- OCCHIO 500nano & 500nanoXY: Size and shape 0.4 µm up to 3 mm in dry and wet method
- FC200M, FC200S, FC200S+: counting, size and shape for particles in suspension, emulsion and foam analysis
 - OCCHIO SCAN600: For quality control (particle size >2 µm)