# Tutorial PowderShape

PowderShape is a powerful measurement system that reports you the true geometrical dimensions of your particles, for example size and shape distribution. The tutorial introduces the reader to the work flow and some features of the PowderShape software.
The system consists of the PowderShape software and a scanner (the type of scanner you need depends of the size range of your particles).

## Work flow

You have your sample and you know in what size range you want to measure. Let's start.

Example: Scanner: Reflecta Proscan 7200 dpi; selected size range: Particles, 20-200 μm

1. Prepare the particles on the slide frame.

2. Scan the sample.

3. Select profile (predefined measure masks).
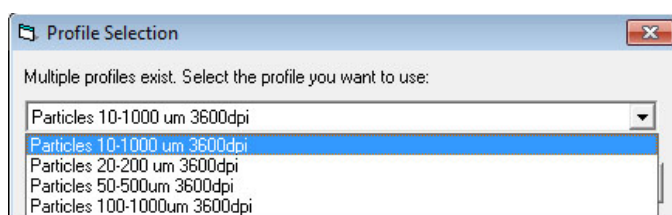


   Advanced users: Select measure mask. See detailed information "Measure masks" below.

4. Enter the details to be included in the report in the input fields of the PowderShape software.

5. Press "Measure": Executes the measurements and opens the Interactive Reporting System. It enables to make pdf reports, raw data exports or opens the Excel based Q-chart database.

6. Print or save the chosen report type.

**Measure masks (advanced users)**

To choose the right measure mask press the "Select button" and the "Measurement Setup" window appears. Six categories exist in order to help you choose among the available measure masks. Usually it is sufficient just to select the categories "Sample type" and "Resolution" to find out the appropriate mask. A measurement needs a variety of measurement parameters, checking limits and report parameters. All these parameters are collected in the entity called measure mask.
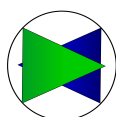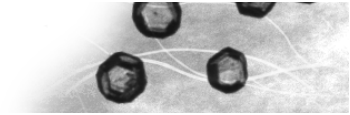
## Interactive Reporting System

The Interactive Reporting System has many reporting capabilities and allows to customize the histograms and measurement reports. The button "Generate output" creates the pdf reports, raw data exports or opens the Excel based Q-chart database.

To save the report settings go to "File" and choose "Save current settings as default for profile".
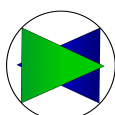
*GUI and Interactive Reporting System*
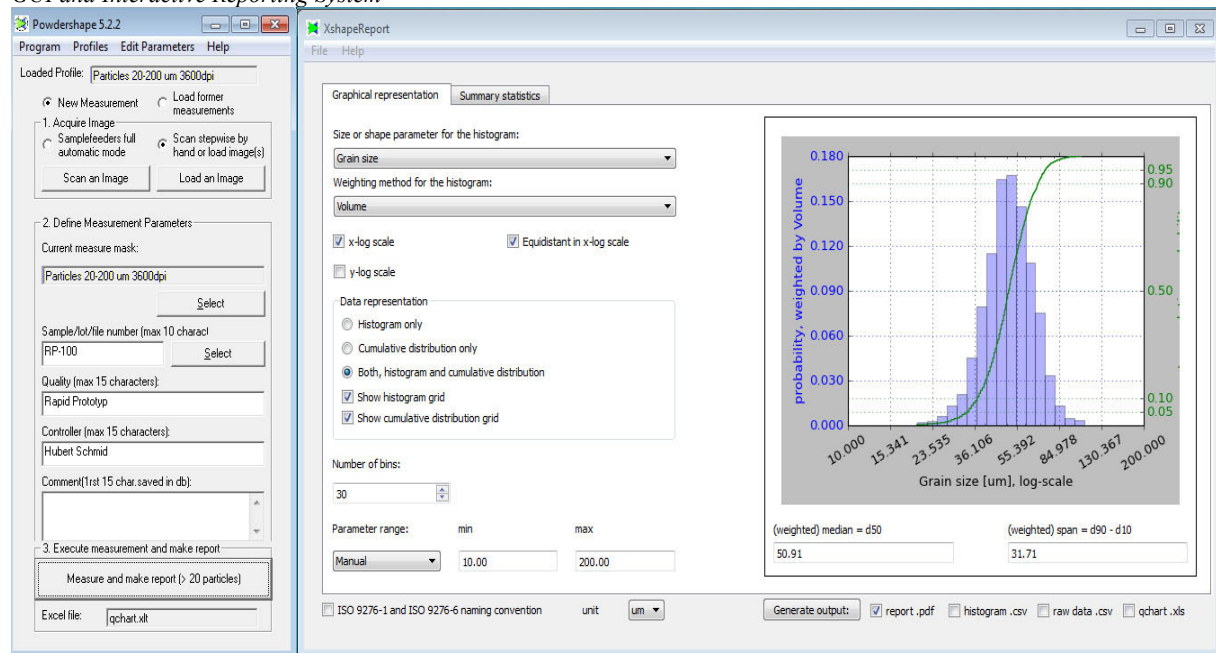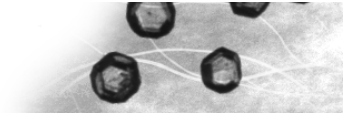


*Typical histogram representation in the pdf report*

**Summary statistics, weighted by Volume**

| | wt-mean | wt-std |
|---|---|---|
| Grain size, um: | 52.17 | 12.51 |
| Convexity: | 0.9052 | 0.0191 |
| Crystallinity: | 1.0616 | 0.0278 |
| Ellipticity: | 1.4081 | 0.2576 |

**Grain size, weighted by Volume**
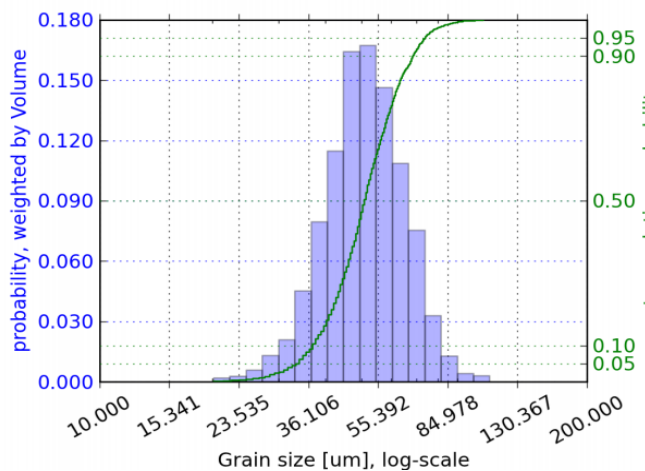


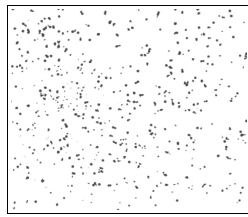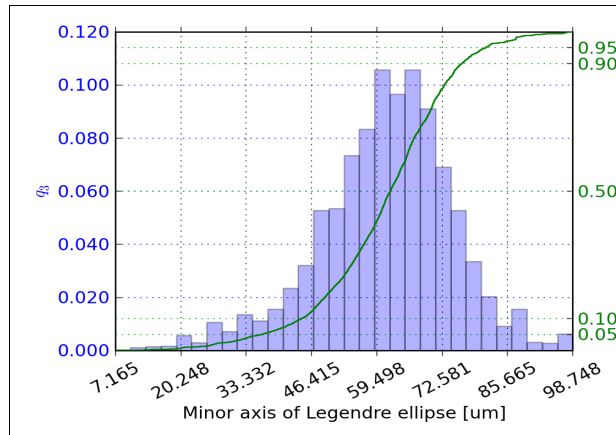| % | wt-percentiles |
|---|---|
| 0 | 20.1647 |
| 5 | 34.1909 |
| 10 | 37.0449 |
| 50 | 50.9133 |
| 90 | 68.7524 |
| 95 | 74.0898 |
| 100 | 105.7445 |

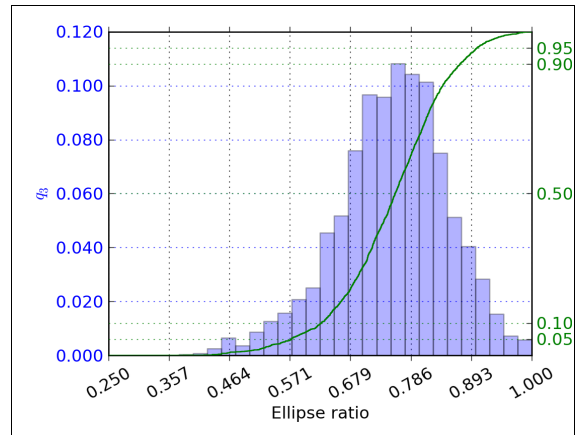Example: Size and shape measurement of WOKA powder (with PowderShape MF)
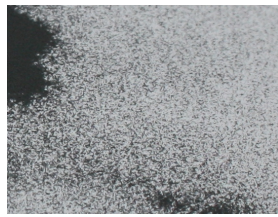


WOKA (30 - 50 μm)



←——— 3,5 mm ———→



Histogram of size measurement



Histogram of shape measurement