

Interactive quantitative results

Usage guideline

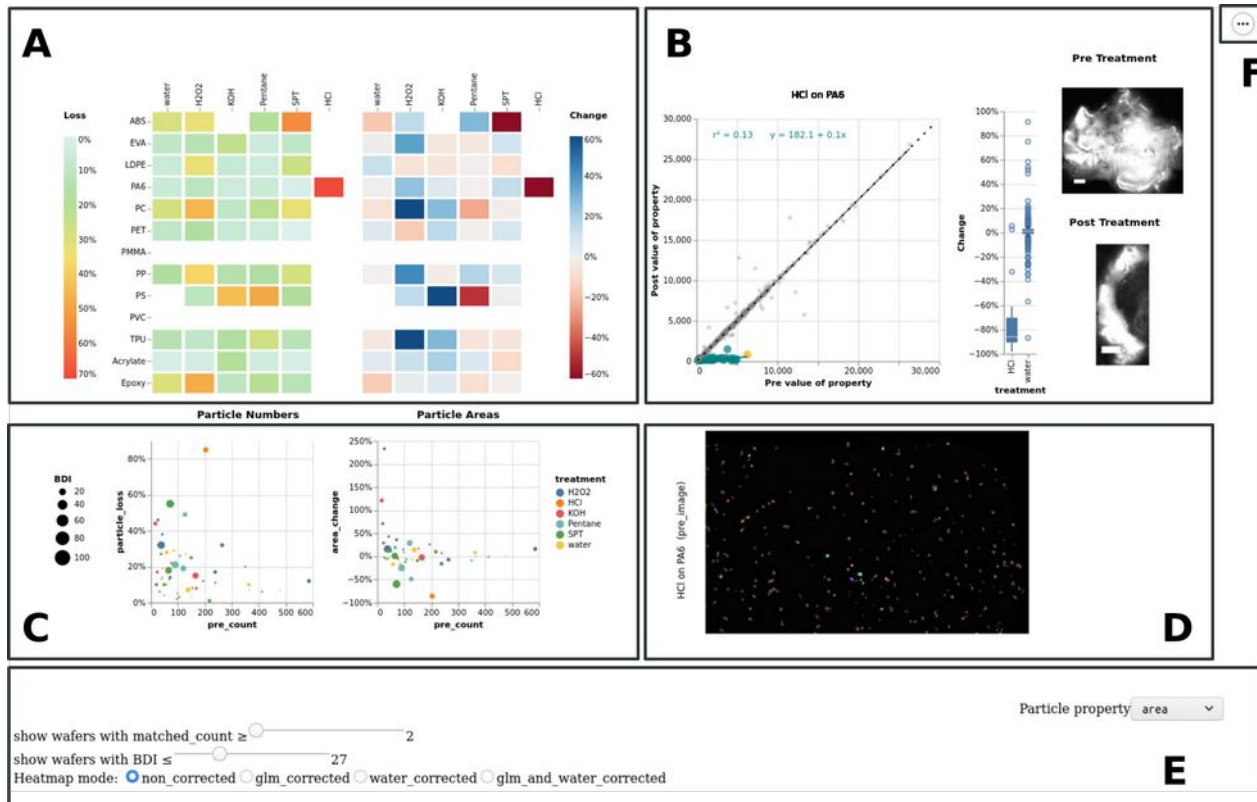


Figure 1: The panel of the interactive figure consist of 4 main plotting areas (A - D) and 2 control areas (E, F)

Area A – Heatmaps of quantitative changes on wafer level

Content: Relative changes on particle numbers (left side) and mean particle area (right side) as obtained from the image analysis. Changes are shown in percent of the matched values to pre-treatment values. In GLM-corrected mode, significant changes that exceed the 95% prediction interval of the negative controls are marked by an asterisk.

Interactions:

- mouse over →
- click →
- double click →

see tooltips like wafer name, exact data values and auxiliary information
 select a wafer to display its data details in the area B and its images in area D
 remove wafer from display (hold down shift key to remove several), double click in space between wafers to bring back removed ones

Area B – Pre- / post-property plots of individual particle data

Content: The property selected in *area E ‘Particle property’* is shown in a pre-to-post comparing scatter plot for all particles that could be matched between the pre- and post-treatment image of the wafer selected in *area A*, with the name of the polymer and treatment written above. Depending on the property selected for display in *area E ‘Particle property’*, units are μm^2 , μm and 8bit image grey scale values for area, perimeter and intensity, respectively. Points below the identity line (black dashed) indicate particles with a value decrease after treatment, points above a value increase, respectively. A linear regression is fitted through all available data points, the equation and r^2 is shown at the top. Grey points show the water treatment of the same polymer (negative control). Box plots to the right summarise the spread of values for the current selection and the corresponding water control. Further to the right snippets show selected individual particle images extracted from the full wafer images. Scale bars are of 10 μm length.

Interactions:

mouse over → tooltips show exact data values and particle IDs, the data point closest to the hovering mouse is selected for display of the particle images as snippets on the right side

Area C – Changes VS. confounding factors

Content: Relative changes on particle numbers (left side) and mean particle area (right side) as scatter plot against total number of particles available for analysis per wafer (pre_count or also named n_{pre} in the paper) with point size encoding the wafer’s background distortion index (BDI) as a measure of image quality ranging from 0 to 100 for highest to lowest quality.

Interactions:

mouse over → tooltips on the point hovered above are shown and only points of the same polymer type are now focussed

scroll → zooming along the X and Y axes

click & drag → panning the view

double click → reset zoom and pan

click → elements of the treatment legend can be clicked to only highlight points of the selected treatment, hold down shift for multiple selection, click inside the legend but not on an entry to reset selection

Area D – Wafer image view

Content: Microscopic DIC mosaic images of the wafer selected in *area A*. Name and state are shown on the left side. Particles are overlaid with a random colour when they were matched between the pre- and post-treatment image. They are outlined with a red stroke when they were detected in either pre- or post-treatment image but could not be matched.

Interactions:

double click →	switch from pre-treatment image to post-treatment image
click →	return to pre-treatment image

Area E – Control switches

Interactions: Sliders set filter values on particle numbers and BDI, to hide wafers in *area A and C*, that have high influences of confounding factors. Initial settings are on no filtering for particle numbers and BDI filtering at 27.

Radio buttons allow to display data in raw type (uncorrected) or corrected by GLM or a subtraction of water control values or both in combination.

A dropdown menu on the right lets the particle property displayed in *area B* be selected.

Area E – Export and source data

Interactions: A menu button allows for saving the current state of the figure as a static image and viewing the underlying data sources.