BOIN
scientific software

WAFERMAP for Windows

APPLICATION NOTE 4: Visualizing Tool „Fingerprints"

So called tool „fingerprints" may be obtained calculating the average of the measured data for all wafers of one lot. This method can be applied to almost every process/ metrology equipment. It is necessary to run several wafers (e.g. one lot) under identical conditions and to measure the according film property using the same recipe. When calculating the average map all wafer-to-wafer variations will be filtered automatically, if the number of maps is large enough.

This method may be applied to all processes, which are influenced by statistical variations from wafer-to-wafer. One example is Rapid Thermal Oxidation. Here, the oxide thickness map can be disturbed by particles, which cause higher oxide thickness in a small spot around the particle.

Another example may be the metrology tool itself, if measurements cannot be done very reproducible. In such cases measurements may be repeated several times and an average map from these measurements may be calculated, representing the „correct" map.

WAFERMAP for Windows offers this averaging as part of the SPC tool.

Example:

Fig. 1 shows the browser with 14 loaded files. In WAFERMAP for Windows select „SPC" → „File"→ „Add File to SPC-List" → choose the specific file format and mark the files to be loaded.

The averaging will give the result, which is shown in Fig. 2. In WAFERMAP for Windows select „SPC Operations" → „Stacked Map" → select all files or specific ones → click on „Stack Maps" → click on „OK".

A more detailed analysis of this map can be done after double clicking on the shown preview. This will load the file into the WAFERMAP for Windows analysis area as shown in Fig. 3.
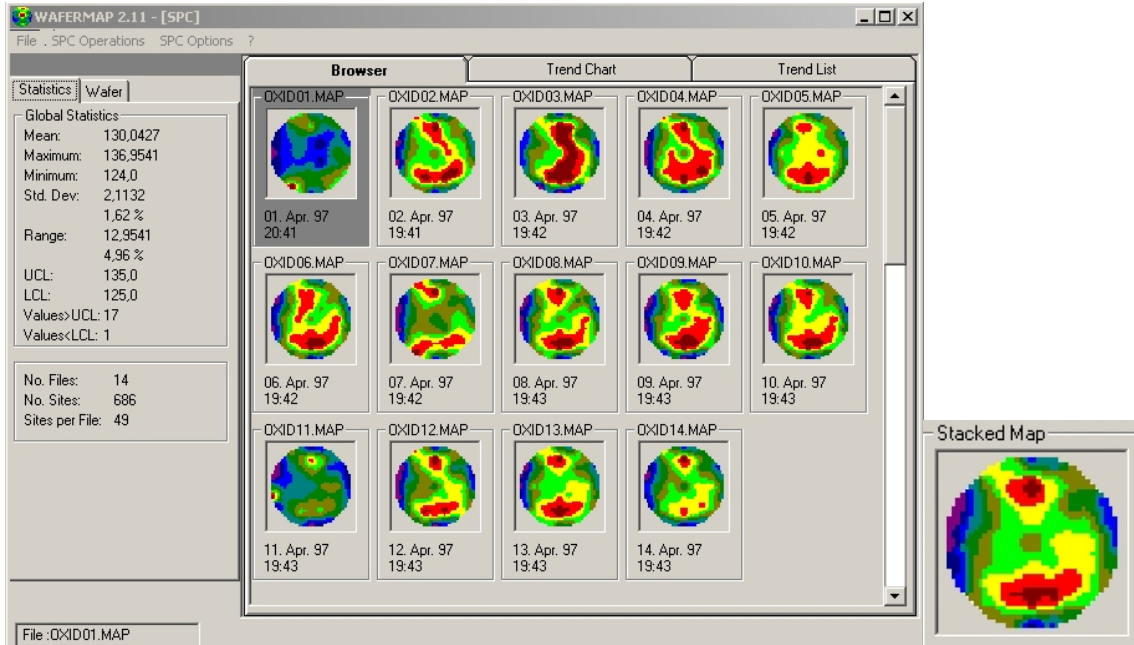
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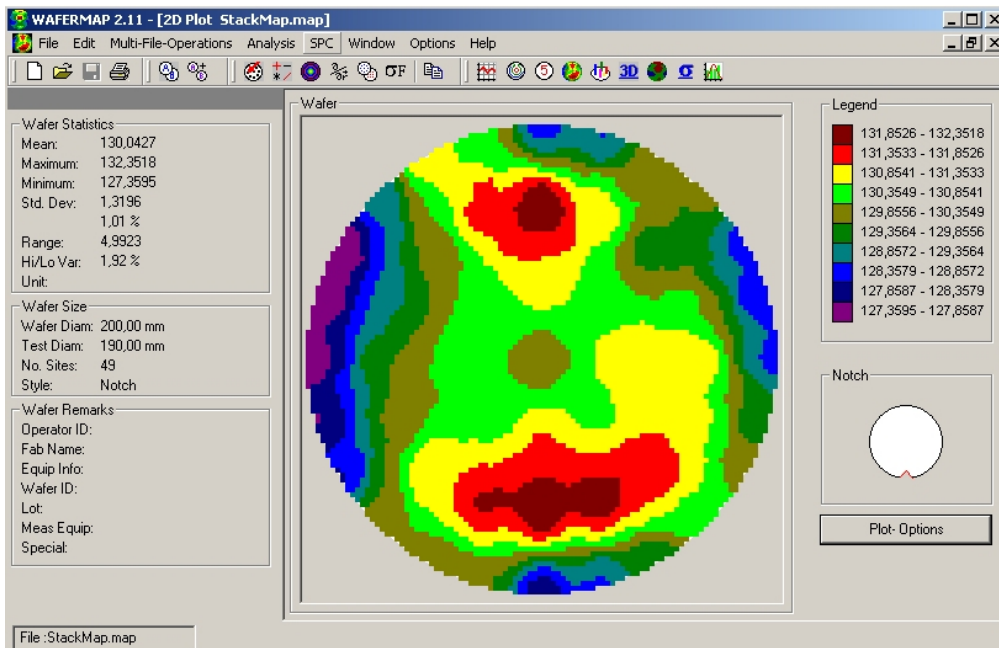
Figures:

Fig. 1

Fig. 2

Fig. 3