

- **Versatile**
- **Intuitive**
- **Open**
- **Full Automation**

SCANTOOL
SPM SOFTWARE



Danish Micro Engineering A/S
DME NanoTechnologie GmbH

ScanTool™, versatile, intuitive and open

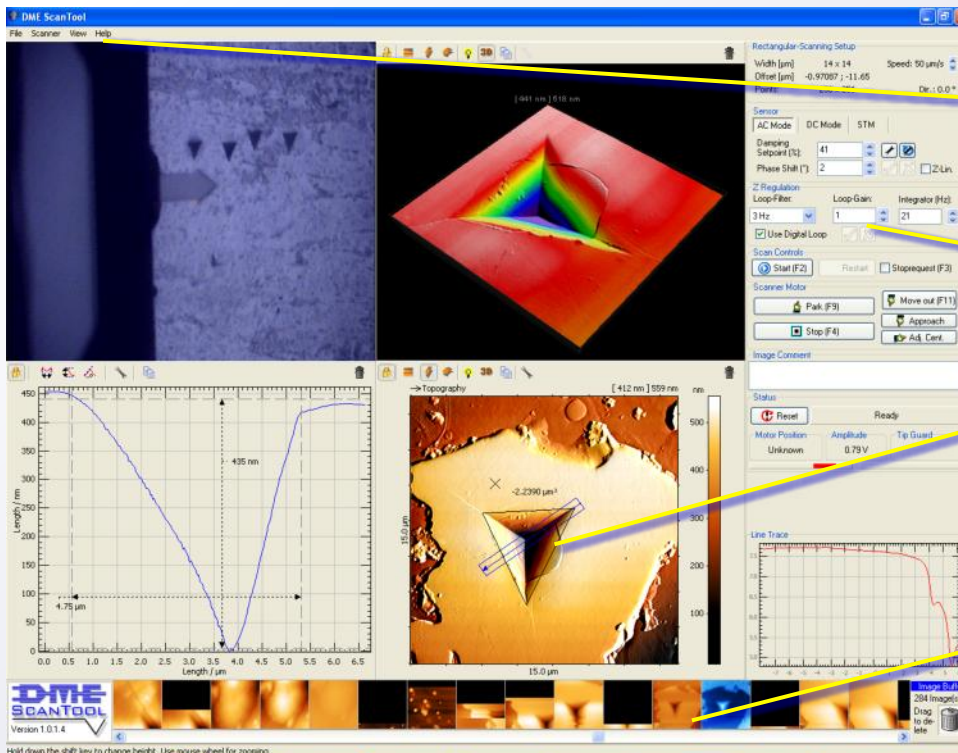


The new DME SPM Software "ScanTool" combines in itself the experience of decades of software design and SPM development. The main focus point for the design was highest efficiency through accelerated workflow and user defined automation procedures. Intuitively organized control panels, full data and command access and multiple support functions guarantee maximum output for users of all experience levels. The open design also enables our programmers to implement customer specified functions as automated scanning procedures with report generation or operating interface for combined measurement systems.

The Layout

The ScanTool user interface was designed to meet highest standards in flexibility and workflow. All relevant functions to operate the SPM are located on the main window and are visible all the time. More advanced image treatment or automation functions are not more than a "click" away. Intuitive operation of the SPM is supported by the division of the user interface into different functional sections.

Through this organized layout, SPM novices are able to get used to the software and the operation of the SPM in a small amount of time. Experienced users will enjoy the direct and quick access to all common functions and image data, and the abilities to automate the system.



Menu: Provides access to more advanced scanning, and data logging functions.

Control Panel: All major settings to operate the SPM can be accessed here.

Image Panels: SPM scans, light microscopy images, and spectroscopy curves can be displayed and edited. The number of panels can be varied and adapted to the screen size.

Image Buffer: Saved SPM scans, optical and other images and its data are automatically stored here, and are accessible by simple drag-and-drop operations.

Operation assistance

Implemented functions support the user to reach his main goal: High resolution, artifact free, and reliable results. These little helpers guide SPM novices on the way to high quality images and accelerate the learning curve. Experienced users will appreciate the support while conquering most complicated measuring and sample conditions. Additionally, they enable to generate long time measuring routines, characterizing a large number of sample areas. All these functions are selectable one by one and can be activated or turned off by the operator.



Intelligent Approach: Always reach the sample surface! No false approaches and ending up scanning in air without tip-surface interaction!



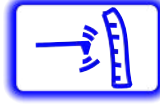
TipGuard: The tip guard watches the tip-sample interaction and protects the tip while scanning. This elongates lifetime and prevents artifacts in the SPM scan.



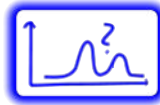
Show area: The cantilever tip outlines the area to be scanned. Enables fast alignment of scan field and area of interest.



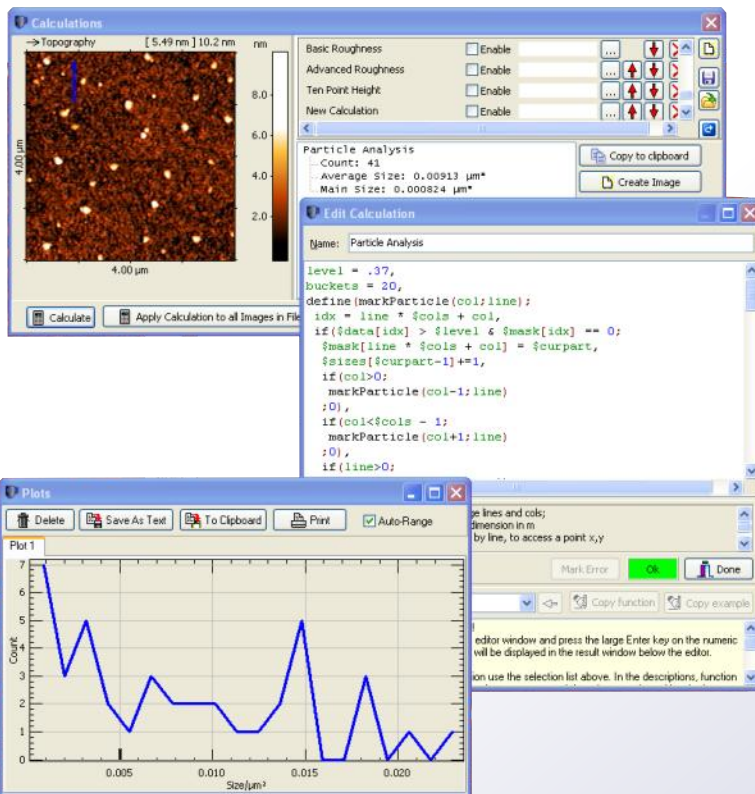
Phase align: Adjusts the phase for maximum signal to noise ratio in phase based measurement modes (phase imaging, MFM etc.).



Amplitude control: Controls and corrects the AC cantilever oscillation if necessary. Enables long measurement routines with hundreds of scans and approaches.



Automatic sensitivity check: Ensures working with the right frequency peak.



Totally transparent and flexible image analysis tools with access to the source code in the "Image Calculator". Shown here as example: Particle analysis

Automation

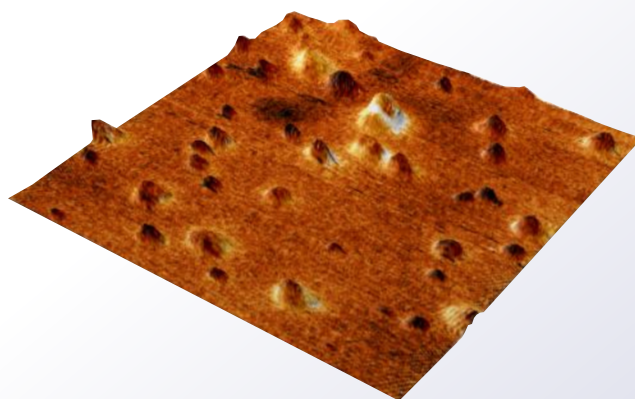
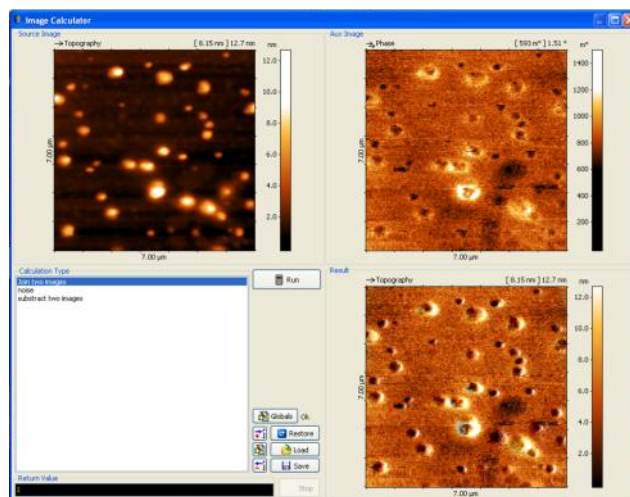
In manual operation, day long measuring sessions are necessary to generate the required data for statistical analysis. Often such trivial activities like adjusting the position of the scan area on the sample require the presence of an operator. The built in "Automator" enables to generate basic and highly complex measurement routines. The "Automator" provides direct access to all instrument and program functions via an easy to learn programming language, which bases on the DME Calculator. The "Automator" enables unknown freedom in the design of experiment specific SPM usage. The possibility to generate GUIs and the "Automation database" allows to store, access, and activate "Automator" programs without handling any line of program code.

The ability to generate and run customer and application dedicated measuring procedures enhances data acquisition to a high level and supports in this way economic efficiency of the system.

Image treatment and analysis capabilities

The application of SPM in diverse fields results in uncounted types of experiments with unique requirements for data treatment and analysis. Therefore, preset and fixed analysis functions in SPM programs of former times are not able to keep up with this development. This is underlined by the number of open source and purchasable SPM analysis programs. With the ScanTool program, DME has again pioneered the way of data treatment by SPM Programs. In contrast to all other SPM suppliers, DME enables the user to generate his own analysis procedures or use the existing analysis tools in the customer database generated by DME or other customers of the DME user community.

- All raw image and spectroscopy data are available and can be treated and analyzed
- Analysis functions can be generated without any limitation
- Open access to the DME user community and DME developed analysis or image treatment tools
- Total control of treatment and analysis functions by accessibility of the source code
- Easiest data export by copy and paste



Channel overlay: The topographical and the MFM image of magnetic nanoparticles are superimposed and presented in 3D. The colouring of the image resembles magnetic properties and 3D structure shows the topographic information.

System requirements

- CPU: 1,8 GHz, Dual Core recommended
- RAM: 2 GB or better
- Two USB 2.0 ports with a power output of 500 mA each
- Operating system: Windows XP, Windows Vista, Windows 7, 32 or 64 bits
- Display: recommended resolution 1600 x 1080 pixels or higher

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