



# *TA Instruments New Features in NanoAnalyze™ Software*

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## **Notice**

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## **Software Upgrade Access**

The individual instrument software described in this manual is shipped with all appropriate shipments of Nano ITC, Nano DSC and MC DSC instruments. For all previous versions of the software provided with these instruments, upgrades are available via on-line downloads from the TA Instruments website. Contact TA Instruments customer service or your TA Instruments account manager for details.

# Important: TA Instruments Manual Supplement

Please click the [TA Manual Supplement](#) link to access the following important information supplemental to this Getting Started Guide:

- TA Instruments Trademarks
- TA Instruments Patents
- Other Trademarks
- TA Instruments End-User License Agreement
- TA Instruments Offices

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# New Features in NanoAnalyze v3.11.0

## *New Features and Functionality*

- Added option to DSC batch processing to select models that are applied to multiple data sets.
- Added Voigt model, and Voigt model with T Onset for DSC peak fitting.
- Added modeling option to automatically run statistics when a fit completes.
- Improved modeling algorithm.

## *Bug Fixes*

- Fixed tab header flickering in all analysis controls.
- Fixed some graphing issues when using a high-resolution monitor.
- Fixed issue with opening .nitc files if there is no pre-injection baseline.
- Fixed issue with fit not being affected under some conditions when the first ITC data point is excluded either by clicking on the point or clicking on the tool button.
- Fixed crash in ITC Batch processing.
- Fixed issue with changes in continuous titration baseline not updating the areas.
- Fixed issue with final baseline being included with continuous titration areas.
- Software is now FIPS 140 compliant.
- Fixed issue with converting from ITC analysis to Enzyme Kinetics analysis when auto peak detection is enabled. Converting to Enzyme Kinetics analysis now causes injection intervals to be reset.
- Fixed overlay graph tags not changing color when plot color is changed.
- Fixed DSC Reports including some invalid Experiment Parameters to choose from.
- Fixed issue with data being lost in the ITC Modeling Statistics tab after clicking on the Reports tab.
- Fixed issue with data being lost in the DSC Modeling Statistics tab after closing, then reopening the analysis.
- Fixed flickering in the model variables data grid in both the modeling tab and the statistics tab.
- If the model fitting algorithm becomes stuck in a local minimum, it will reset parameters in order to attempt a different minimization pathway.
- Fixed issue with ITC Baseline graph not immediately updating.
- Fixed mouse flickering on ITC Baseline graph.
- Other minor fixes and enhancements.

# New Features in NanoAnalyze v3.10.0

## *New Features*

- Reports for ITC and DSC analysis added.
- Baseline tab Y axis is now labeled “Corrected Heat Rate” when the baseline is subtracted.
- Added Gaussian DSC model with T Onset.

## *Bug Fixes*

- Fixed bug where the dialog was opening with file export selected when exporting graphic image to clipboard.
- Fixed issue with exporting graphics in EMF format where the size of the graphic was too small.
- Fixed ITC integration region boxes showing incorrectly when baseline is subtracted.
- Fixed issue with sudden jump of heat rate at beginning of scan.

# New Features in NanoAnalyze v3.8.0

## *New Features and Functionality*

- Added button to the Data Conversion tab to export experiment info to the clipboard for DSC experiments.
- Full resolution of all imported data is now kept. The Analysis table view displays limited resolution that represents the limits of the instrument and makes the table more readable.

## *Bug Fixes*

- Fixed an error message when opening ITC analysis with area-only data.
- Fixed an issue with integrating areas in continuous titration analysis.
- Fixed an issue with DSC Analysis. If the Conversion Range was changed on the Data Conversion tab and there are Tm regions selected in the Modeling tab, sometimes the system could crash.
- Guardian notifications are now stored in a location that is not specific to any single user.
- Fixed MHC volume field and PPC step size field being imported with incorrect decimal point in some regions.
- Fixed issue with displaying numbers in scientific notation when exporting to Excel and the regional decimal point is a comma.
- Fixed issue with ITC continuous titration losing user-configured baseline.
- Fixed issue with warning that an ITC blank is in old format when it is not.
- Fixed issue with ITC Analysis where the Statistics tab was not being updated after migrating legacy models to new models.
- Fixed issue with ITC Analysis where lowering the number of areas to analyze caused a crash.
- Fixed a bug that allowed a user to overwrite a data file when Guardian is enabled.
- Users can no longer inline edit the raw data table in each of the analysis methods.

# New Features in NanoAnalyze v3.7.8

## *Bug Fixes*

- Fixed an error message when opening ITC analysis with area-only data.
- Fixed an issue with integrating areas in continuous titration analysis.

# New Features in NanoAnalyze v3.7.5

## *New Features and Functionality*

- Updated Gas Constant R from 2010 CODATA recommended value of 8.3144621 J/mol\*K to 2015 value of 8.3144598 J/mol\*K.
- Changed “Normalized Fit” label to “Enthalpy and Fit” in ITC overlay graph.
- Improved look of ITC and ITC batch analysis.

## *Bug Fixes*

- Fixed an issue with incorrect variable values when fitting the Enthalpy Screening model to more than four data points.
- Fixed an issue with not allowing the user to delete ITC integration regions without first adding a region.
- Fixed Dimer Dissociation model calculating  $dS$  incorrectly. Added  $dG$  to calculated variables.
- Fixed ITC analysis issue with first injection volume being incorrect.
- Fixed statics page not showing models and model variables.
- Fixed an issue with changing heat rate units in ITC analysis after a baseline node has been manually moved.
- Fixed flickering in tab page headers.
- Fixed issue with not smoothing an ITC fit when a blank model is being used in addition to a model that can be smoothed.
- When exporting overlay graphs to Excel or to text, the X column is included for both sets of data when a plot contains two Y columns. For example “Q and Fit.”
- Fixed an issue with a user manually updating the model variable table.



# New Features in NanoAnalyze v3.7

## *New Features and Functionality*

- Introduced Guardian, an implementation of 21 CFR Part 11.
- Added an option in the Export Graphics (to clipboard or file) dialog for rendering images in Quality or Compatibility mode.
- Added Confidence Interval and Confidence Level to modeling tab and overlay graphs. Statistics trials must be run before numbers will display.
- Added Enthalpy Screening ITC model.
- Added 2-site and 3-site Sequential ITC models.
- In ITC Batch Processing, if there are no varying independent variables, the fit criteria are now ignored. This is useful for the Enthalpy Screening model which is used only for calculations rather than model fits.
- Model Fit graph, ITC Experimental Design, and Overlay graphs now increase the number of graph and fit points drawn, if less than 100. The number of points in the constructed curve is increased (raw data points are not affected). This is for the cosmetic purposes of smoothing the appearance of the fitted curve.
- Added the option to display or hide model variable statistics (confidence interval and confidence level) in the model variables table in the Model Fit tab of ITC and DSC analysis.
- Added the ability to easily add multiple sets of data to an overlay graph.

## *Bug Fixes*

- Fixed a bug in DSC analysis encountered when opening a .csc file that contained legacy models and used Calorie units. Models could not be added under those conditions.
- Fixed a bug when exporting data from ITC batch processing to Excel or text.
- Fixed an issue with ITC continuous data analysis when the raw data interval is irregular.
- Improved the interpolation of buffer data in DSC analysis. May improve noise levels in the data.
- Fixed an issue with DSC analysis where changing the Baseline Range in the Data Conversion tab to a wider range, and a model is already selected in the modeling tab, causes a crash.
- Fixed an issue in ITC analysis where the first peak may have some error in integration.
- Fixed a bug in the Model Editor where under some conditions, changes to a variable were not persisted.
- Improved model fitting algorithm.
- Fixed an issue with selecting graphical DSC Tm regions in model fitting.
- Statistics data is now persisted.

- Fixed an issue in Overlay graphs where graph colors and line types were not being persisted correctly when some items were deselected (unchecked.)
- Fixed an issue in Overlay Graph where it was possible that the data name was not correct in the Model Variable table if there was more than one set of data being plotted and at least one of the data did not have a model fit.
- Updated the ITC Cooperative model.
- Fixed an issue with setting access rights for standard users to the TA Instruments program data folder.
- Fixed an issue with  $\mu$ Calorie units not working in ITC batch processing.
- Improved the interpolation of DSC Scan Blank, resulting in reduced baseline noise.
- Fixed an issue in Overlay Graph where it was possible that the data name was not correct in the Model Variable table if there was more than one set of data being plotted and at least one of the data did not have model fit.
- Changed Confidence Interval values to be formatted the same as the corresponding variables.

# New Features in NanoAnalyze v3.6.0

## *New Features and Functionality*

- Added data normalization to mass in DSC analysis.
- Added option to ITC batch processing where a preview graph of a set of variable values changes to a scatter plot after a user-defined number of values is selected.
- Added a Total Injection Volume field to the Area tab of ITC Analysis, for Continuous Titration only. The Default Injection Volume field is now grayed out and read-only with Continuous Titration analysis.
- Added appropriate units to some variables in the DSC Gaussian model. Fixed an issue with integration width in ITC batch processing. The first time “run” was clicked, the fit was not executed.

## *Bug Fixes*

- Improved user interface responsiveness when running an ITC batch update.
- Improved the look of the variable preview graph when many values are selected and viewed as a bar graph.
- Fixed a bug in ITC Analysis where a crash could occur when loading a raw data file that contains less than two data points.
- Improved automatic baseline detection in ITC Analysis.
- Fixed an issue in ITC Analysis when analyzing a Continuous Titration. The injection volumes in the Area tab were changed when clicking between an overlay graph and the analysis.
- Fixed an issue where dropping a Scan Blank in a DSC Analysis caused a Windows exception.
- Improved memory management.
- Fixed issue with exporting graphs where some graphs appear flattened.
- Updated code for setting user access rights to settings and default methods path.
- Fixed ITC batch processing issue with data that is marked Exotherm Down. Whenever an ITC batch was opened, the fit for data that is Exotherm Down was marked as invalid.
- Fixed a DSC analysis issue where a scan blank was subtracted from the data incorrectly.
- Other minor bug fixes and improvements.

# New Features in NanoAnalyze v3.5.10

## *New Features and Functionality*

- Added data normalization to mass in DSC analysis.
- Added option to ITC batch processing where a preview graph of a set of variable values changes to a scatter plot after a user-defined number of values is selected.
- Added a Total Injection Volume field to the Area tab of ITC Analysis, for Continuous Titration only. The Default Injection Volume field is now grayed out and read-only with Continuous Titration analysis.

## *Recent Bug Fixes*

- Fixed an issue with integration width in ITC batch processing. The first time “run” was clicked, the fit was not executed.
- Improved user interface responsiveness when running an ITC batch update.
- Improved the look of the variable preview graph when many values are selected and viewed as a bar graph.
- Fixed a bug in ITC Analysis where a crash could occur when loading a raw data file that contains less than two data points.
- Improved automatic baseline detection in ITC Analysis.
- Fixed an issue in ITC Analysis when analyzing a Continuous Titration. The injection volumes in the Area tab were changed when clicking between an overlay graph and the analysis.
- Added appropriate units to some variables in the DSC Gaussian model.
- Fixed an issue where dropping a Scan Blank in a DSC Analysis caused a Windows exception.
- Improved memory management.
- Fixed issue with exporting graphs where some graphs appear flattened.
- Other minor bug fixes and improvements.

## **New Features in NanoAnalyze v3.5**

### *New Features and Functionality*

- Automatic baseline/integration region detection is included. The auto-detect setting is enabled by default.
- Significantly improved data load times for ITC and DSC data, especially when loading a large number of data files.
- Added a “Fit” column to the ITC batch processing table for graphically viewing the fit.
- Hovering over the header column of any variable in the ITC batch table now displays the mean, standard deviation, and count as values besides graphically.

- Hovering over the “Graph” column in the ITC batch table now displays the mean and standard deviation values for each variable, under the corresponding bar.
- Only selected rows in the ITC batch table will be included in the variable statistics bar graphs. Any rows that have an error or need to be refreshed are also not included.
- There are now three ways to construct integration widths in ITC batch processing:
  - **Auto:** Peaks and integration widths are automatically detected. This option is automatically selected when adding data to the batch table if the “Auto Detect Integration Region Width” option is checked in the default ITC analysis settings. The only exception to this is when data is already analyzed, as described below.
  - **Manual:** The batch update process does not attempt to change the integration widths. The user must manually adjust the integration widths with normal analysis. This option is automatically selected when adding files to the batch that have already been manually analyzed. The injection width is used if the user does not manually update the integration intervals when a file that has not been analyzed is added to the batch. If the user manually adjusts anything in the baseline tab when manually analyzing ITC data, the integration width type will automatically be changed to “Manual” in the batch table.
  - **Fixed:** A fixed integration width (from the Fixed Integration Width column) is applied to each injection.
- If any item in a row of the ITC batch table is changed by the user (such as the integration width,) but has not been analyzed, a “refresh” icon appears in the far left column where the green check and warning icon appear. In this case, the entire row is highlighted in yellow and none of the variable values are used in the statistics bar graphs.
- The ITC batch “refresh” button icons have been replaced with the standard “play” icon.
- Clicking on the ITC batch “play” button will now only attempt to refresh (analyze) rows in the batch table that have an error (yellow triangle icon) or need to be updated (refresh icon.)
- Clicking on the ITC batch “play selected” button will now force a refresh of all selected rows in the batch table.
- There are now two ITC batch processing tool strips. Buttons have been arranged from left to right in the order they will likely be used.
- Legacy models are no longer supported. When opening an analysis that contains legacy models, Nano-Analyze will give the user a choice to either attempt replacement of legacy models with new models, or simply remove the legacy models. Data file that contain legacy models that were created before NanoAnalyze v2.3.2 will not have a choice. In that case the models are removed with a warning dialog.

## *Recent Bug Fixes*

- Fixed DSC analysis modeling issue when using ucal/s units.
- Fixed Enzyme Kinetics issue where pre-injection “baseline” was sometimes set to zero.
- Fixed reloading a DSC analysis with regional settings that use the comma symbol for the decimal point.

- Fixed Excel, text, and clipboard text output from DSC modeling.
- Fixed ITC analysis always adding a baseline handle at 180 seconds.
- Several other minor functionality improvements and bug fixes.

## **New Features in NanoAnalyze v3.4**

### *New Features and Functionality*

- ITC Batch Processing has been added. This facilitates automatic processing of the large data sets generated by the Affinity automated ITC.

### *Recent Bug Fixes*

- When the decimal symbol is a comma, the absolute min/max concentration limits could not be changed in Experimental Design.
- Modeling Tab: Fixed residual units not correct until running a fit.
- Modeling Tab: Fixed disappearing Y-axis label when NanoAnalyze window size is small. This was done by removing the axis label “Residual” and moving “Residual” legend items to just above the residual graph.
- Fixed Enzyme Kinetics issue where pre-injection “baseline” was sometimes set to zero.
- Fixed reloading a DSC analysis with regional settings that use the comma symbol for the decimal point.
- Fixed Excel, text, and clipboard text output from DSC modeling.
- Fixed ITC analysis always adding a baseline handle at 180 seconds.

## **New Features in Nanoanalyze v3.3.0**

### *New Features and Functionality*

- Added enzyme analysis functions.

## **New Features in NanoAnalyze v3.1.2**

### *New Features and Functionality*

- Added Optimizer feature to the ITC Experiment Design feature.

- Added Gaussian model into the DSC models list.
- Added overlay plot alignment, stacking, rotation, filtering.
- Added constant, linear, and exponential decay overlay fit functionality.
- Added support for changing exotherm direction in DSC analysis. Also added property to change exotherm direction without modifying data.
- Added **Fit Target Data and Fit** axis option for DSC overlay.
- Added option for resetting ITC baseline and integration regions to original.
- Added option for visually sizing ITC integration region.
- Old .csc files that do not have a scan rate column are now able to show scan rate in overlay graphs.
- Added model variable range slider.
- Added options for running integral to DSC overlay graph.
- When exporting graphics from the modeling tab or an overlay graph, the exact size and shape is shown in the preview pane of the export dialog. Optionally, the user can choose to always use a specific aspect ratio. Added DPI and Width options. Added SVG and TIFF formats. Improved export quality.
- Overlay Graph:
  - Excluded points show/hide functionality now works when there is no fit.
  - ITC fits no longer appear as a line at  $y=0$  when there is no fit. (This affects **Fit**, **Normalized Fit**, and **Q and Fit**.)
  - The graph export dialog now previews the graph exactly as it appears in the analysis. The trade-off is that the user may need to scroll horizontally and/or vertically in the preview pane. However, the export dialog box now defaults to opening full screen, so this should not happen often.
  - There is now a check box in the graph export dialog that allows the user to always use a specific aspect ratio. If this is selected, item C) is no longer true.
  - The following DSC Y-axis items now always plot over the entire temperature range:
    - Raw Heat Rate
    - MHC data
    - Corrected Heat Rate
    - Scan Rate
    - Pressure
  - The following DSC Y-axis items now always plot over the baseline region:
    - Constructed baseline
    - Fit
    - Residual
    - Baseline Subtracted

- Data and Fit
- Running Integral (both MHC and raw heat rate)
- Fixed DSC residual always plotting temperature for the Y axis.
- Modeling:
  - The same new graph export functionality as in the Overlay Graph is implemented.
  - The user now cannot type a model variable value outside of the min/max range. The min value now must be between absolute min and the variable value. Max must be between the variable value and absolute max.
  - Fixed some potential issues with the variable value slider, and the min/max slider.
  - DSC residual is now plotting correctly and being stored correctly.



## Recent Bug Fixes

- Fixed incorrect interpretations of decimal points in the ITC/Analyze/Areas tab when data is stored under on MS Windows Regional setting but analyzed with a different setting.
- Overlay selection handles are now displayed across graph range rather than the entire data range. This helps when zoomed in on data.
- Fixed integration baseline tab in DSC analysis so that the integration region indicator bar has a lower precedence than the fit handles. In previous versions, it was impossible to “grab” the handle if it was in the area of the integration region bar.
- Fixed **Corrected heat rate** options in DSC overlay so that both it and MHC are not mutually exclusive. Previously, if the DSC data was converted to MHC, the corrected heat rate could not be displayed on the overlay graph. The fix is implemented by adding a corrected heat rate column to the data table. Therefore, if the data has been converted to MHC, the user must open the analysis once in order to create the column so that corrected data will display in the overlay graph.
- Fixed DSC cooling peaks not integrating correctly in NanoAnalyze.
- Changed **Exo Up** functionality in ITC. It now matches DSC exotherm direction.
- Fixed DSC analysis bug where the calculated baseline is not subtracted after opening an analysis and clicking directly on the Modeling tab.
- Fixed an issue in ITC analysis where changing the Y axis (units) can corrupt the baseline if the integration region is smaller than the injection region.
- ITC Experimental Design now uses the label **Injection Volume** rather than **Default Injection Volume**.
- Fixed crash when creating a region in the DSC integration baseline editor that did not include enough points for a least-squares fit. This affected sigmoidal baseline, polynomial baseline, and Intersection regions.
- Updated **Multiple Sites** model.
- Fixed a problem that would prevent the data from some experiments from being displayed in overlay graphs if certain font sizes were selected.

# New Features in NanoAnalyze v2.4.1

## *New Features and Functionality*

- Added option to ITC, DSC, and PPC text import for exotherm up or down.
- Added Temperature field to ITC Experiment Design for use with calculated variables.
- Added support for ITC  $\mu$ Calorie units.
- Added option for default ITC and DSC analysis units.
- Added units to Y-axis units in overlay graphs that did not previously specify units. The units follow the selected analysis units.
- The signal offset at the start of an experiment in ITCRun can be viewed in NanoAnalyze.
- Fixed bug in overlay graph functionality where dragging fit data would cause a crash. Also, fit data showed double the number of legend entries.
- MCDSC data and text-imported DSC data are automatically converted to exotherm down when loaded for DSC analysis.
- Added exotherm direction symbol to relevant ITC and DSC graphs.
- Previously, DSC data had to be analyzed either manually or by batch processing before scan rate could be selected in an overlay graph. With this version, it is not necessary.
- Other minor enhancements.

## *Recent Bug Fixes*

- Fixed model variable font size not being persisted.
- Fixed calculated model variables not updating in editable variable table.
- Fixed baseline updating when units are changed in DSC analysis.
- Fixed a small accumulation error in ITC Normalized fits in overlay graphs.
- Fixed an issue where ITC 4200 files could not be loaded.
- Other minor fixes.

## **New Features in NanoAnalyze v2.3.6**

### *New Features and Functionality*

- Text import functionality.
- Accepts the new data file format of MCDSCRUn, starting with MCDSCRUn v2.9.18.

## **New Features in NanoAnalyze v2.3.2**

### *New Features and Functionality*

- Added several features to the Overlay Graph functionality to allow for publication quality data graphs:
- Added several options for changing the appearance of overlay graphs.
- Improved the available options for exporting data from an overlay graph. The data can be exported as text, an Excel worksheet, or in several graphical formats.
- Added minor updates to the appearance of NanoAnalyze. Some text fonts and icons are slightly larger.
- Improved stability.
- Other minor improvements.

## **New Features in NanoAnalyze v2.2.0**

### *New Features and Functionality*

- DSC batch processing functionality has been added.
- Added DSC and ITC info as a tooltip when hovering the mouse over an item in the tree control.
- With the exception of the PSV value, there are now no default MHC numerical values for DSC analysis.
- Compatible with Microsoft Windows 7 32-bit and 64-bit.

### *Recent Bug Fixes*

Fixed issue with Data Views graphs persisting.

# New Features in NanoAnalyze v2.1.13

## *New Features and Functionality*

Added Cooperative binding model

# New Features in NanoAnalyze v2.1.9

## *New Features and Functionality*

- Updated look and feel.
- Most graph tables can now be dragged by the mouse.
- Adding a file to the data set now does not close the current analysis method.
- Overlay graph zoom state is now persisted.
- Remove mol unit from n variable in ITC models.
- Other new functionality.

## *Recent Bug Fixes*

- Fixed an issue where the user could not open an analysis method under some conditions, such as when the user cancels closing the application.
- Fixed Experiment Design starts at second point.
- Fixed renaming an experiment does not persist after moving the experiment to a different folder.
- Fixed overlay graph not loading under certain circumstances.
- Fixed defining a DSC baseline temperature region (the software would sometimes crash if the mouse was single-clicked instead of click-and-drag).
- Fixed issue that would arise when attempting to save files to removable memory media that were no longer present (the software could crash).
- Other minor bug fixes.

# New Features in NanoAnalyze v2.1.6

NanoAnalyze v2.1.5 software is the latest addition to TA Instruments products for its NanoSeries instruments. This package is an enhanced data analysis package for analyzing ITC and DSC raw data sets.

NanoAnalyze software provides analysis support for and is compatible with the raw data files from the following instruments:

- NanoITC<sup>2G</sup>
- Nano ITC
- Nano DSC
- Multi-Cell DSC (protein analysis)



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**NOTE:** If running a beta version of NanoAnalyze, select the **Start** menu > **Settings** > **Control Panel** > **Add or Remove Programs**, and remove the software from your system before installing a new version. If you are unsure of whether or not you are running a beta version of NanoAnalyze, remove the software. After removing the software, proceed with the instructions in the *NanoAnalyze Getting Started Guide*.

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## *New Features & Functionality*

- Added modeling statistics.
- Improved fit performance. (Observed up to 1600% speed increase.)
- When running a fit, the fit graph is now only updated when an improvement in the fit algorithm is encountered.
- Updated existing models for performance and readability.
- Added new models:
  - Competitive Replacement
  - Blank (constant)
  - Blank (linear)
  - Multiple Sites
- Dimer Dissociation
- Confidence Levels of 95.4 and 99.73 in the beta version of NanoAnalyze are now automatically changed to 95 and 99.
- Data files load and save more quickly.

## *Recent Bug Fixes*

- Fixed possible crash when clicking between datasets over a period of time.
- Other minor improvements and fixes.

# New Features in NanoAnalyze v2.0

NanoAnalyze v2.0 software is the latest addition to TA Instruments products for its NanoSeries instruments. This package is an enhanced data analysis package for analyzing ITC and DSC raw data sets.

NanoAnalyze software provides analysis support for and is compatible with the raw data files from the following instruments:

- NanoITC<sup>2G</sup>
- Nano ITC
- Nano DSC
- Multi-Cell DSC (protein analysis)



**NOTE:** If running a beta version of NanoAnalyze, select the **Start** menu > **Settings** > **Control Panel** > **Add or Remove Programs**, and remove the software from your system before installing a new version. If you are unsure of whether or not you are running a beta version of NanoAnalyze, remove the software. After removing the software, proceed with the instructions in the *NanoAnalyze Getting Started Guide*.

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## *New Features & Functionality*

- Multiple individual graphs can be displayed in a single overlay graph.
- Individual **Variable Constraint** and **Fit Tolerance** slider tools are available for aiding in fitting complicated data sets.
- New fit option tool for stopping fit iterations at any local minimum is added.
- The best fit is now remembered while running a fit. When a fit stops for any reason, the best fit is automatically used.
- DSC analysis now integrates peaks for polynomial baselines (fit baseline object) in the **Baseline Integration** tab (now shows entropy, enthalpy, and TMax like combination baseline).
- Improved file display and multiple file handling with NanoAnalyze is added.
- Individual models available in NanoAnalyze can be copied and edited.
- ITC and DSC experiment design data is automatically retrieved from raw data files into analysis, e.g., concentrations, comments, and the user running an experiment.

## *Recent Bug Fixes*

- Fixed potential crash of program when selecting among experiment steps.
- Fixed potential crash when program is closed unexpectedly.
- Fixed various memory leaks.

# New Features in NanoAnalyze v1.2.0

NanoAnalyze v1.2.0 software is the latest addition to TA Instruments products for its NanoSeries instruments. This package is an enhanced data analysis package for analyzing ITC and DSC raw data sets.

NanoAnalyze software provides analysis support for and is compatible with the raw data files from the following instruments:

- Nano ITC<sup>2G</sup>
- Nano ITC
- Nano DSC
- Multi-Cell DSC (protein analysis)

## *New Features & Functionality*

- Increased precision through improvement of:
  - Least square algorithm for fitting baselines
  - Decreased noise in DSC blank DSC baseline fit
- Expanded analysis functionality:
  - Added **Residual** and **Standard Deviation** to data fit display
  - Display additional data (S) during analysis
  - Auto NanoAnalyze program initiation when double-clicking on raw data and analysis file (.jet, .scn, .csc file types)
- Added new manually-adjustable slider for setting and adjusting variables within the model fit tab.
- Improved file manager and display system to eliminate conflicting file names.
- Software is more flexible in handling language and dialect settings.
- Improved display of model variables and all graphs.
- Adjusted default model variables to improve fitting speed.

## *Recent Bug Fixes*

- Potential crash of program when selecting among experiment steps is fixed.
- Potential crash when program is closed unexpectedly is fixed.
- Various memory leaks have been fixed.
- Incomplete data copying from modeling raw data table is fixed.
- DSC integration baseline will now auto update when MHC units are changed.
- Fixed inability to handle language setting with a dialect.

# New Features in NanoAnalyze v1.1.0

NanoAnalyze v1.1.0 software is the latest addition to TA Instruments products for its NanoSeries instruments. This package is an enhanced data analysis package for analyzing ITC and DSC raw data sets, replacing the previous data analysis packages CpCalc and BindWorks.

NanoAnalyze software provides analysis support for and is compatible with the raw data files from the following instruments:

- Nano ITC<sup>2G</sup>
- Nano ITC
- Nano DSC
- Multi-Cell DSC (protein analysis)

## *Features and Functionality*

- Improved productivity through saving and applying Analytical Methods to data sets.
- Improved interface for analyzing related data sets through the use of drag and drop operation.
- New application interface for improved ease-of-use.
- Enhanced file manager system for easy access to open file windows.
- Added ability to analyze multiple files simultaneously.
- Expanded analysis functionality
  - New **Pressure Perturbation Calorimetry** (PPC) analysis functionality
  - Integration of a single peak for isothermal calorimetry
- More flexible, user-definable report generator has been added.
- Ability to automatically save reports within analytical methods is added.
- Added easy **Export** and **Import** functions for delimited \*.txt files.

## *Recent Bug Fixes*

- Improved accuracy of baseline point deletion in ITC baseline editor.
- Applying an analysis method to ITC data now allows the option to apply concentration and volume settings, and models. A DSC analysis method can apply models.
- Experiment designs can be exported and imported.
- Experiment designs now require an **Update** button to be pressed before applying settings.
- Support for languages that use the comma symbol as a decimal point has been added.



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