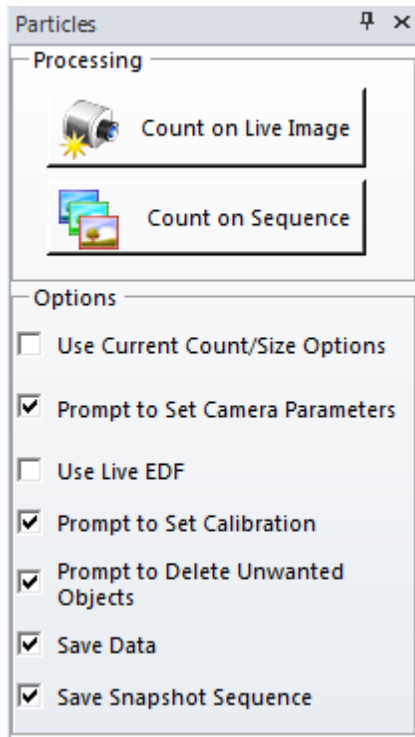


Particles Count Application

Description:

Provides a workflow to count particles on live image or sequences. The result measurements are collected in Data Collector and in the end of processing saved to a file. A publication copy of the images with burned measurement overlays is also created and saved.

User Interface:



The **Count on Live Image** starts the workflow on Live image. The workflow contains the following steps:

1. The user is asked to close all images. If user selects No, the app exits. When user selects Yes - all images get closed, data collector reset and the predefined Count/Size parameters for counting dark round objects are set. If user wants to use other parameters, for example counting bright objects, the **Use Current Count/Size Options** can be activated, so the app will use the active options.
2. Prompts user to set camera parameters. User can adjust exposure time, bit depth and other camera parameters and click Ok. (The prompt is shown when the **Prompt to Set Camera Parameters** option is on.)
 - a) When **“Use Live EDF”** option is active, the live EDF is started and user is prompted to adjust focus to build the complete, in-focus image. When user clicks Ok, the result image is measured.
 - b) When **“Use Live EDF”** option is off – single frame is captured.

3. Prompts user to set correct calibration. (The prompt is shown when the **Prompt to Set Calibration** option is on.)
4. Captures an image.
5. Executes Count, the objects are counted and automatically separated.
6. Prompts user to select unwanted objects, if any. User can use Ctrl-click to select multiple objects. Clicking Ok deletes the selected objects. (The prompt is shown when the **Prompt to Delete Unwanted objects** option is on.)
7. The measurements are saved to Data Collector.
8. User is prompted to move stage to a new position (Yes) or end the operation (No). If user selects Yes, the workflow continues from 4.
9. If user selects No, the loop ends and user is prompted to save Data Collector data to a file (if the **Save Data** option is on) . Also a publication copy of image sequence with burned measurement overlays is saved to a file with prompt. (if the **Save Snapshot Sequence** option is on).

The data collector measurements are saved into 2 files:

ADOXML - the file contains complete data set of measurements, which can be loaded later to Data Collector and analyzed in Image-Pro Premier.

TXT - tab-delimited file of measurement data. This file can be then loaded to any external data analyzing software, for example to Microsoft Excel.

The **Count on Sequence** starts the workflow on already saved sequence of particles. The workflow contains the following steps:

1. The user is asked to close all images. If user selects No, the app exits. When user selects Yes - all images get closed, data collector reset and the predefined Count/Size parameters for counting dark round objects are set. If user wants to use other parameters, for example counting bright objects, the Use Current Count/Size Options can be activated, so the app will use the active options.
2. Prompts user to load sequence from a file.
3. Repeats steps 5-7 of the **Count on Live Image** workflow for every frame of the sequence. and then step 9.

Typical image for the application:

The screenshot displays a software interface for particle analysis. The main window shows a grayscale image of several dark, roughly spherical particles. Each particle is outlined in blue and labeled with a red text identifier: P1R1, P1R2, P1R3, P1R4, P1R5, P1R6, P1R7, and P1R8. On the left side, there is a vertical sidebar. At the top is an 'Image Strip' panel showing a sequence of frames. Below it is a 'Particles' panel with two buttons: 'Count on Live Image' and 'Count on Sequence'. Further down are 'Options' with several checked checkboxes: 'Use Current Count/Size Options', 'Prompt to Set Camera Parameters', 'Prompt to Set Calibration', 'Prompt to Delete Unwanted Objects', 'Save Data', and 'Save Snapshot Sequence'. At the bottom of the interface is a 'Measurement Table' panel containing a table with the following data:

Feature Name	Area(mm^2)	Diameter, Max(...)	Diameter, Min(...)	Radius Ratio	Roundness
P1R1	0.023	0.174	0.166	1.077	1.014
P1R2	0.022	0.172	0.161	1.097	1.017
P1R3	0.019	0.164	0.147	1.274	1.071
P1R4	0.022	0.182	0.152	1.271	1.027
P1R5	0.023	0.185	0.151	1.240	1.028
P1R6	0.022	0.168	0.159	1.114	1.017
P1R7	0.024	0.177	0.167	1.103	1.011
P1R8	0.024	0.176	0.167	1.075	1.011

Demo files:

Demo sequence can be downloaded from

ftp://ftp.mediacy.com/uploaded/Premier_Apps/ParticlesAppDemo.zip

Code:

The code can be used as an example to show user prompts, use interaction mode of commands, capture to a hidden image, append frame to a sequence, snap active frame to a hidden image, full setup of Count/Size options, setting up Data Collector, adding a user-defined measurement to Data Collector, save files with prompt.

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