Yield Calculator

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Main file: square_count.m
Support file: mginput.m

Preparing the Code:

1) place both matlab files in the image directory
2) open square_count.m

> change the 2nd line of code at the top to the name of the image to be analyzed
> ie. I=imread('dimers.png');

3) Run square_count.m, the image should appear with all objects to be considered blue; if not, see (3a)

> 3a) If small objects are not being included, try decreasing the LB (lower bound) value. (setting LB to zero will tend to leave significant 'speckle' noise)
>
> 3b) If the threshold appears to not be set right, uncomment (remove the '%') from line 23- manual threshold. Change this value until all desired objects are selected.
> If no manual threshold value works, your image may not be flattened properly.

Using the Code (warning: there is no 'undo' feature so click carefully when analyzing):

Upon running square_count.m, an image window should appear with all objects to be considered blue:
Left click on a blue object to select it.
Right click on the image to open the menu in the Matlab command window (be sure to change windows when trying to enter numbers in the command window).
Middle click to exit when done or simply close the image window.

Menu Options
(right click, then enter the desired number on the Matlab command window, then press return/enter):

0-exit
1-cut tool: left click vertices on the image to remove everything in the polygon mask; double click on the initial vertex to confirm mask.
2-left click to select: this is the default left click tool when initially running the code.
3-left click to cancel selection
4-left click to delete object: removes object from calculations entirely (no undo-be sure to separate tiles if objects are touching.
5-separate touching tiles: create a polygon around an object that should be separated from nearby objects, and double click to confirm separation. Separated objects can then be individually selected [2] or cancelled selection [3].
6-bonus tools

Bonus Menu (by selecting 6 in prior menu):

0-exit menu
1-delete all objects touching image edges: using filters can make this not function properly for all edges.
2-delete all object smaller than X% of average selected object: meant to remove peppercorn noise; alternative to the LB variable.
3-help me find similar objects: you MUST have a few objects already selected. This just highlights-not part of calculation; using a tool like cut [1] will remove the highlights.
4-select all objects: when your yield is high; then cancel bad objects with [3].

Yield = selected_pixels / all_pixels_over_threshold

Happy Analyzing!