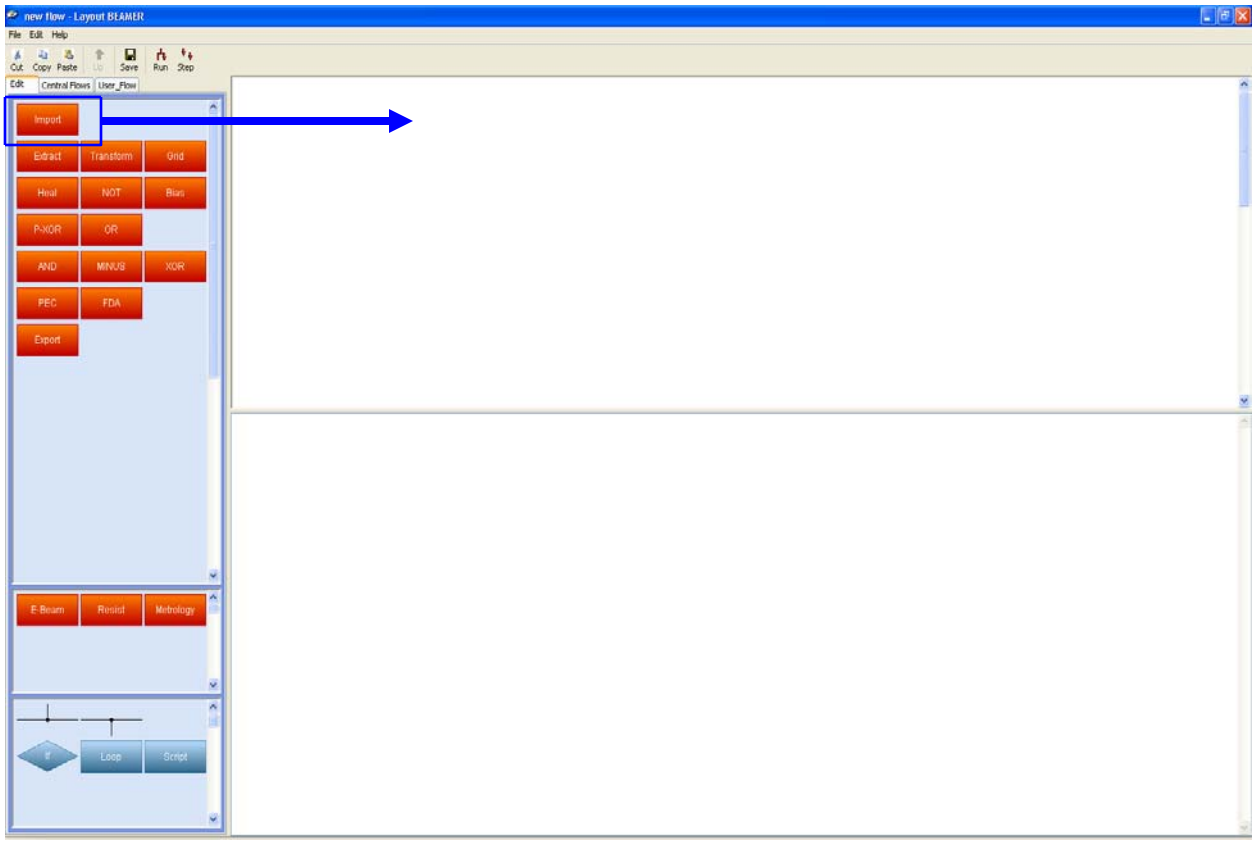
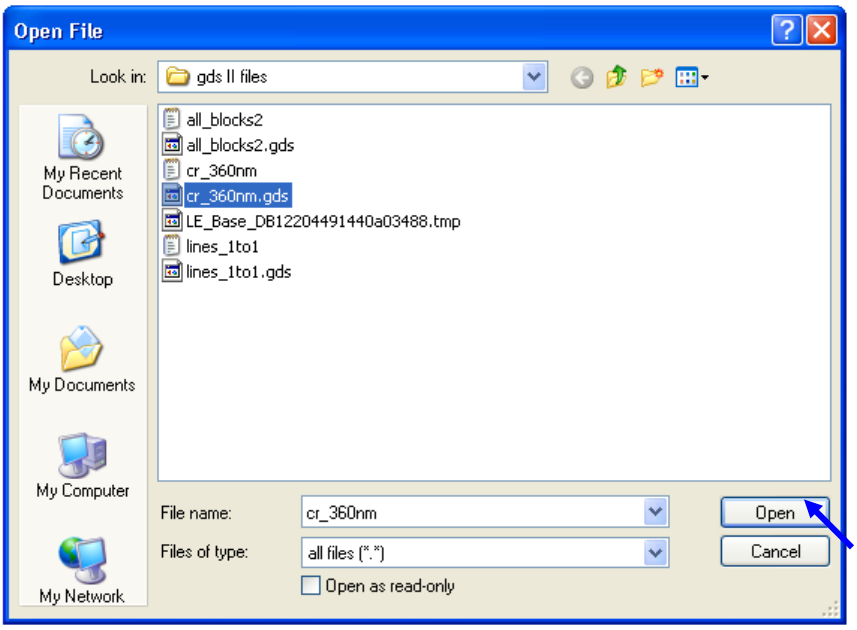
Instructions for LayoutBEAMER

1. Click on the shortcut icon to open **LayoutBEAMER**

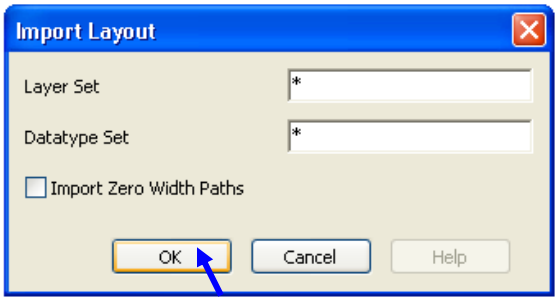
2. Drag the **Import** button to the white work space on the right.



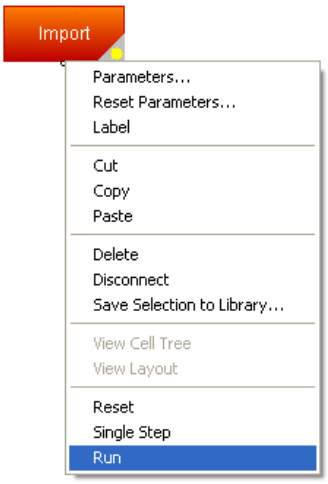
3. Select the file you made containing your pattern (.gds, .dxf, etc…) and push open.



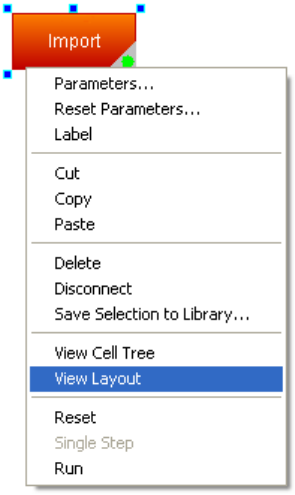
4. A box titled **Import Layer** with pop up, click OK



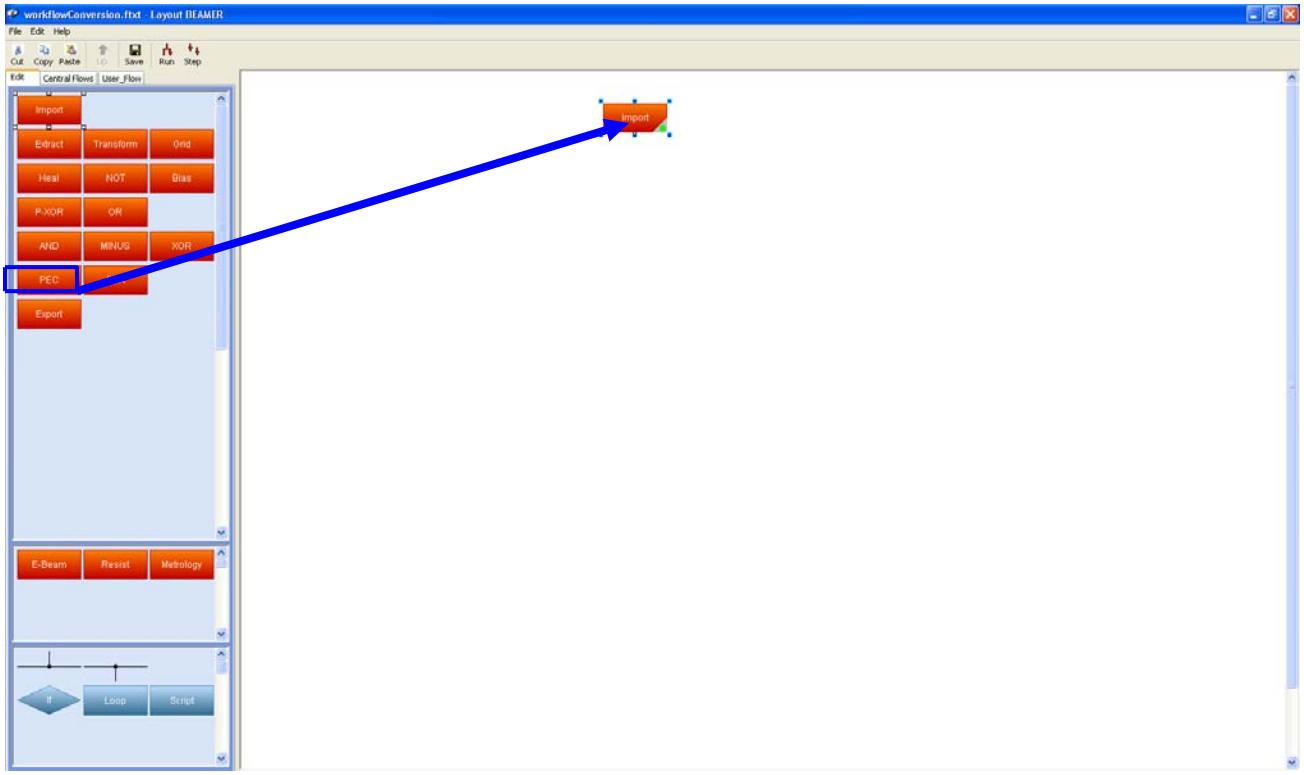
5. The dot on the lower right of the **Import** button should be yellow. Right click on the **Import** button and select **Run**. The dot will turn green.



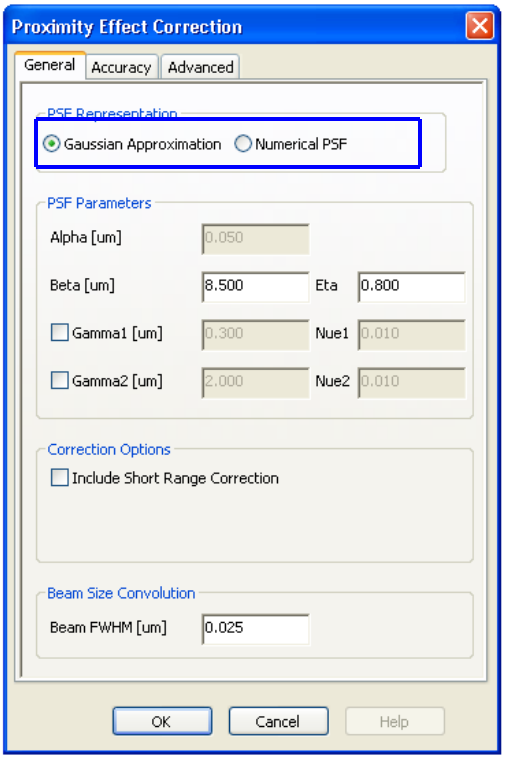
6. You can look at your pattern layout by right clicking on the **Import** button and selecting **View Layout**.



7. Drag the **PEC** button to the work space and place it on top of the **Import** button.

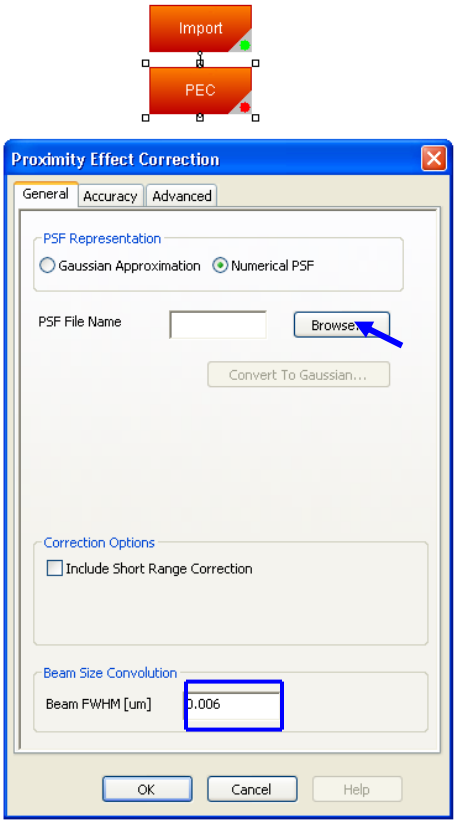


8. A **Proximity Effect Correction** window should pop up. If you have already run a sceleton simulation then select **Numerical PSF**, if you have not run a skeleton simulation select **Gaussian Approximation** and skip to step 10.



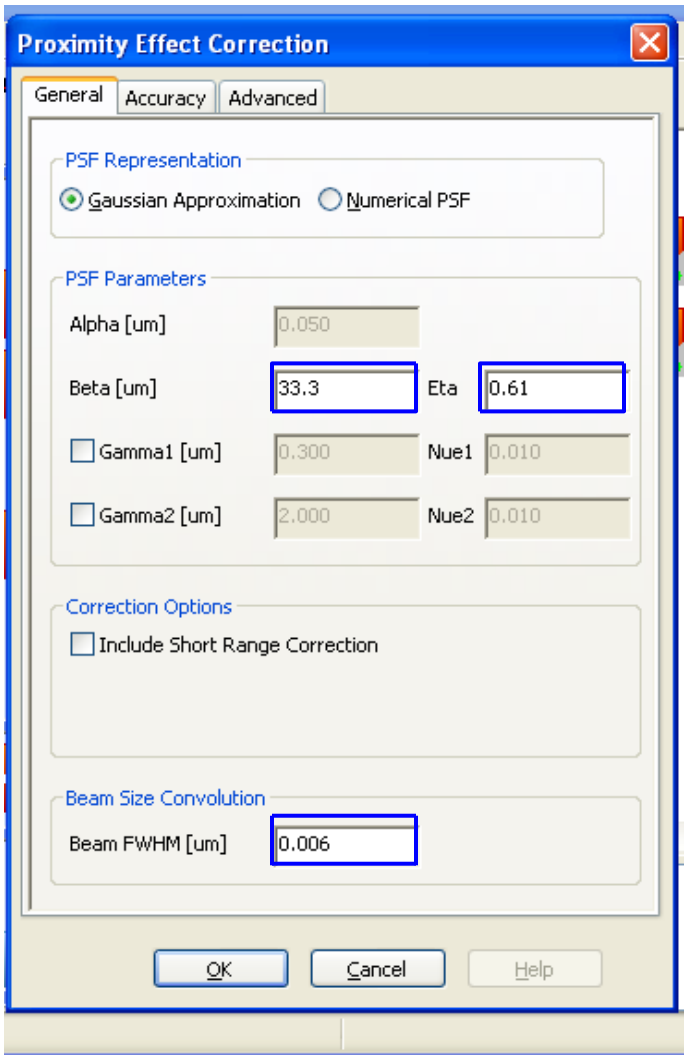
9. THIS STEP IS FOR SCELETON SIMULATIONS ONLY:

After selecting the **Numerical PSF** button, Click browse and open your .xrz file (from the sceleton simulation). Then set the **Beam FWHM [um]** to 0.006, this is the beam diameter. Skip to step 11.

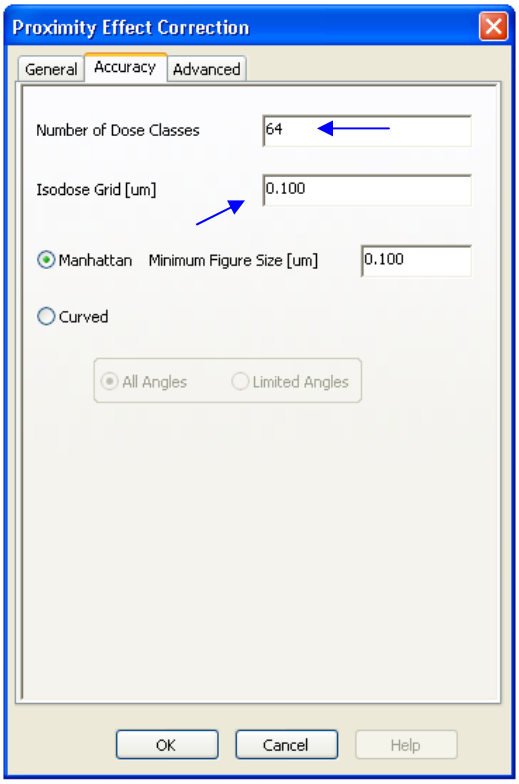


10. THIS STEP IS FOR NON-SCELETION USERS ONLY:

Change the **Beta** value to 33.3 and **Eta** value to 0.61 for a resist on a silicon substrate. Change the **Beam FWHM [um]** value to 0.006, this is the beam diameter.

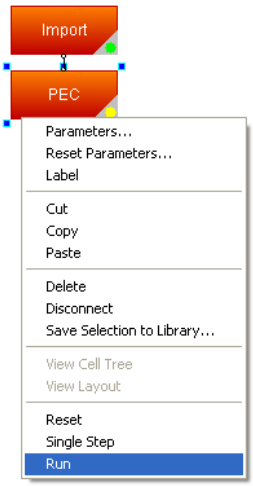


11. Click the **Accuracy** Tab. The first option, **Number of Dose Classes**, helps with the resolution of your pattern. The maximum is 64; we recommend that you use 64 different doses to get the best results. The second option is the **Isodose Grid [um].** This is how often the dose will change within a feature. If you select 0.100 (100 nm), then every 100 nm the dose can change. The smaller this number is the more dose variation there will be.

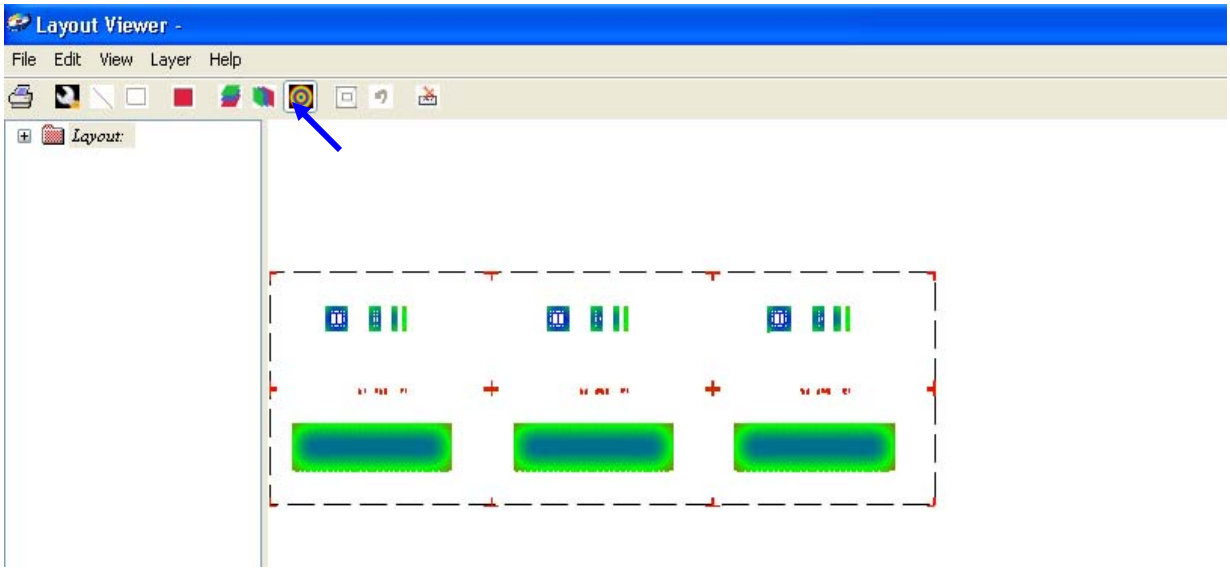


12. You do not need to change anything in the **Advanced** tab. Click OK.

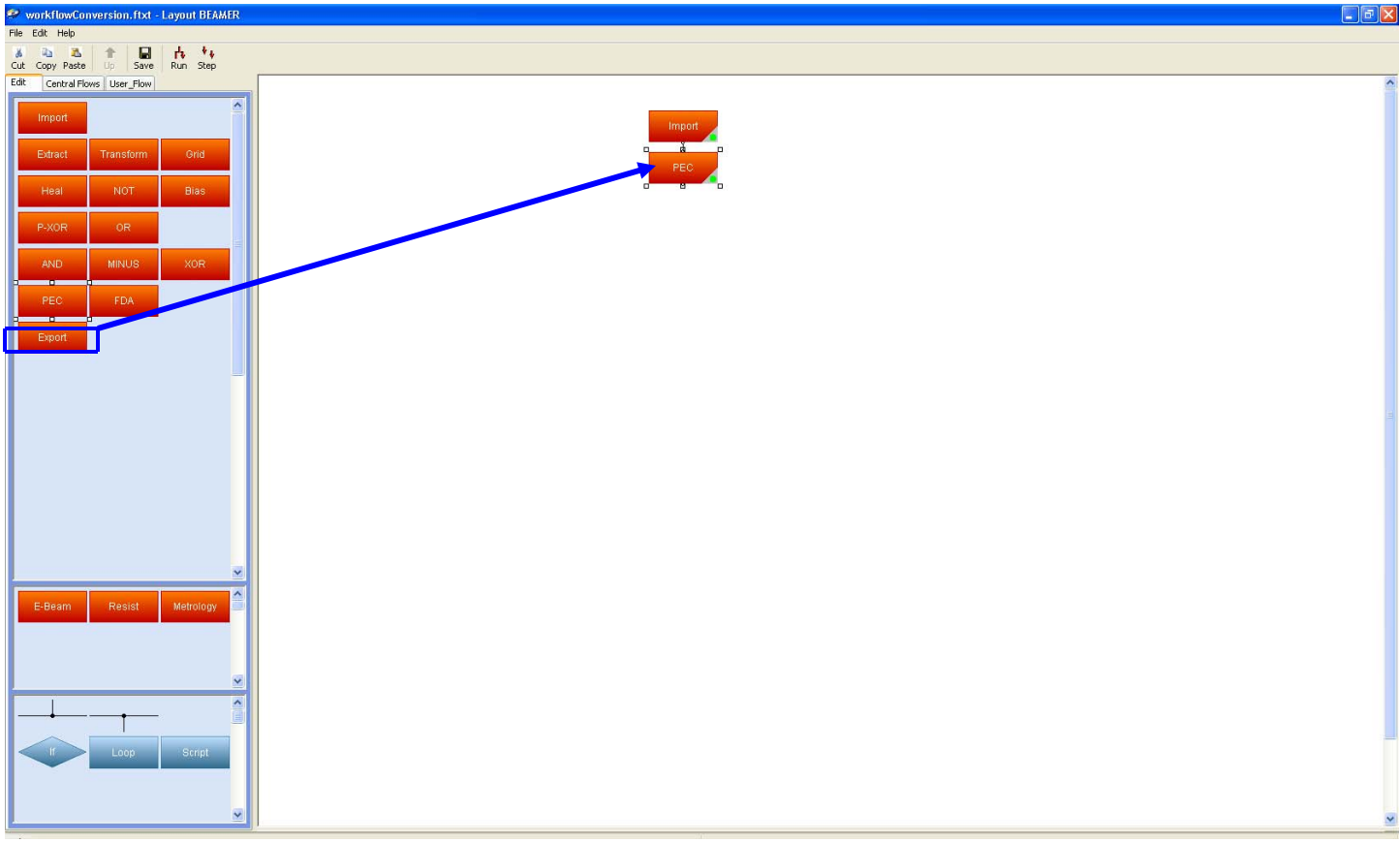
13. Right Click on the **PEC** button and select **Run**. This may take a minute. The dot should turn from yellow to green when finished.



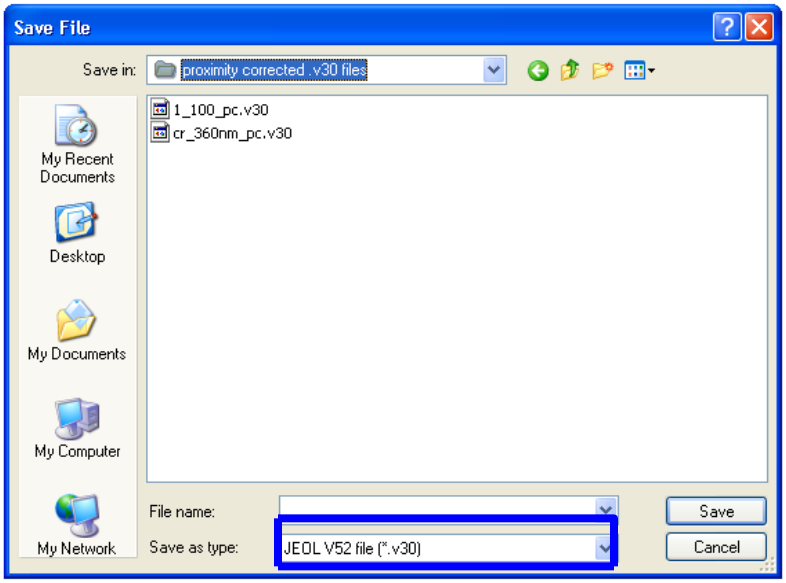
14. You can look at the dose variation in your pattern (created by LayoutBEAMER) by right clicking on the **PEC** button and selecting **View Layout**. In the View Layout screen select **Color by Dose** in the upper right hand corner.



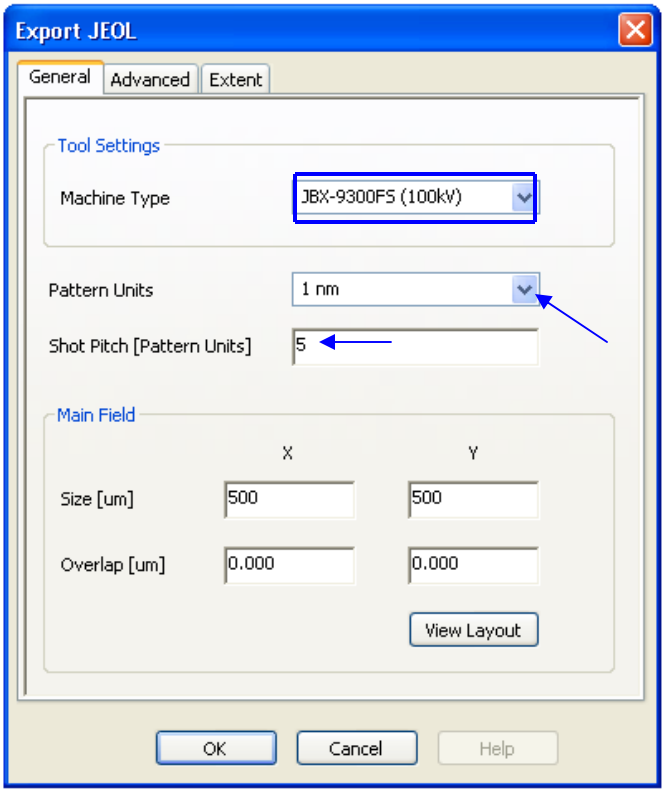
15. Drag the **Export** button to the work space and place it on top of the **PEC** button.



16. Change the file type to **JEOL V52 file (*.v30)** and click save.



17. The **Export JEOL** screen will pop up. Select the **Machine Type** as JBX-9300FS (100kV), the **Pattern Units** as 1 nm (this is the smallest possible unit) and the **Shot Pitch** as what you have specified in you schedule file (around 5 nm). Click OK.



18. Right click on the **Export** button and click **Run**. The yellow dot will turn green. Your .v30 file is now in the folder that you saved it during step 16. A text document of the shot modulation has also been created. You must copy and paste this into your job deck file. Upload the .v30 and the text file of doses to the nanolithography website.