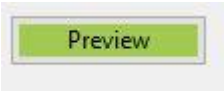
3D Scanning with Artec Studio 11 Professional

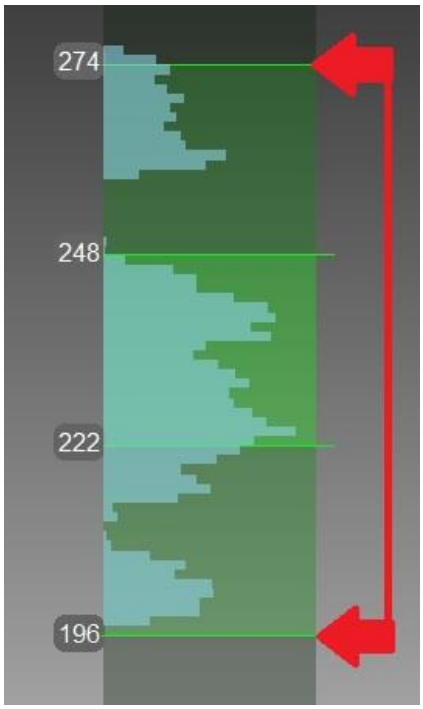
Digital Media Tutorial
Witten by Dan Staffieri

1) Open **Artec Studio 11 Professional**

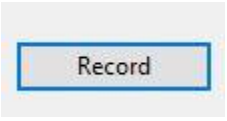
2) Press the **Preview** button or press the Artec scanner's toggle switch forward.



3) Watch the computer display as you line up the scanner with the object that you're trying to scan. By adjusting your distance to the object, make sure the waveform stays centered within 274-196.

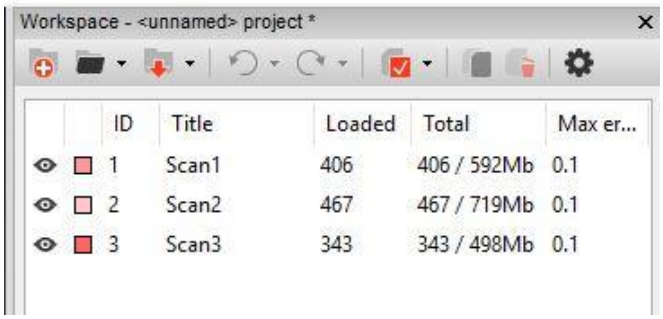


4) Press the **Record** button or press the Artec scanner's toggle switch forward.

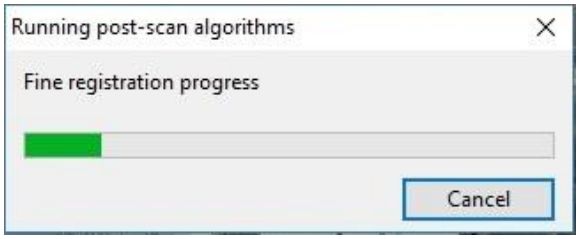


5) Press **Stop** or press the Artec scanner's toggle switch downward.

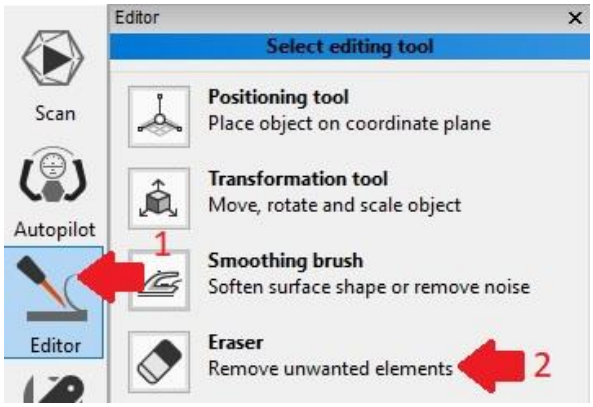
Note: While scanning, you want to rotate your object a full 360 degrees on a rotating table for best results. Depending on your object's complexity, you will want to make 2-4 complete scans. In our example, we did 3 full scans.



6) Close the scanning tab when you have completed all of your scans. You will see a progress window appear. Wait for the complete its calculations.



7) If there sections of your scan that need to be trimmed or removed, you use the **Eraser** function which is located in **Editor** button then **Eraser**.



Navigation tips:

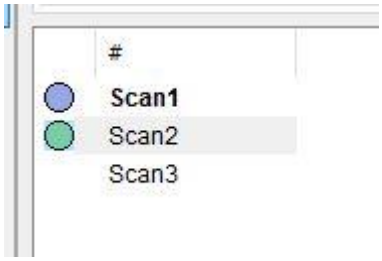
Hold **Control** and **Shift** to enlarge/reduce objects by scrolling.

If multiple layers at visible, hold the **shift** key to adjust just the selected layer.

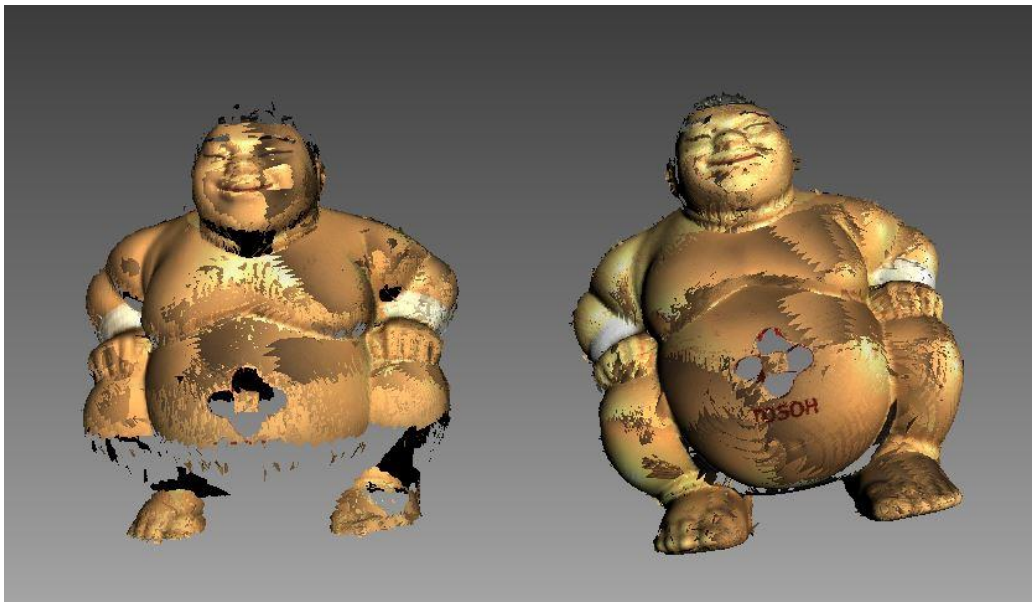
To move an object up/down/left/right on the screen, press both the **Left** and **Right** click buttons your mouse at the same time and move your mouse.

8) The next step is to align all the scans together. Press the **Align** button.

You'll notice the scan layers on the left panel.

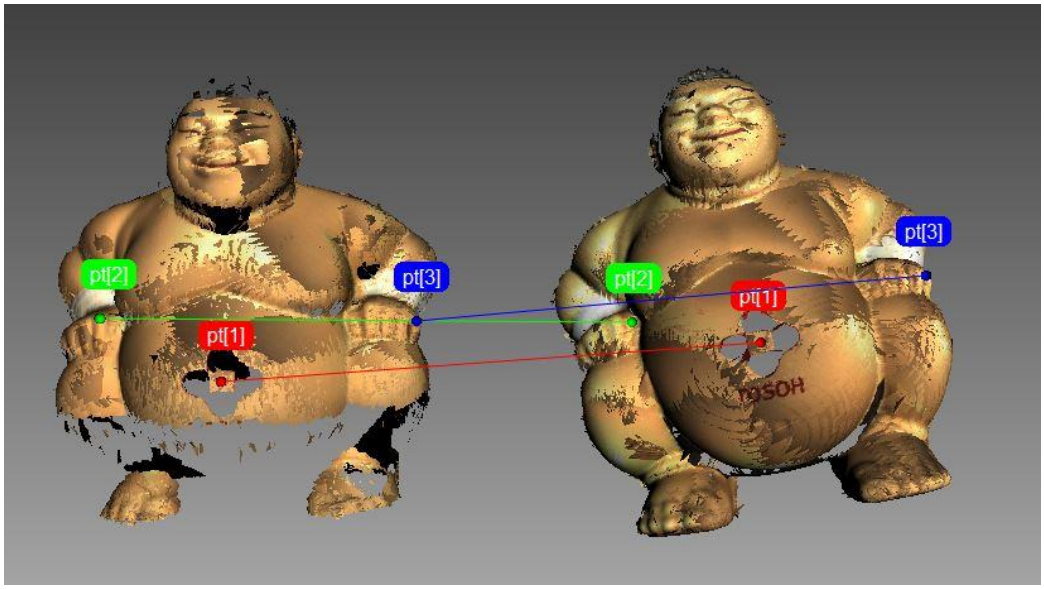


Blue circles mean the layer is registered, and the Green circles means an unregistered layer. Only align 2 layers at a time. Rotate two scans on the screen side by side so that they laid out similarly (see example).



Tip: Again Hold **Shift** to move one scan at a time.

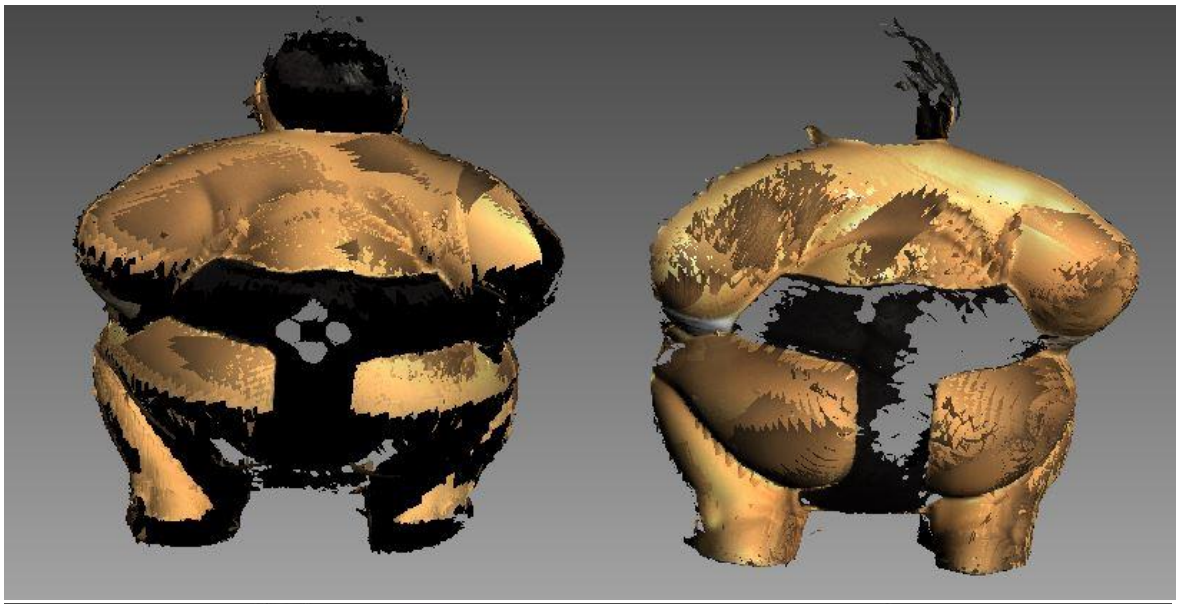
Next you will have to click on at least 3 common points between the two scans. You can press the space bar to deselect a point if you have made a mistake. See the example below

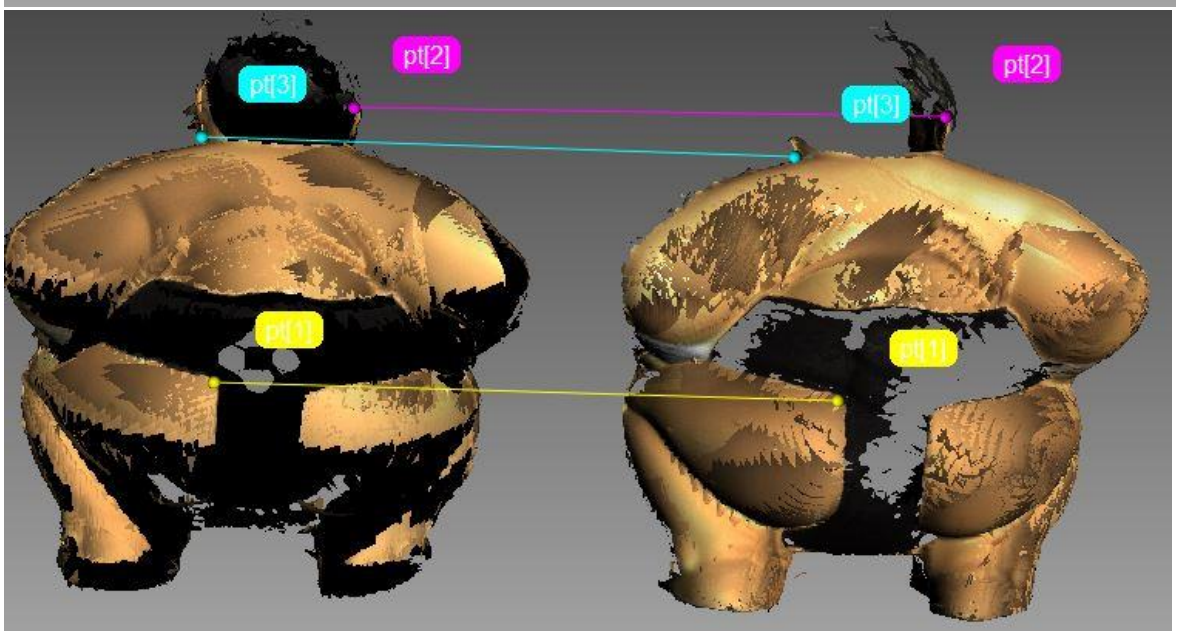


Now click the align meshes.

You'll notice now that Scan2 is now blue and registered.

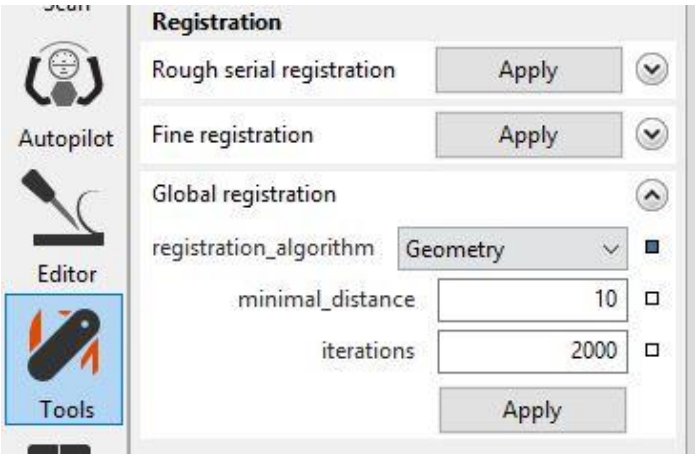
Now do the same process for Scan3





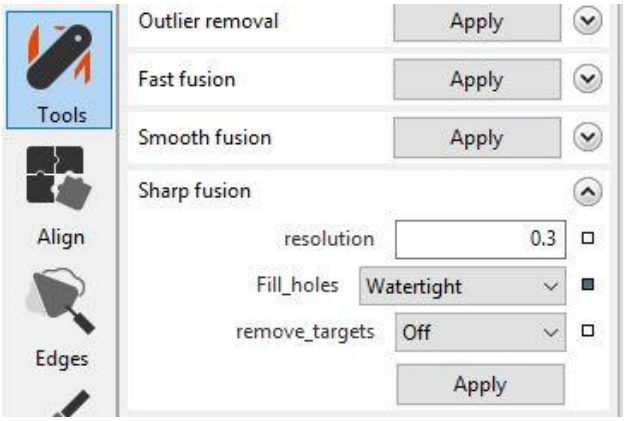
9) When all of the alignments has been performed. Click **Apply** at the bottom of the window.

10) Next go to the **Tools** button **Registration** then **Global Registration**. Change **registration_algorithm** to **Geometry**. Lastly, click **Apply**

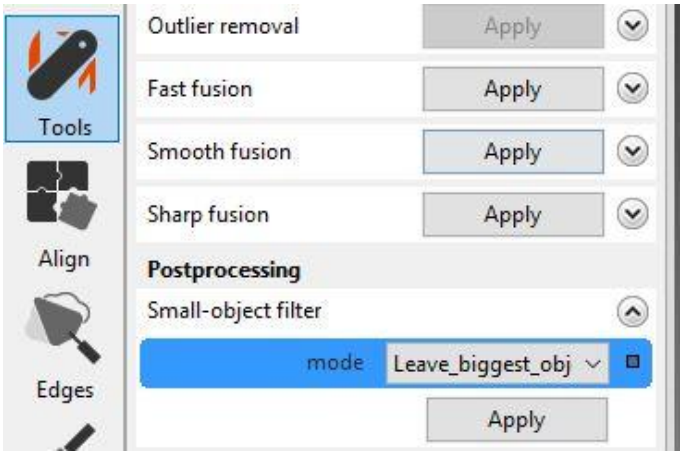


11) Now go to the **Tools** button and **Fusion** then the **Outlier removal** section. Change the **std_dev_mul_threshold** to 2. Press **Apply.**

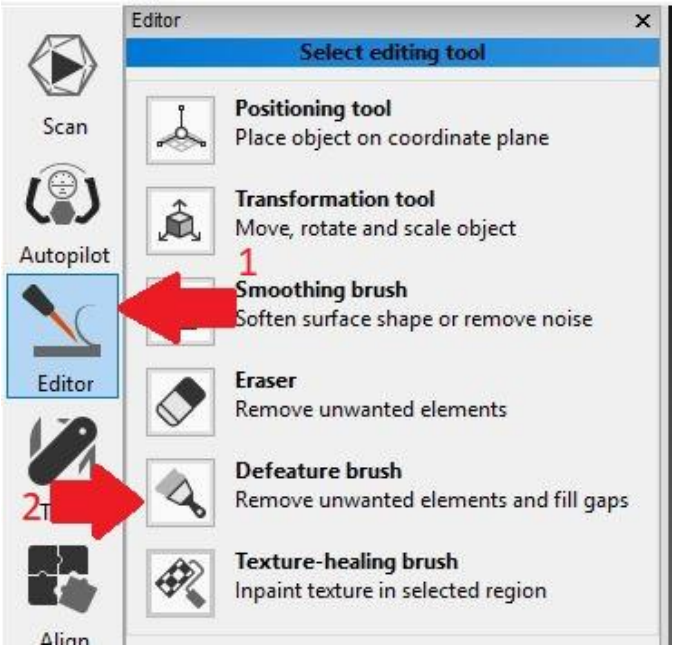
12) Next go to the **Tools** button then **Sharp Fusion** and change **Fill_holes** to **Watertight**, and press **Apply**.



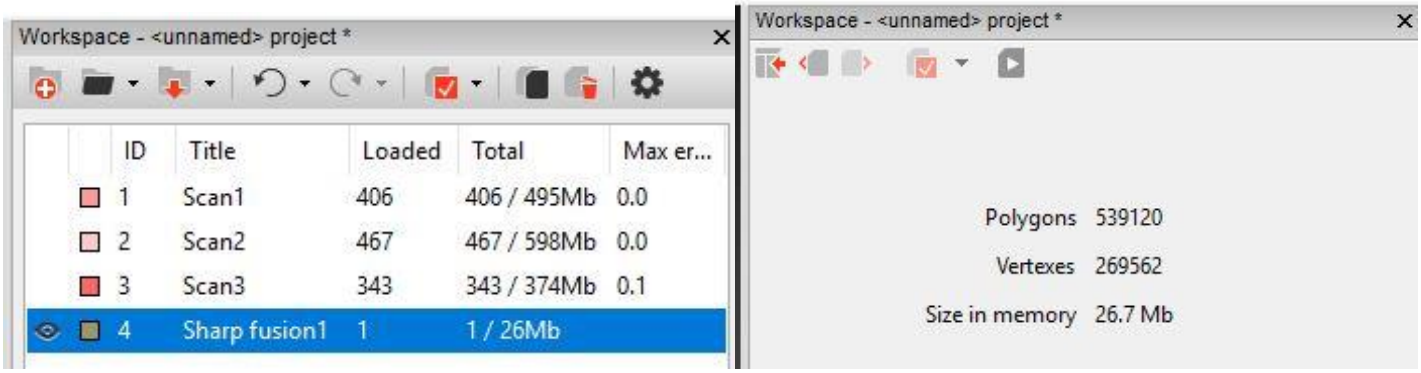
13) Next go to the **Tools** button then **Postprocessing** and change the **Small-object filter** to **Leave_biggest_object**. Click **Apply**.



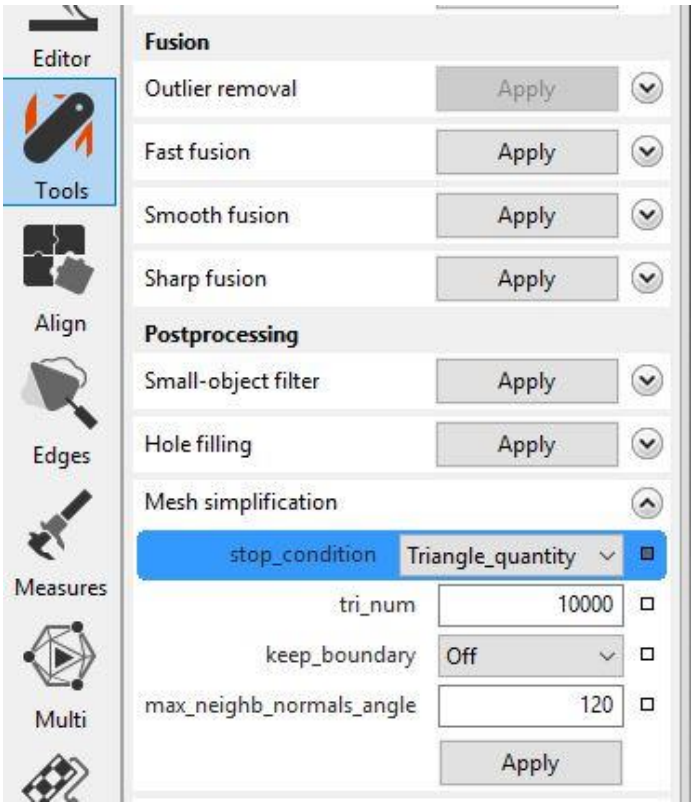
14) If you find additional parts of your model that need to be removed, you can use **De-feature Brush**. This option can be found in the **Editor** Button and the **Defeature Brush**.



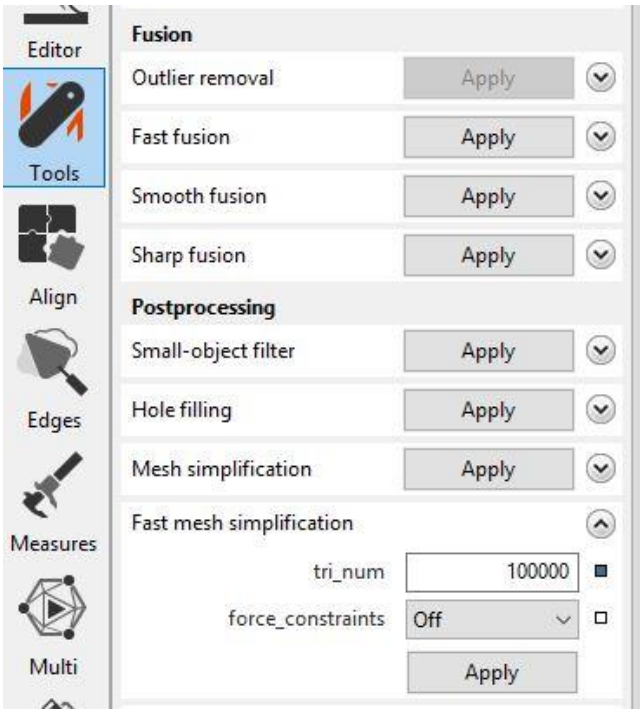
15) Double click on the **Sharp Fusion1** layer on the right side of the screen, this allows you to see the polygon count for your model. You want a target of 100,000 polygons.



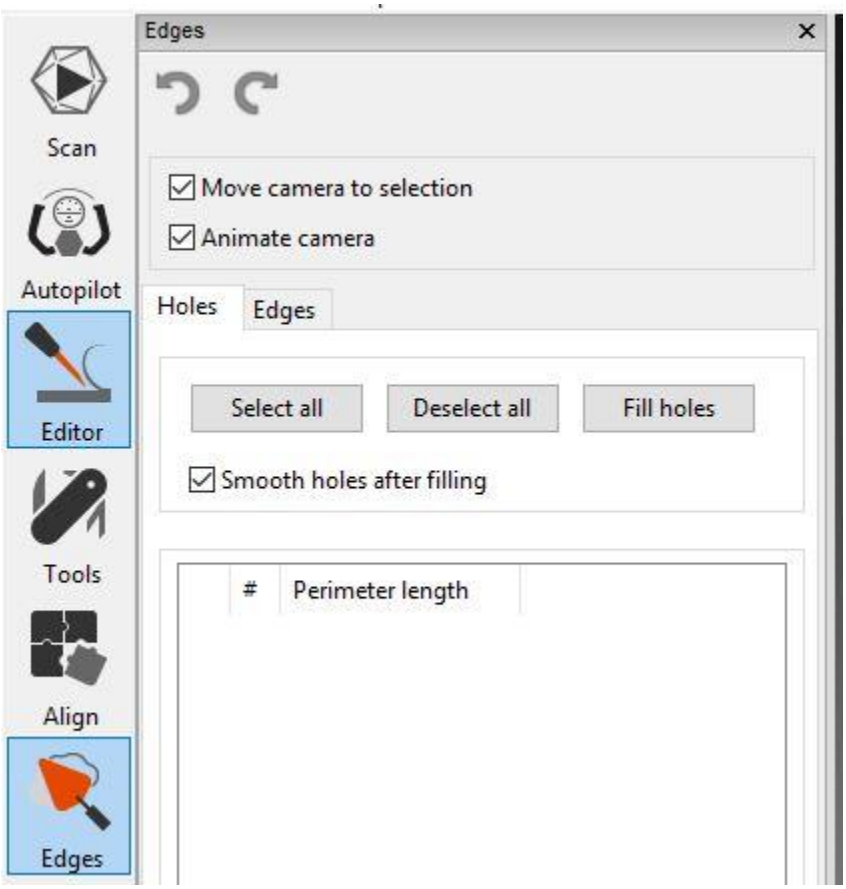
For mechanical objects that depend on accuracy, go to the **Tools** Button and **PostProcessing** and **Mesh simplification.** Change **stop_condition** to **Triangle _quantity**. Set **tri_num** to 100000. Click **Apply**.



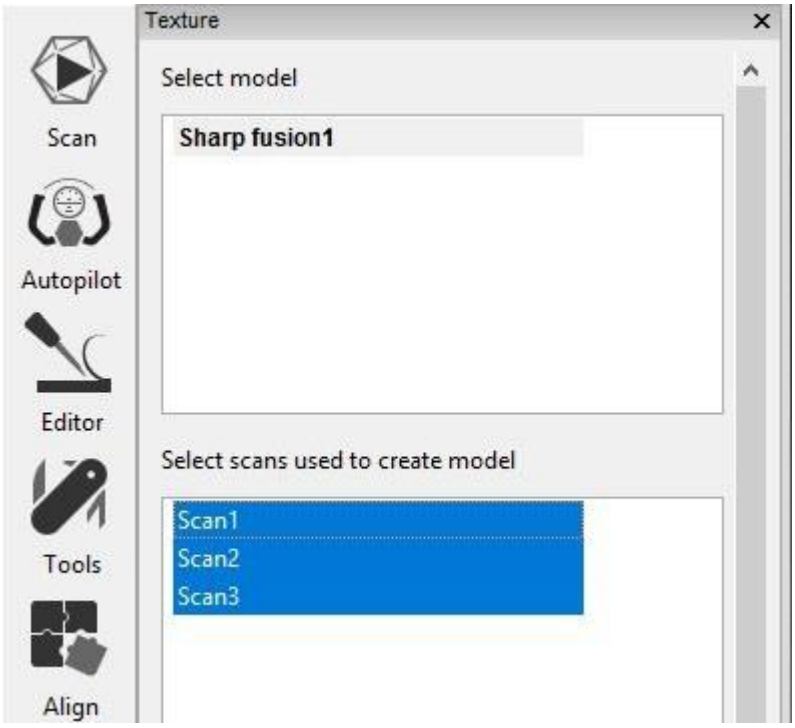
For other objects that are not dependent on accuracy, go to the **Tools** Button and **PostProcessing** and **Fast mesh simplification.** Set **tri_num** to 100000. Click **Apply**.



16) To check if your models has any holes, go to the **Edges** button. If there was any holes detected within the model they will show up on the list. You can press the **Select all** button then the **Fill holes** button to close them.

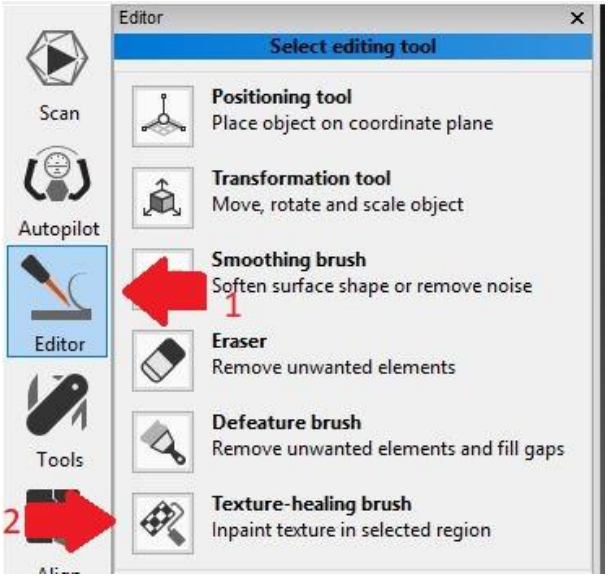


17) You can apply color textures to your model. Go the **Texture** button. Select all 3 raw scans one the left and press **Apply**.

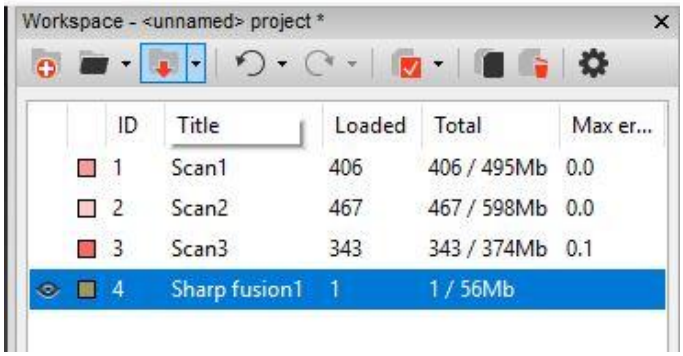


You can also adjust the Brightness, Saturation, Hue, Contrast, and Gamma correction. Press **Apply** when done with adjustments.

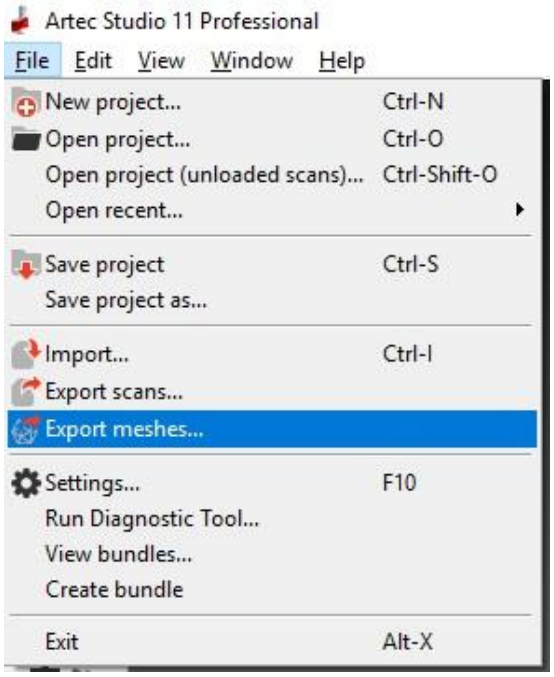
18) To make texture corrections, go to the **Editor** Button and select **Texture Healing** for simple texture editing



19) Time to export. Make sure that only the Sharp fusion layer is selected.

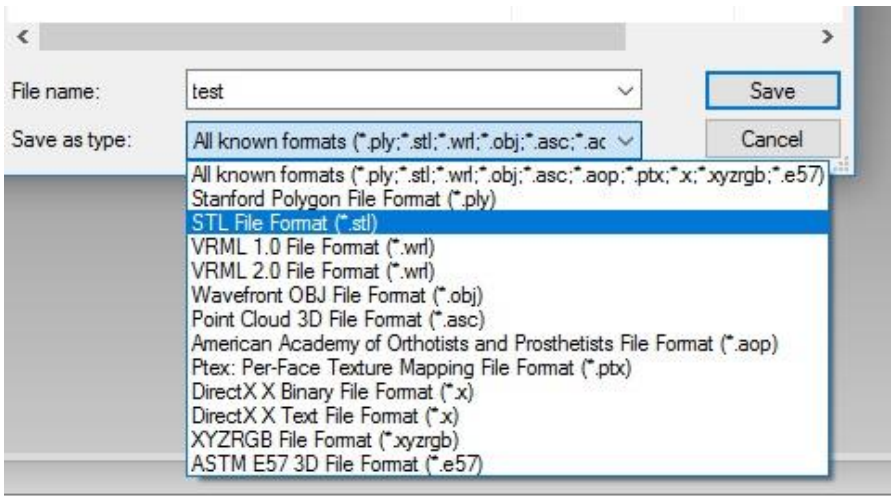


Go to **File** menu then **Export Meshes…**



20) Change **Texture export format** to **jpg** and click on the **"..."** box

21) Give the File a Name and select a file format. Typically you will want to select the **STL** file format. Be aware that **STL** does not save texture color information. If you require texture color information, select **wavefront OBJ**, **VRML** or **ASTM E57 3D** file formats. Click **Save**



22) Lastly Click on **OK** to complete your file save.