

TheBounty (YafaRay Fork) - SubSurface Scattering

Use TheBounty version 0.1.6 RC3. Do Not use version RC4, since the results are not as good.

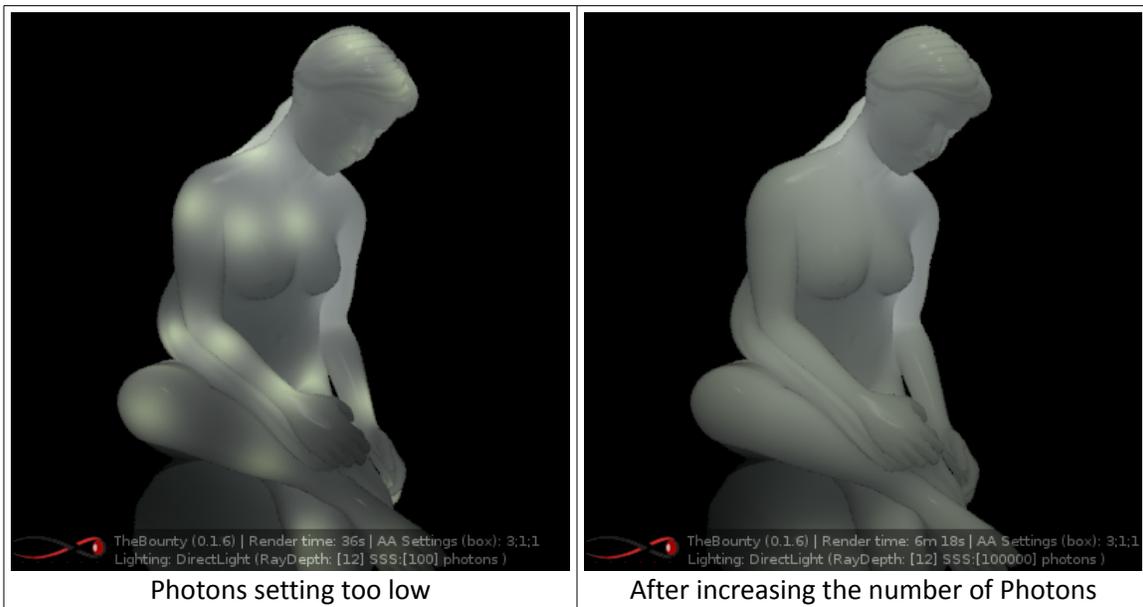
The easiest and fastest way to light a scene with objects that have an SSS material applied is with the use of Spot Lights (Photon Only disabled). A Spot Light placed in the front and back of the object may work best. Using an Ambient Light with HDRI (Enlight enabled) can produce more realistic SSS in objects. Path Tracing gives more realistic renders than Direct Light method. Remember that lighting a scene with an Ambient Light results in longer render times.

Render Options (Wings3D Menu)

Lighting Tab > SubSurface Scattering (The scale of the Object affects the settings required)

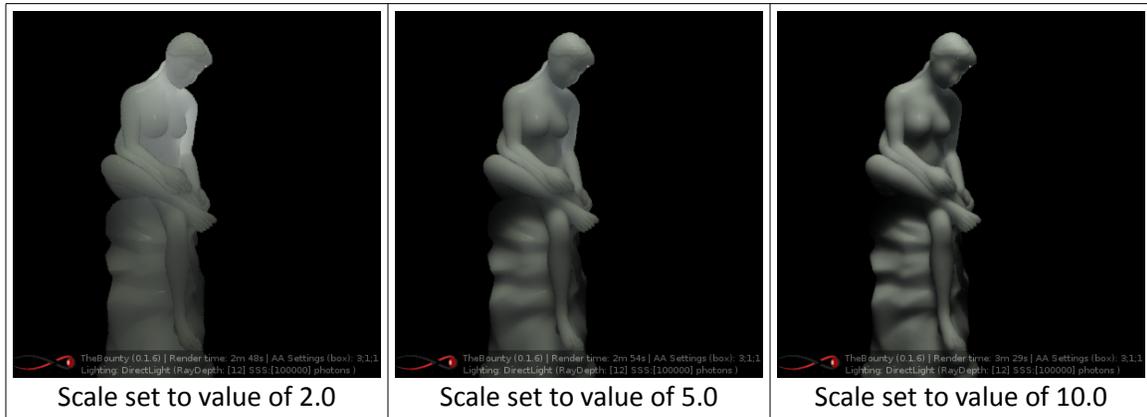
Enabled: Enable to use SubSurface Scattering. A material with SSS must be applied to an object. (TheBounty will fail and stop responding If no SSS material is visible in the scene when SSS is enabled in the Render Options. You will have to use Task Manager in Windows to stop the program.)

Photons: If the value of this setting is too low, the object will not show light scattering. If the object shows random spots of light, increase the value to a higher value. If good results are achieved, reduce the number until you find the optimum number of photons. Use as few photons as possible, since higher numbers will increase rendering times. (This setting affects the number of photons produced by lights in the scene and it also increases the number of photons that hit the object). Increasing the power setting of lights in your scene will increase the strength of SSS in materials.



Render of model posted by Patricia Barber at archibaseplanet.com.

Scale: The rendering scale of the object. Increasing this value reduces the amount of SSS, since a larger object will show less light scattering. (This setting changes the object scaling value in mm relative to a value of 1. A value of 30 sets 1 unit = 30mm). The scale of the Wings3D object will affect the settings you need to use. Smaller objects may require a larger value for scale.



Render of model posted by Patricia Barber at archibaseplanet.com.

Depth: Controls the number of times photons are reflected. The default value of 15 should work.

SingleScatter Samples: Affects the quality of the SSS. The default value of 32 should give good results. A much lower value (8.0) will help to reduce render times and can still give good results.

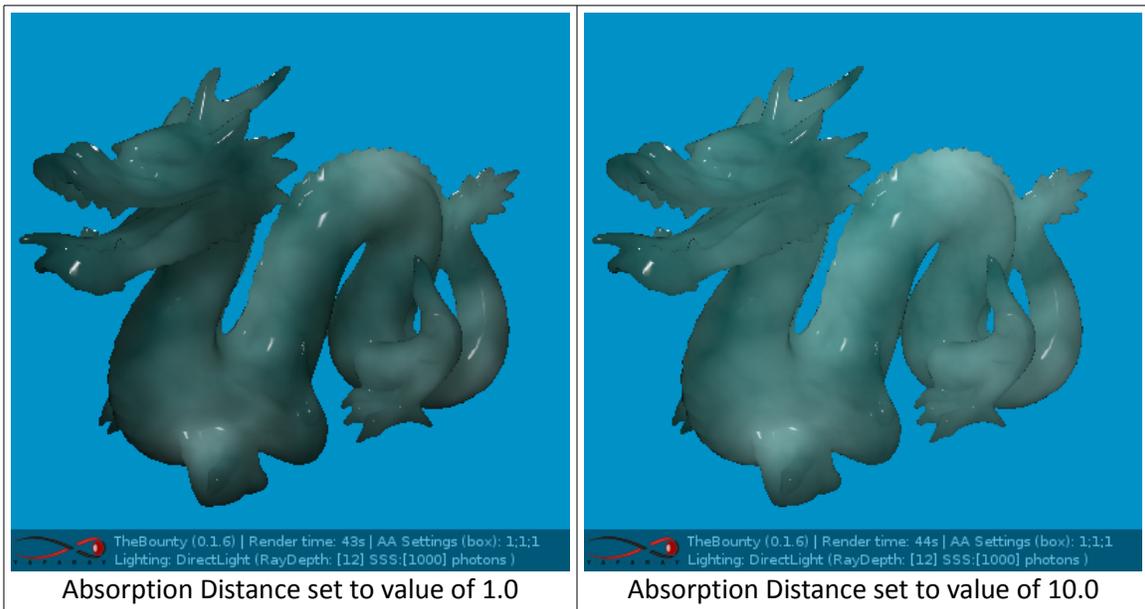


Material Properties (Wings3D Menu) – Start by testing the default settings.

IOR, Glossy Color, Diffuse Color, Specular Color: Standard material properties.

Absorption Color: Sigma A value. (Absorption Coefficient) This setting controls the color range from dark to light. Use white or black or a gray color somewhere between black and white. Using white results in a lighter material throughout the model. Using black will result in darker areas in the material. Gray will produce a more moderate color range throughout the model.

Absorption Distance: A value of 3 should give good results. Higher numbers increase the depth that the light penetrates, resulting in a lighter material.



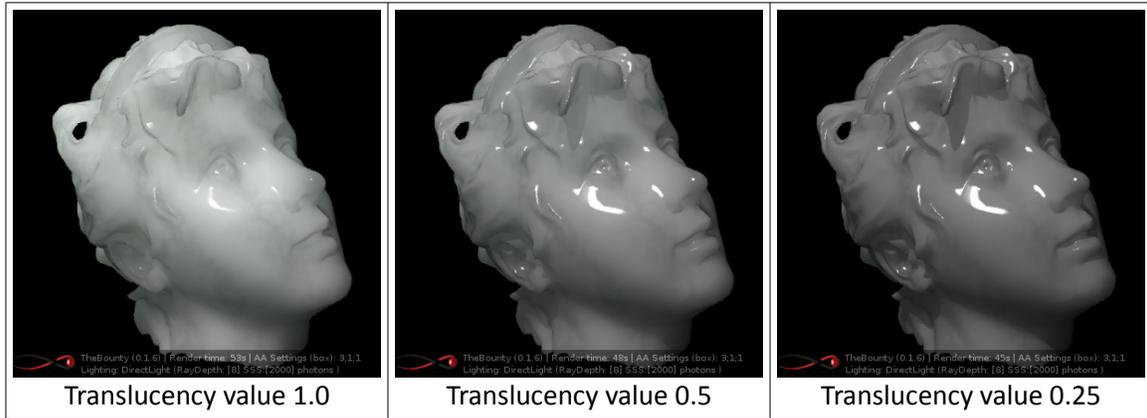
Render of Dragon from the Stanford 3D Scanning Repository. Cloud Procedural Texture added.

The Absorption Distance setting has a large affect on the appearance of the material, as shown in the following images. The size of the Wings3D object affects the setting you will use.

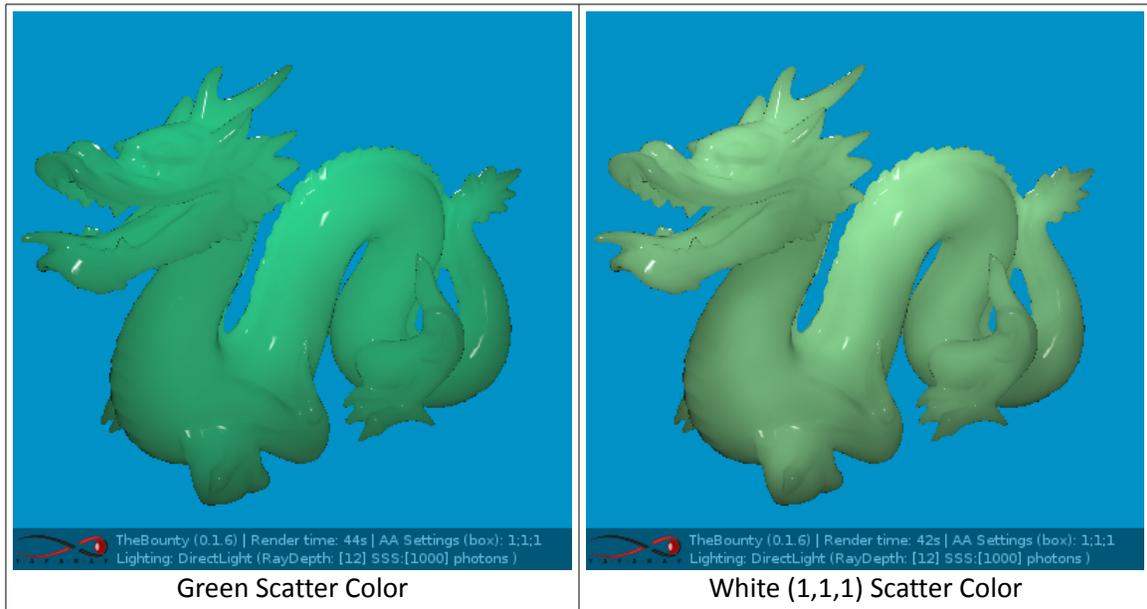


Render of model posted by 3d-Art at archibaseplanet.com. Marble Procedural Texture added.

Translucency: Start with a value of 1.0.



Scatter Color: Sigma S value. (Scattering Coefficient). Using white (1,1,1) will result in a material with a creamy pastel color.



SigmaS Factor: Leaving this value set to 1 should give good results. Smaller Wings3D objects may require a higher number. (Increase to a value greater than 1 to produce a scatter color larger than (1,1,1)). This setting is a multiplier for the Scatter Color value (SigmaS Factor * Scatter Color).

Diffuse Reflection, Glossy Reflection: Standard material properties.

Exponent: Increase this value, in combination with Glossy Reflection, to get a shiny surface. If the standard material property IOR is set too low, the surface will not be shiny (1.4 works well). If standard material property Glossy Color is set to black, the surface will not be shiny (use a color somewhere between gray and white). If using Spot Lights for light, the Fuzzyness setting needs to be reduced (0.1 works well) in order to obtain shiny surfaces when the Soft Shadows option is enabled.

