

TEXTURED TREE BARK

Objective:

To produce a rendered image of a tree trunk, with branches, etc., textured and colored with a bark-like surface.

Input Items:

3D tree geometry

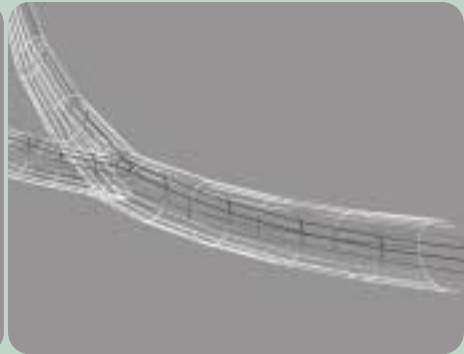
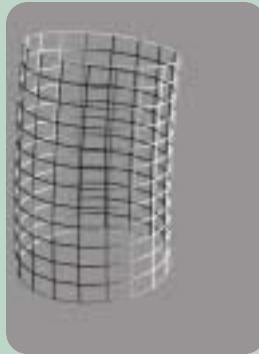
Digital Image of Bark

Step 1. Assemble source material.

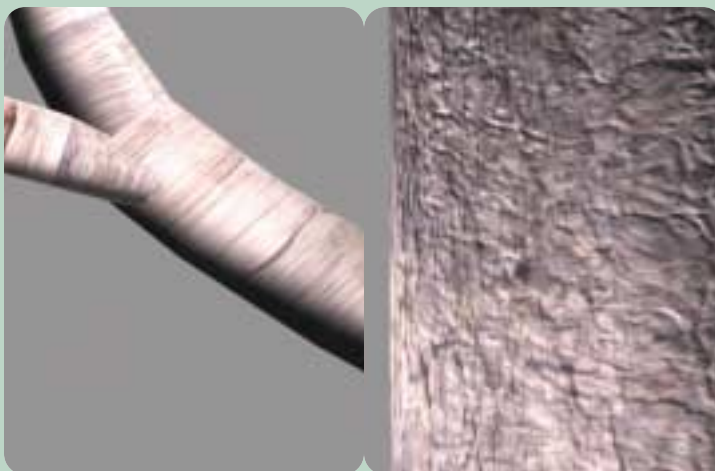
a. Acquire or generate 3D tree geometry. This may be procedurally generated by some plant-form producing software, or built by hand out of cylinders, possibly with bending, tapering, and twisting modifiers.

b. Acquire digital image of tree bark, either by scanning a slide or print, or by capturing with a digital camera. It is best if this image is captured with a minimum of lighting conditions evident; that is, the image should not have one bright and one shadowed side, as this will influence the final result. Often taking a detail photograph of the trunk of a large diameter tree will give good results, free from curvature or lighting artifacts.

Step 2. Apply texture to geometry. Typically this involves selecting the desired geometry (all of the tree, or selected portions) and specifying a texture map for the selection. In this case, you need to specify a "cylindrical mapping", so the texture is wrapped around the



The texture map, a photograph such as those above, needs to be applied to the trunk or branches with a cylindrical mapping. At left, the mapping coordinates are shown in yellow, wrapping around, and aligned with the central axis of, the trunk.



cylindrical trunk and branches. You may have to rotate the texture 90°, depending on how your original photograph was oriented. You may also want to specify a "bump map." A good procedure is to use the original photograph as the bump map as well, though you may wish to experiment with additional options, including using other bump textures.

Step 3. Modify texture map parameters. Changing the scale and rotation of the texture map can have dramatic effects on the image. Choosing finer scale for smaller branches, and coarser scale for larger trunk can be effective. Controlling the depth of bump map can also make a difference. Other maps, such as shininess or reflectance can be added for special effects such as wet branches, glossy bark, etc. You may wish to overlay two or more textures, or add an additional speckled or other texture to the final result.

Step 4. Adjust eye position and rotation of the tree/object for best visual effect, highlighting desired features, and providing sufficient detail in area of interest.

