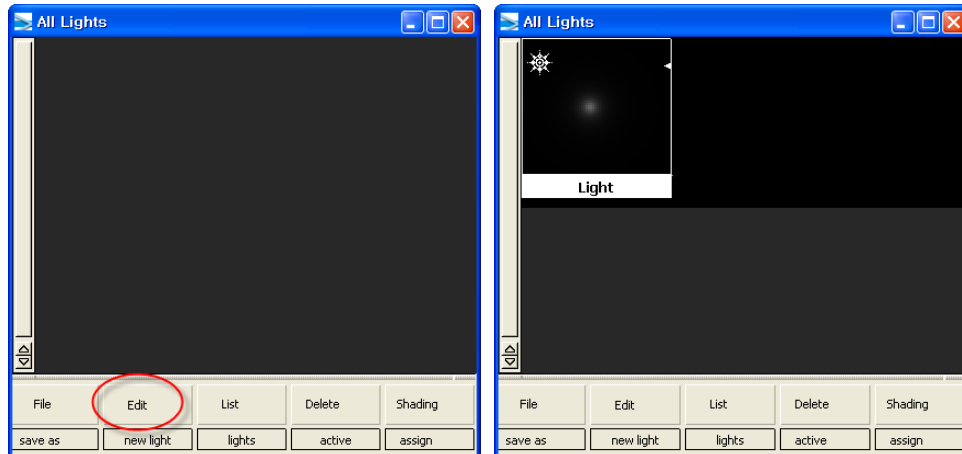# Alias Studio Tools ExerciseⅡ

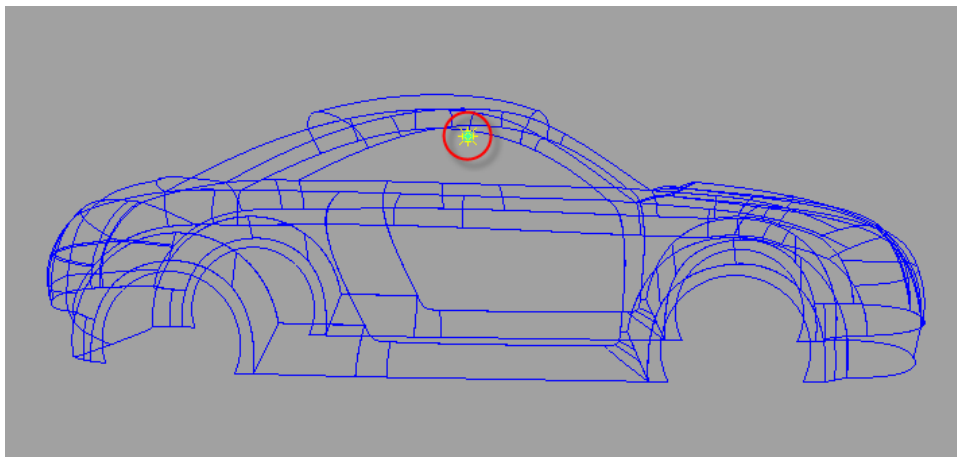## 1. Insert Light

We must insert some lights before rendering.

Click: Menu Bar→Windows→Multi-lister→Lights

In All Light dialog: Edit→New Lights

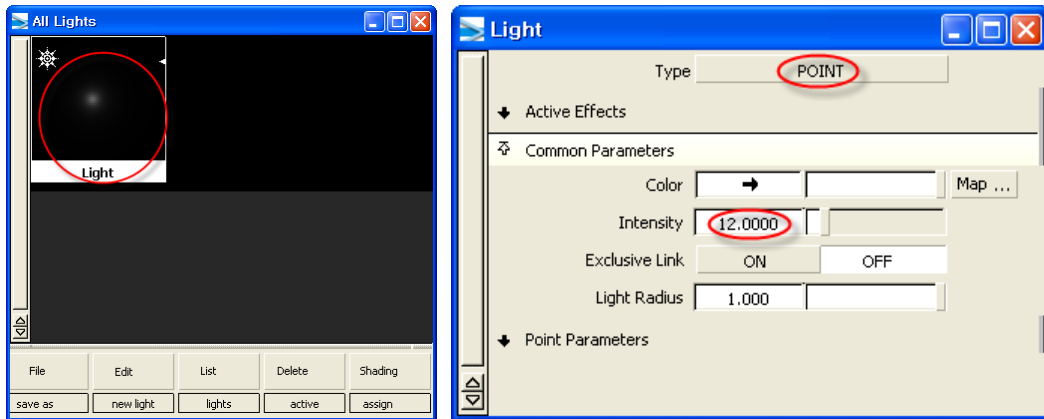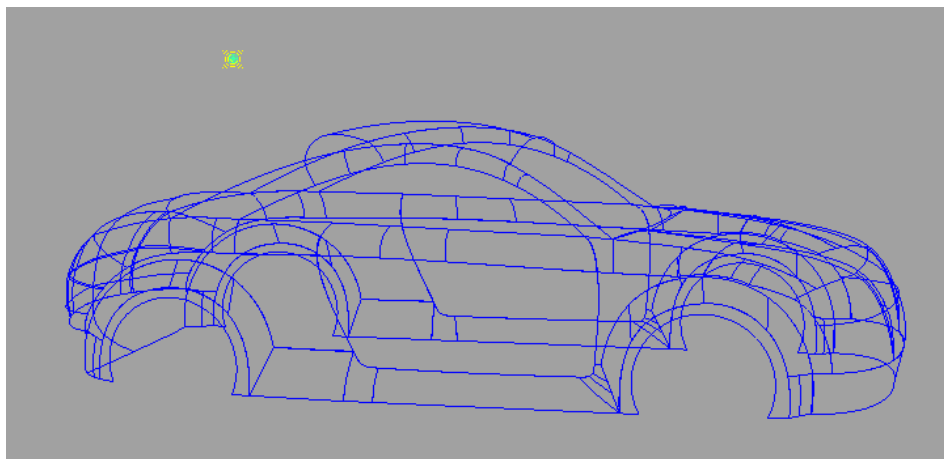

< Insert light >

< Inserted light >

We activate only body layer.

Default type of light is Point light. Adjust the intensity.
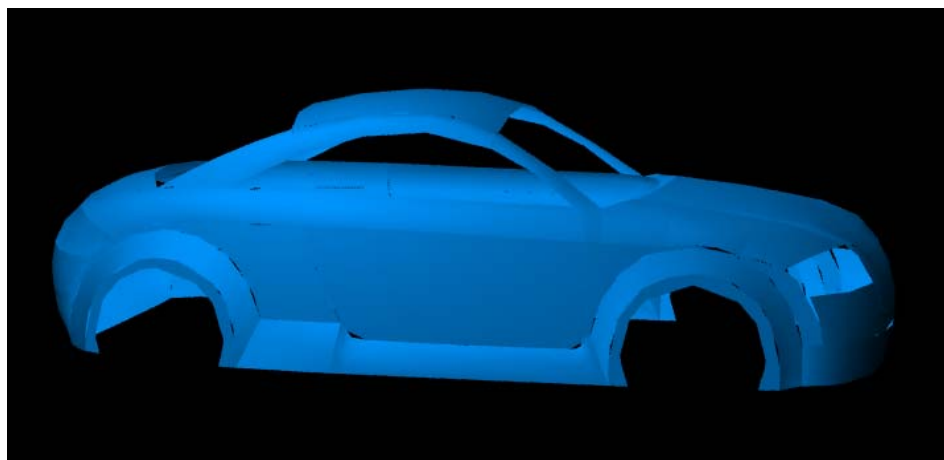
< Adjust the intensity >

Move the position of light using 'pick object' and 'move' in palette.

< Move the position of light >
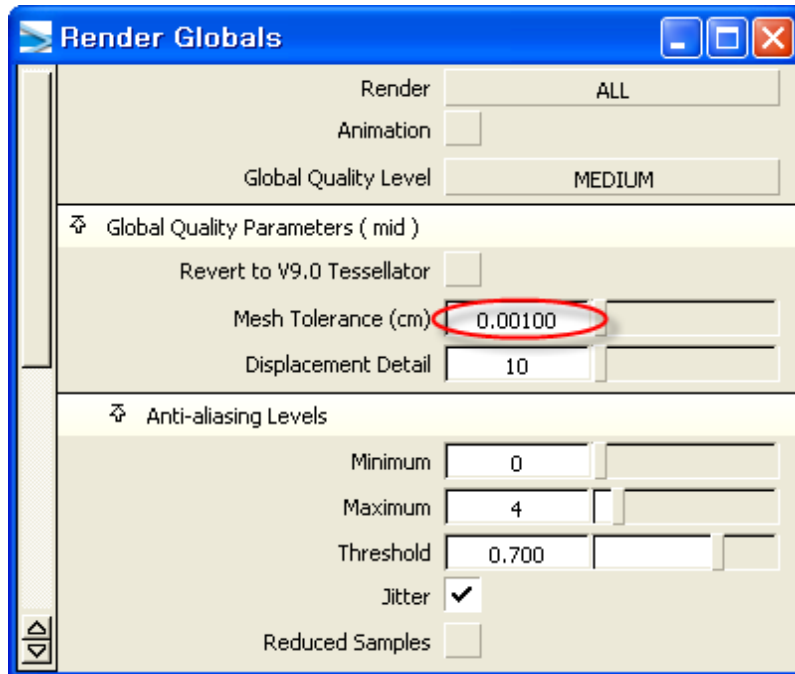
Now, Render it.

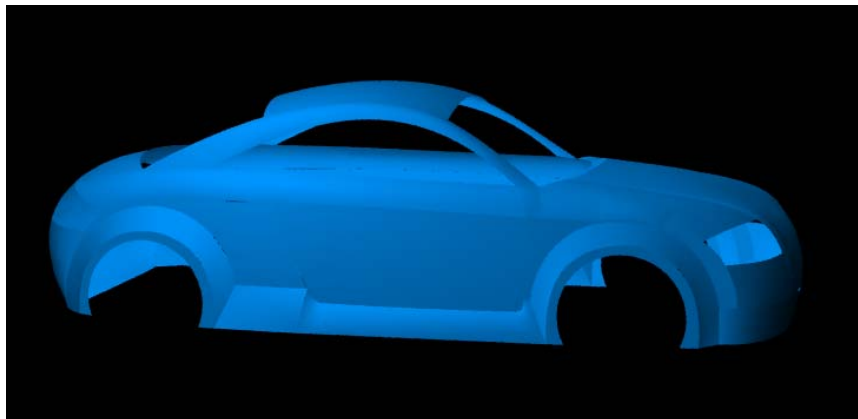Click: Menu Bar→Render→Direct Render

< First render >

Adjust the mesh tolerance.

Click: Menu Bar→Render→Globals

Modify the mesh tolerance to the least number.

< Mesh Tolerance >

Re-Render it.
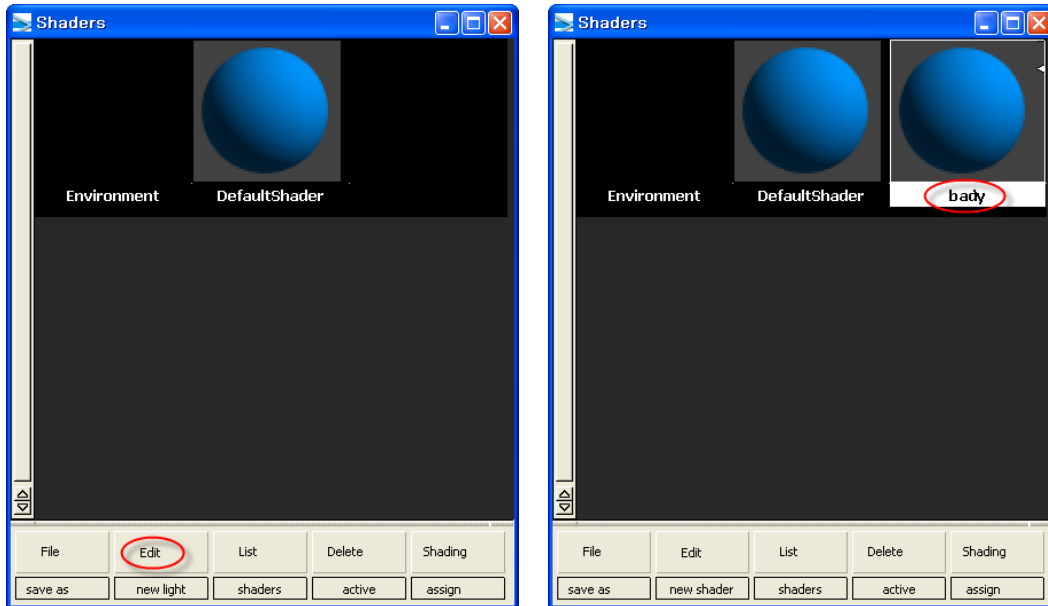

< After modified >

2. Make Shader

Now create some shaders.

Click: Menu Bar→Windows→ Multi-lister→Shader
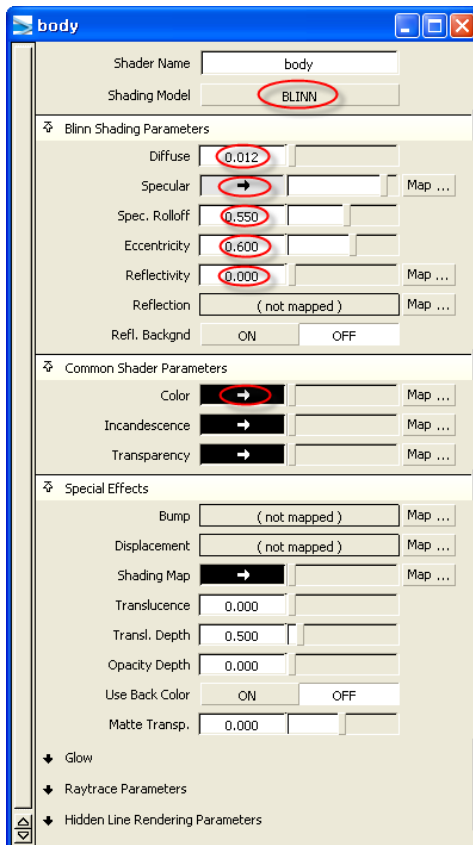
In Shaders dialog: Edit→New Shader

Double Click the name tap and modify it to 'body'.

< Create new shader >

Now double click the body icon. Then a dialog appears. Modify some properties.
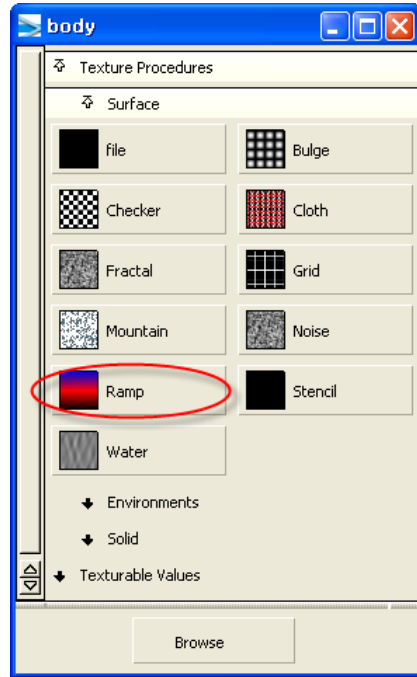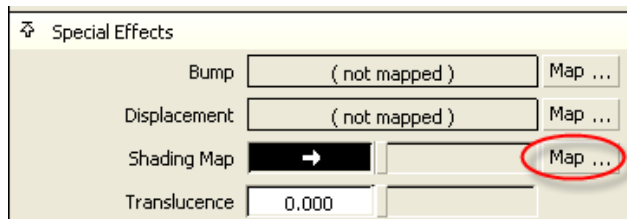

- Shading Model: BLINN

- Diffuse: 0.012
- Specular: light gray
- Spec. Rolloff: 0.550
- Eccentricity: 0.600
- Reflectivity: 0.000

- Color: black
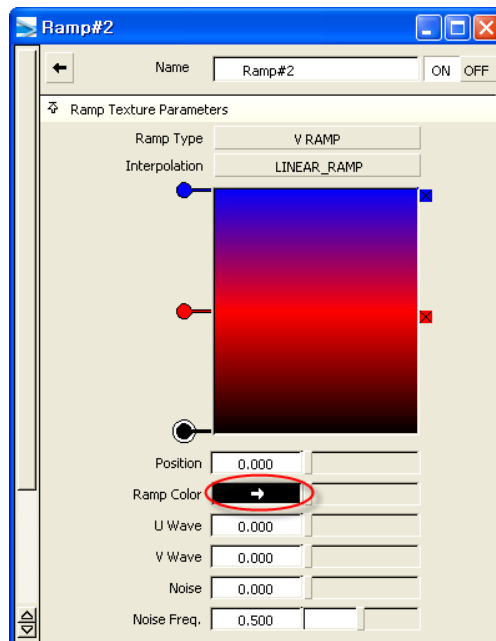
< Modify properties >

Click: Map button beside the Shading Map

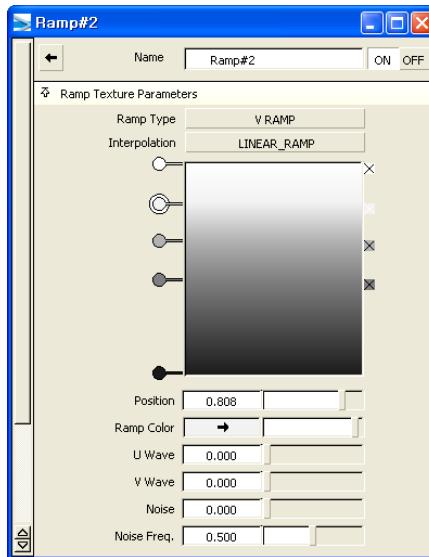Click: Ramp
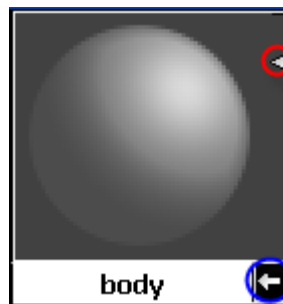
< Choose ramp map >

< Change Ramp Color >

To change the color of each bar, select a bar with round handle and change the color of it using Ramp Color tap. To add new color bar, click inside the color box. To delete a color bar, click [X] handle beside it. Make the color that you want with changing and dragging some color bars.
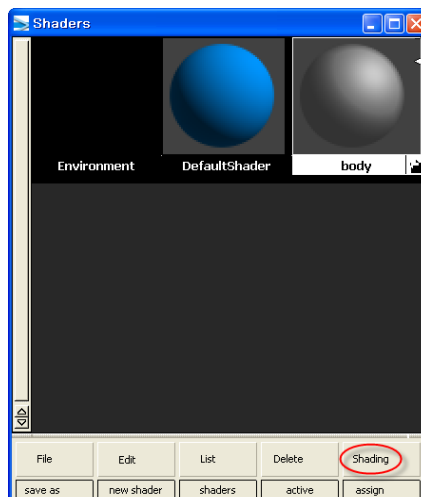
< color changed >

< Shader Icon >

In shader icon, the triangle on the upper right side is the tap to set the resolution of the shader. Set the resolution highest. The arrow on the lower side can show and hide some sub properties like Ramp map.

Now, Assign it to the surfaces. Select body surfaces with 'Pick Object' function. Then Shading→Assign Shader in Shaders dialog.

<div align="center">< Assign Shader ></div>

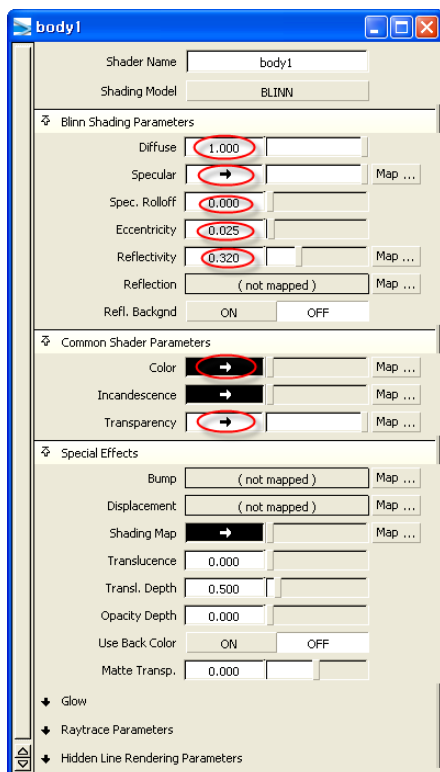Direct Render.
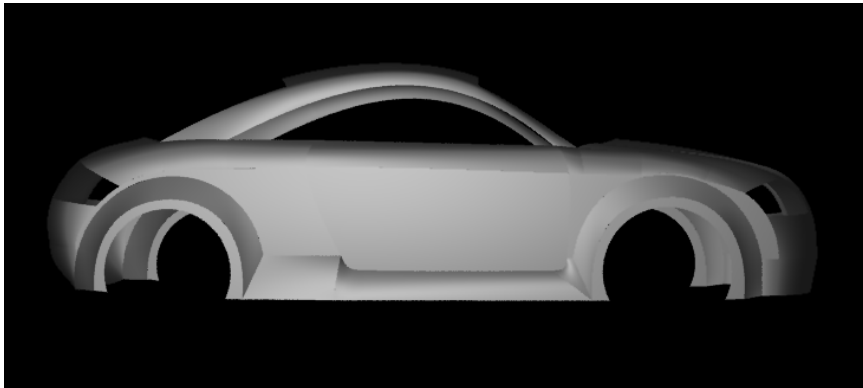
<div align="center">< Shader ></div>

3. Highlight Effect

In Shaders dialog: Edit→New Shader, then change the name to body1.
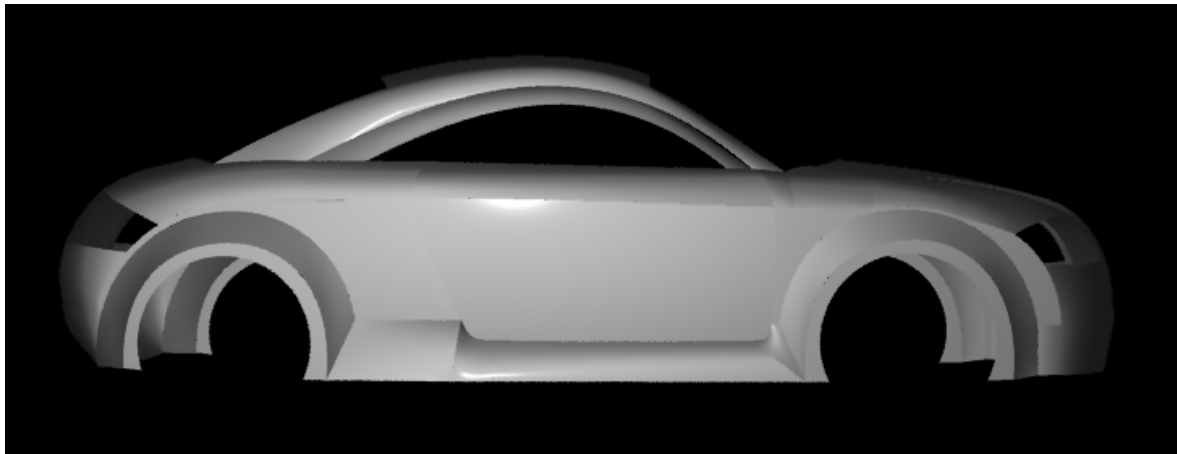
Modify some properties.

- Shading Model: BLINN

- Diffuse: 1.000
- Specular: white
- Spec. Rolloff: 0.000
- Eccentricity: 0.025
- Reflectivity: 0.320

- Color: black
- Transparency: to the right end

<div align="center">< body1 shader properties ></div>

Then select all surfaces and Shading→Layer Shaders in Shaders dialog.
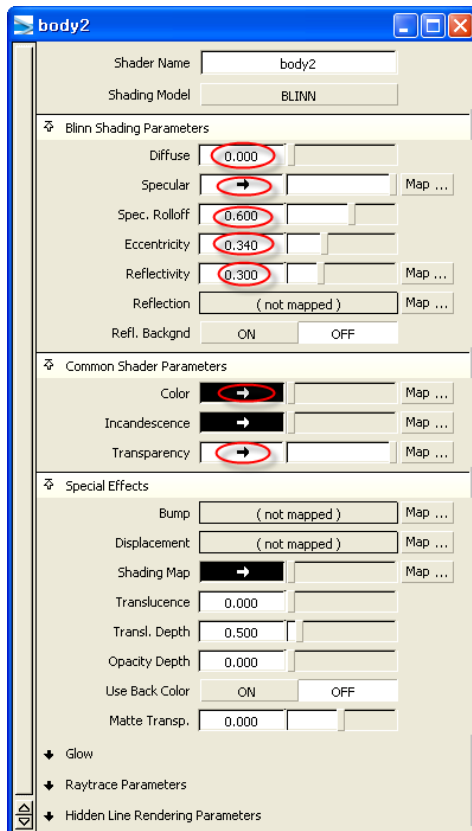
Assign shader is default shader, and Layer Shaders are additional sub shaders for some special effects.

< Sharp highlight >

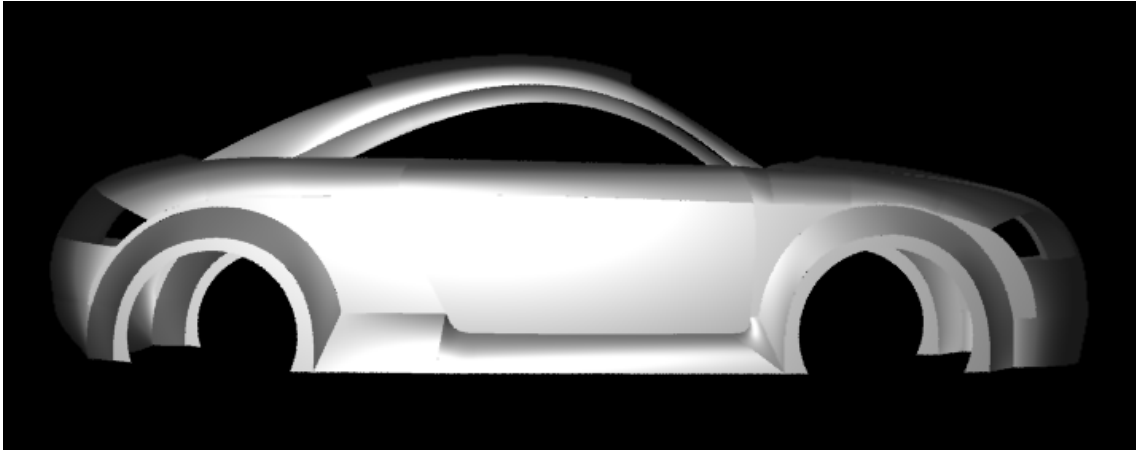Make the highlight a bit smooth.
Add new shader named 'body2' and modify the properties of it.

- Shading Model: BLINN

- Diffuse: 0.000
- Specular: white
- Spec. Rolloff: 0.600
- Eccentricity: 0.340
- Reflectivity: 0.300

- Color: blact
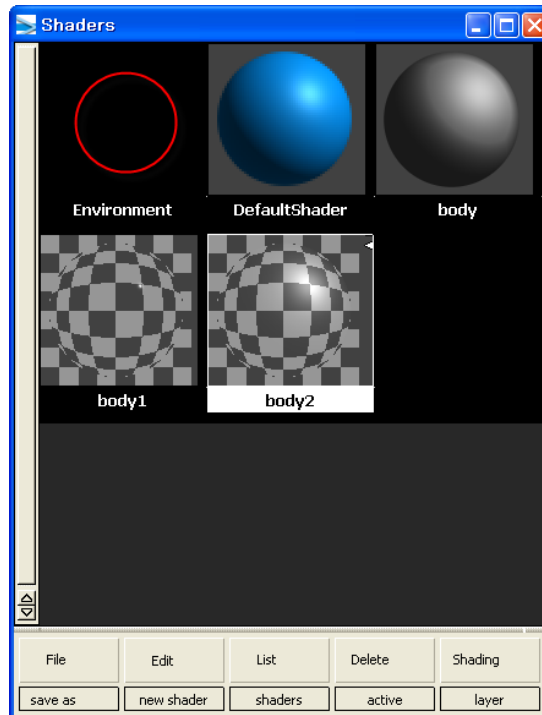- Transparency: to the right end

< body2 shader properties >

Then Shading→Layer Shaders.

< Smooth highlight >

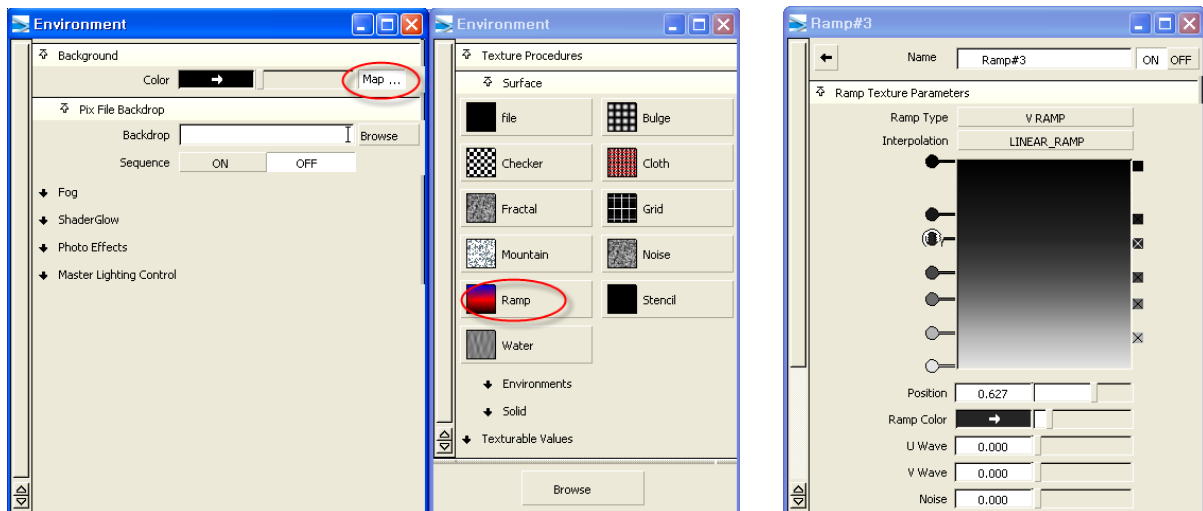## 4. Change background color

Double click 'Environment' icon in Shaders dialog.

< Environment >

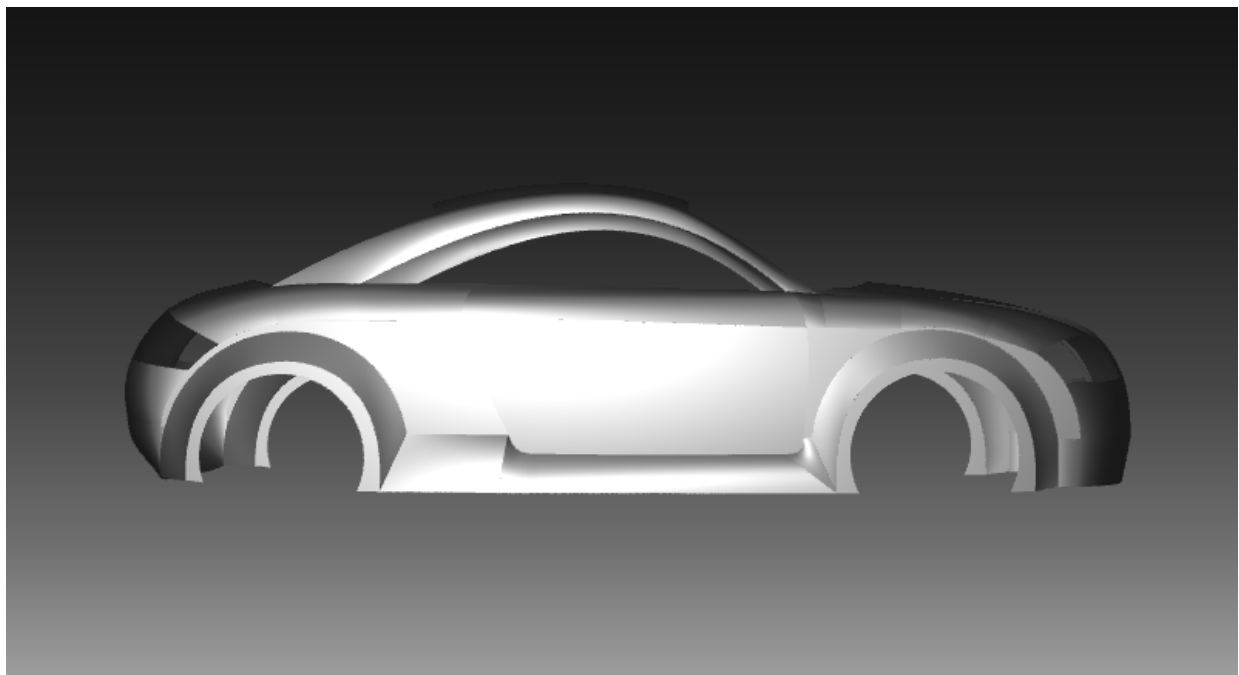Change color using Ramp Map.

< Change background color >

Result is as follows.
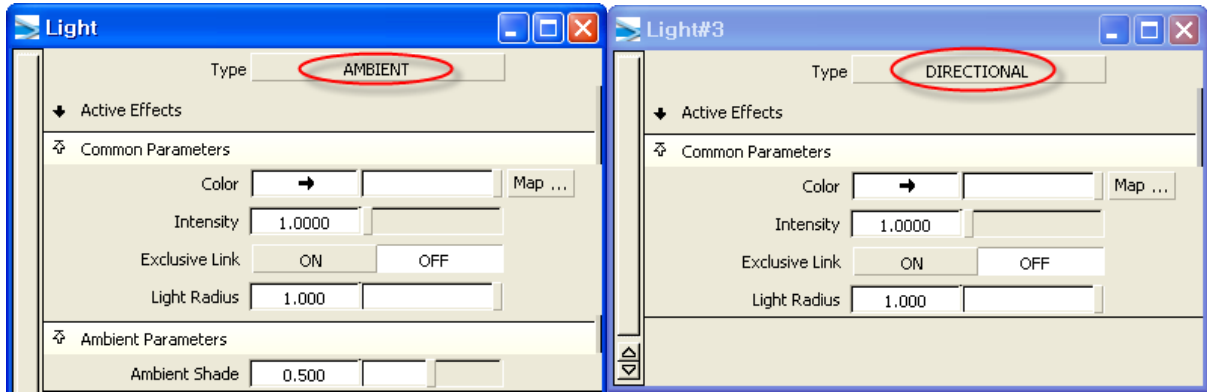

< Background color changed >
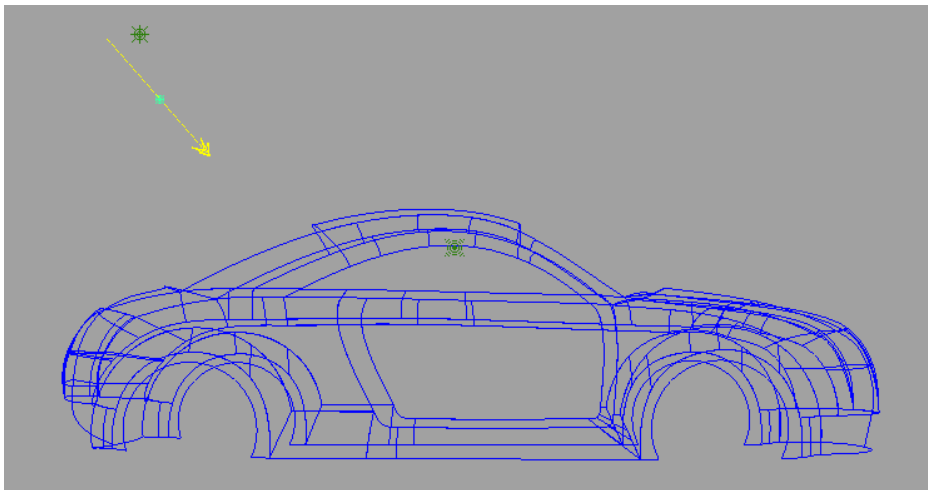
5. Add Lights and Change Properties

 Click Menu Bar→Windows→Multi-lister→Lights or List→Lights in Shaders dialog. Then All Lights dialog appears.

Now, Select Edit→New Light. Double click the light icon and modify it to Ambient. Make one more and modify it to Directional.

< Insert two more lights >
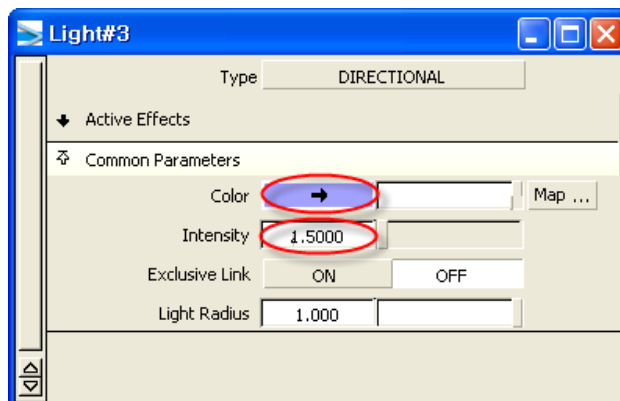
Change position and direction of the lights using Move and Rotate.

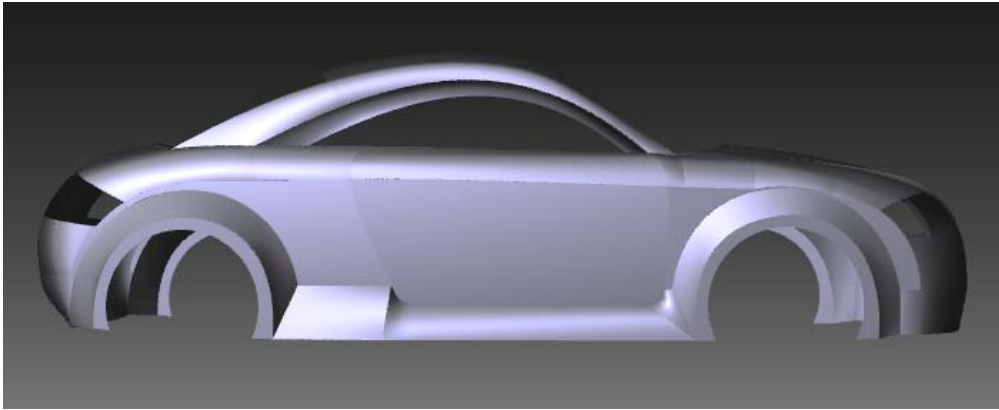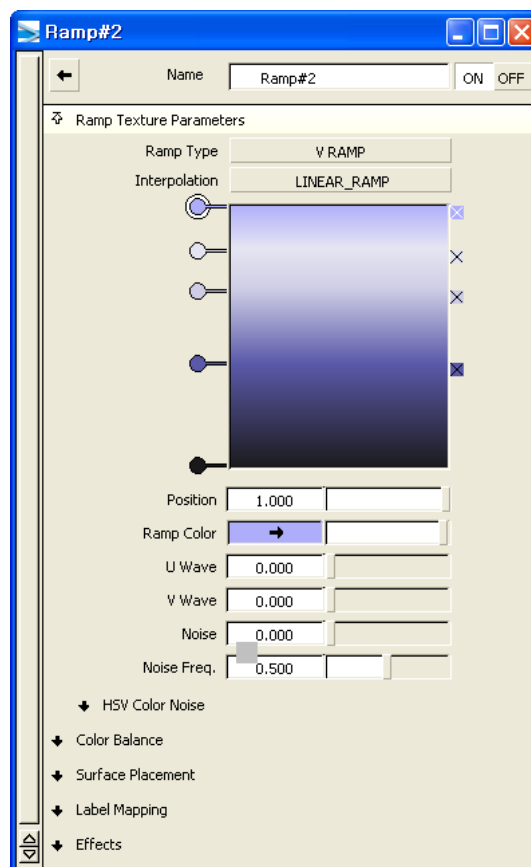< Change position and direction >

Now change the color and intensity of lights.

< change color and intensity >

Result. The color of surfaces is a bit different from before. Because the color of light has been changed.
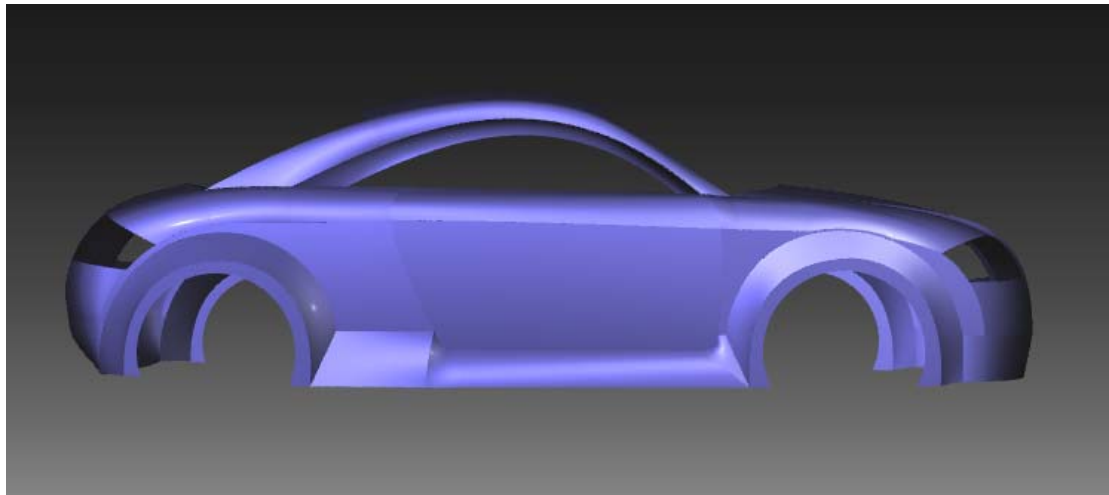
< After color of the light changes >

6. Change Shader's Color

Change the body shader's Ramp map as follows.

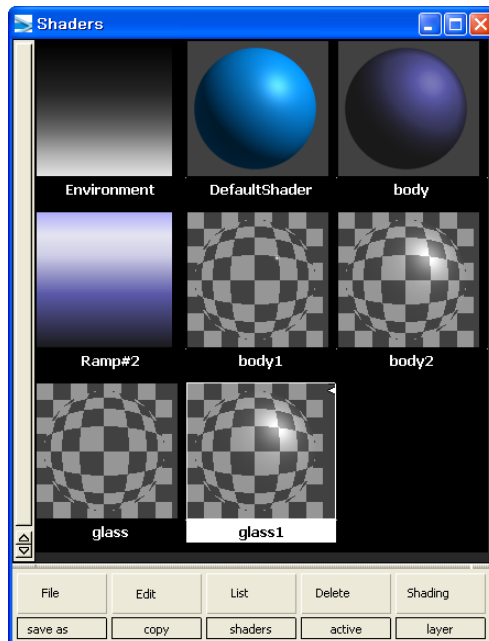
< Change body shader's color >

Direct Render it.
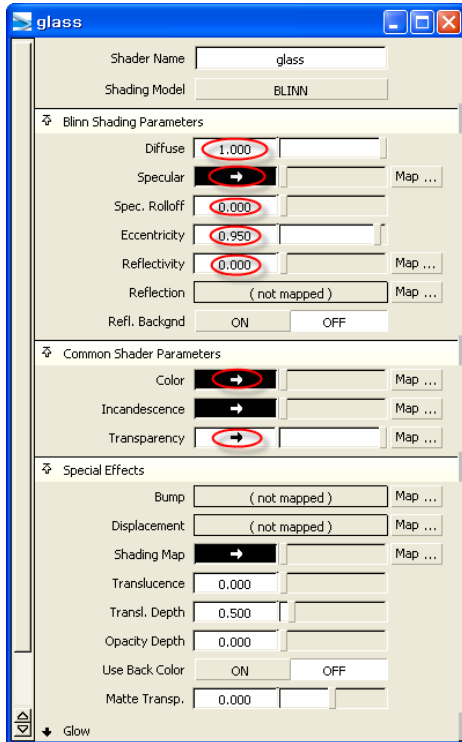
< body color changed >

7. Glass Effect

Deactivate body layer and activate glass layer. Create new shader and name it 'glass'. Then make copy of body2 shader using Edit→Copy button and name it 'glass1'.

< Adding glass shaders >

Modify glass shader's properties and Assign Shader.
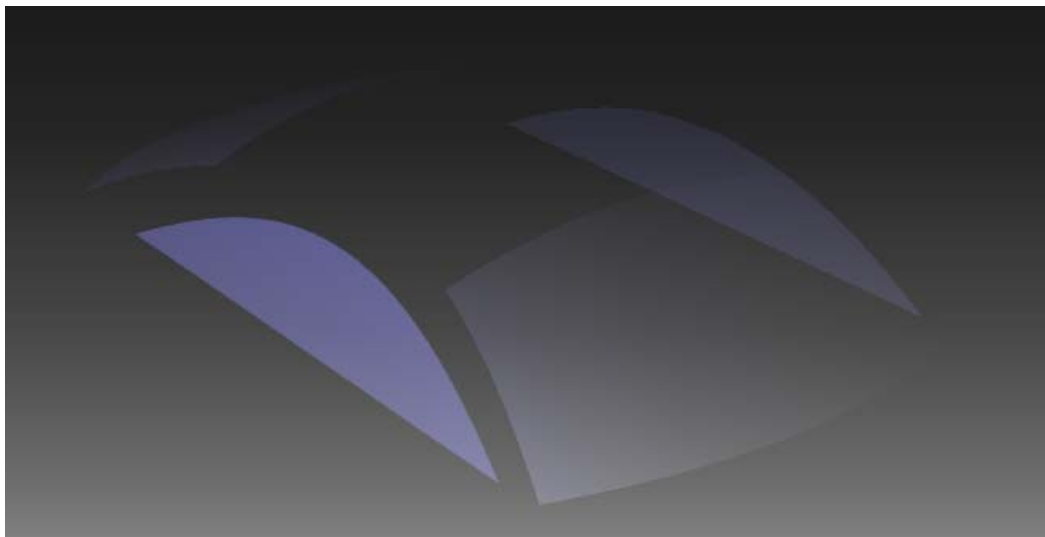
< glass shader's properties >

- Shading Model: BLINN

- Diffuse: 1.000
- Specular: black
- Spec. Rolloff: 0.000
- Eccentricity: 0.950
- Reflectivity: 0.000

- Color: black
- Transparency: to the right end

Then Layer Shaders with glass1 shader.
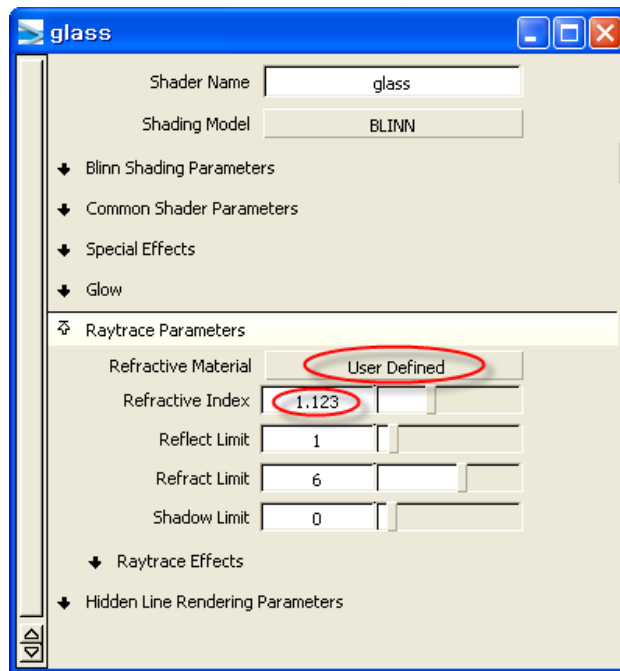
The result as follows.
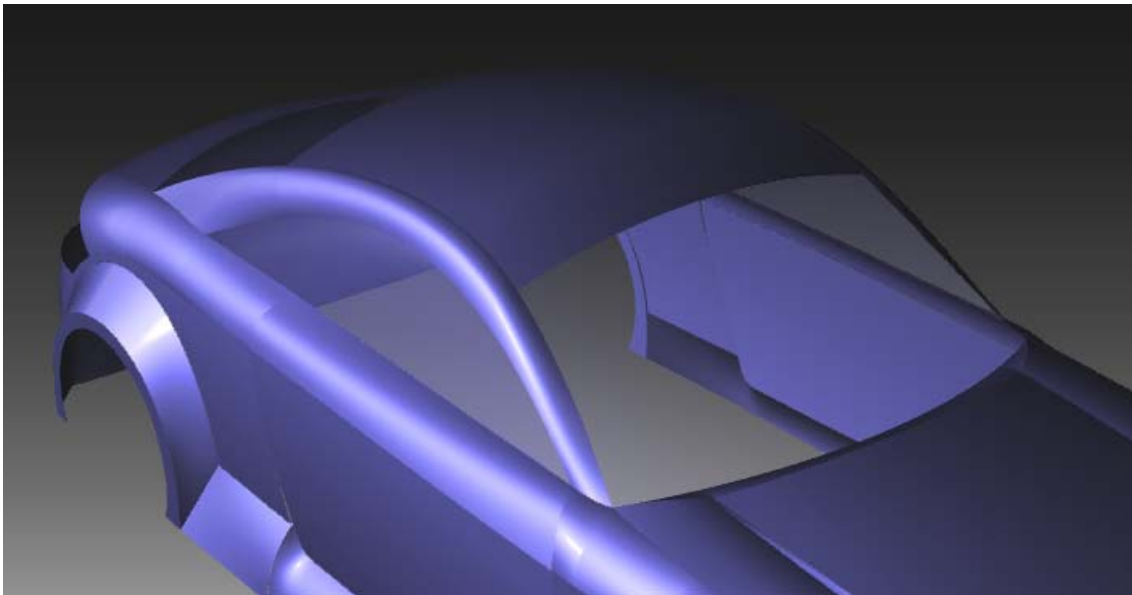

< glass render >

We can adjust the refraction of the glass.

Double click glass shader icon. Then in Raytrace Parameters, change Refractive Material to User Defined and modify Refractive Index to the number near 1. 1 means no refraction exist.
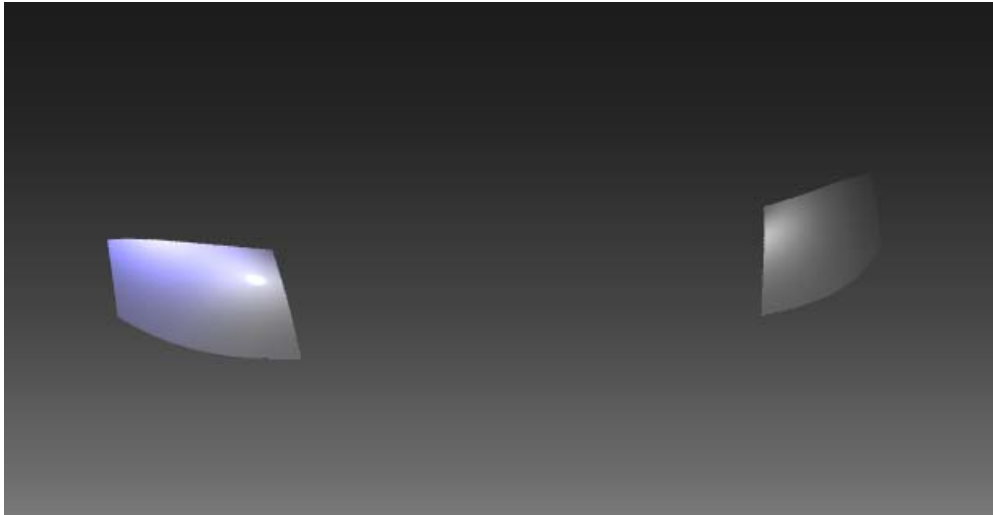
< Adjust refraction >
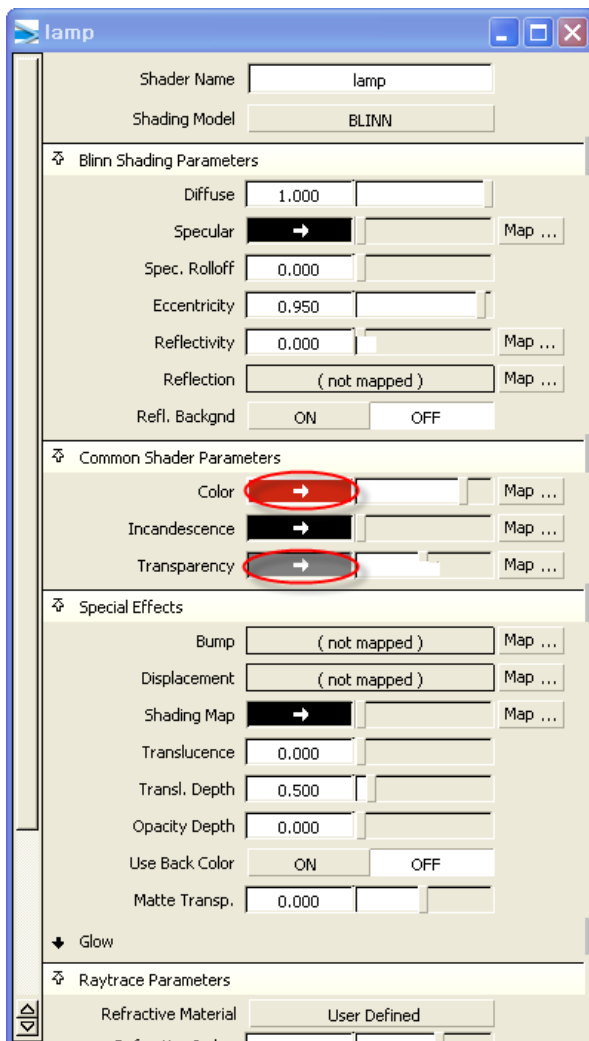

< No refraction >

8. Lamps

Activate lamp layer. Select front lamp first. In this case, we can reuse exist shaders. Assign Shader with glass shader then Layer Shaders with body1, body2 shader.

< Front lamp >

For rear lamp, change properties.

Copy glass shader and name it 'lamp'. Then modify some properties. Then Assign Shader with it and Layer Shaders with body1, body2.

- Shading Model: BLINN

- Diffuse: 1.000
- Specular: black
- Spec. Rolloff: 0.000
- Eccentricity: 0.950
- Reflectivity: 0.000

- Color: Red
- Transparency: 60% to right
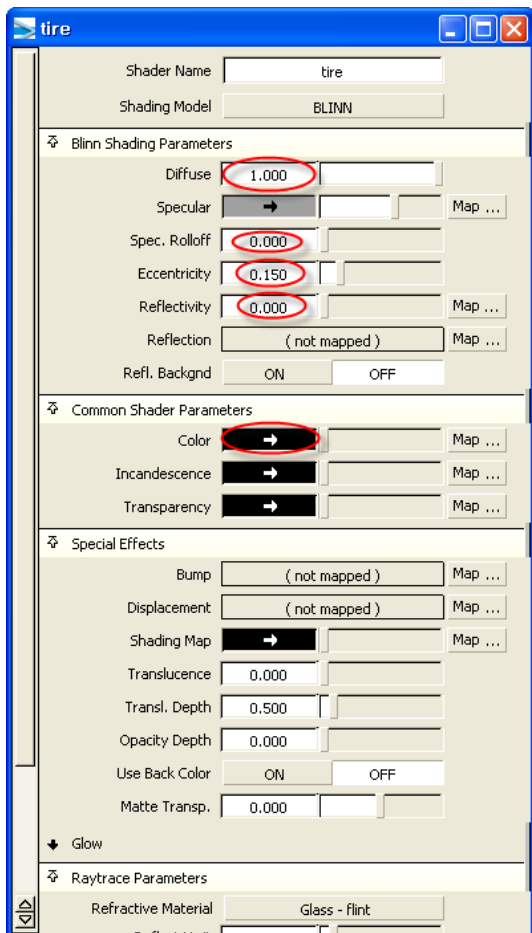
< lamp shader's properties >
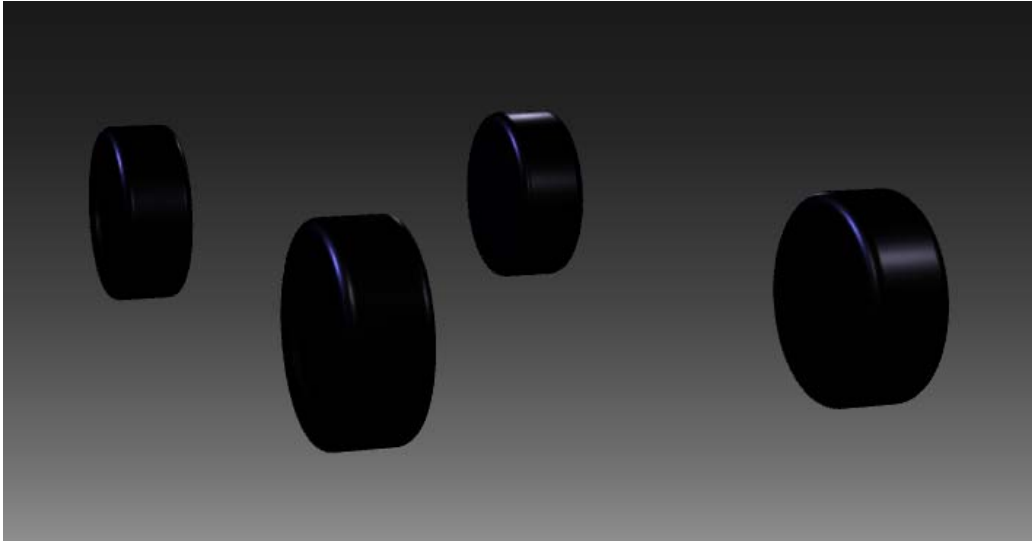
< Rear lamp >

9. 타이어의 렌더링

Now, It's time for tire. Activate tire layer. Add tire shader and modify it.

- Shading Model: BLINN

- Diffuse: 1.000
- Specular: gray
- Spec. Rolloff: 0.00
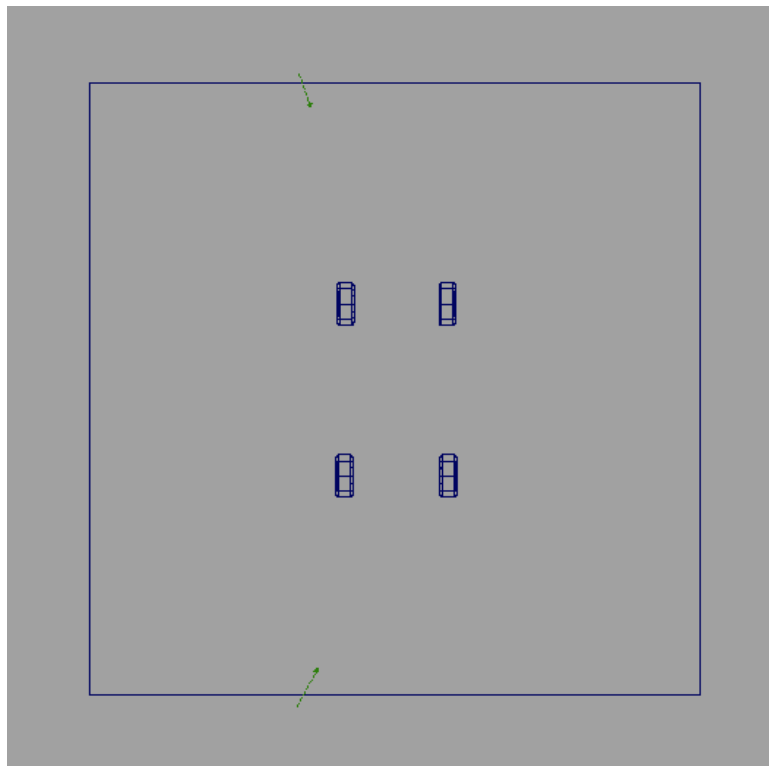- Eccentricity: 0.150
- Reflectivity: 0.000

- Color: black

< tire shader's properties >

Assign Shader it
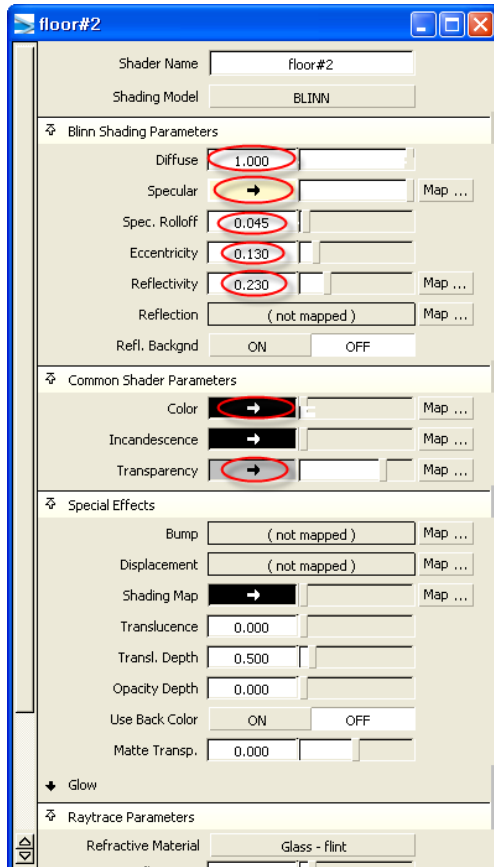
< tire >

10. Make Shadows

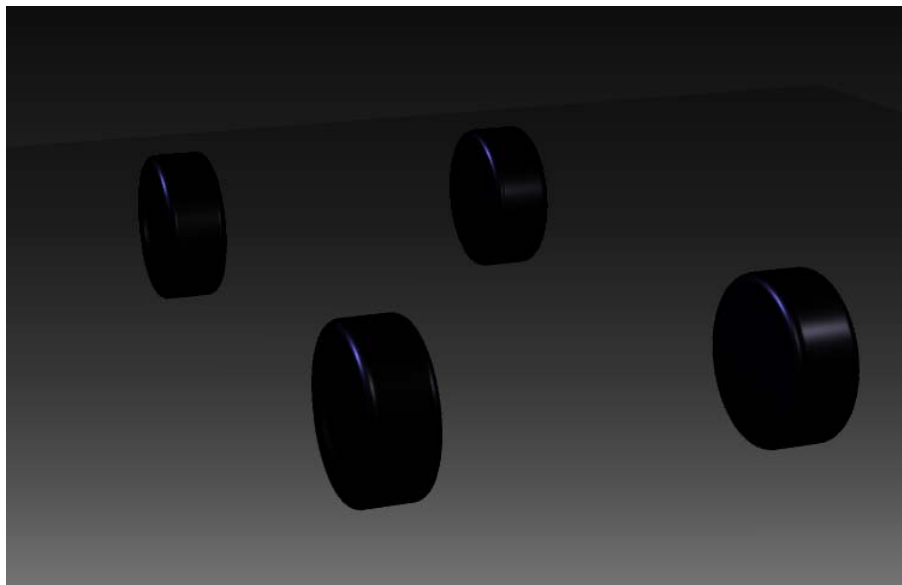First make floor. Using Pallet→Objects→Plane.

< Make floor >

Add floor shader and modify it.

- Shading Model: BLINN

- Diffuse: 1.000
- Specular: light yellow
- Spec. Rolloff: 0.045
- Eccentricity: 0.130
- Reflectivity: 0.230

- Color: black
- Transparency: 70% to the right

< floor shader's properties >
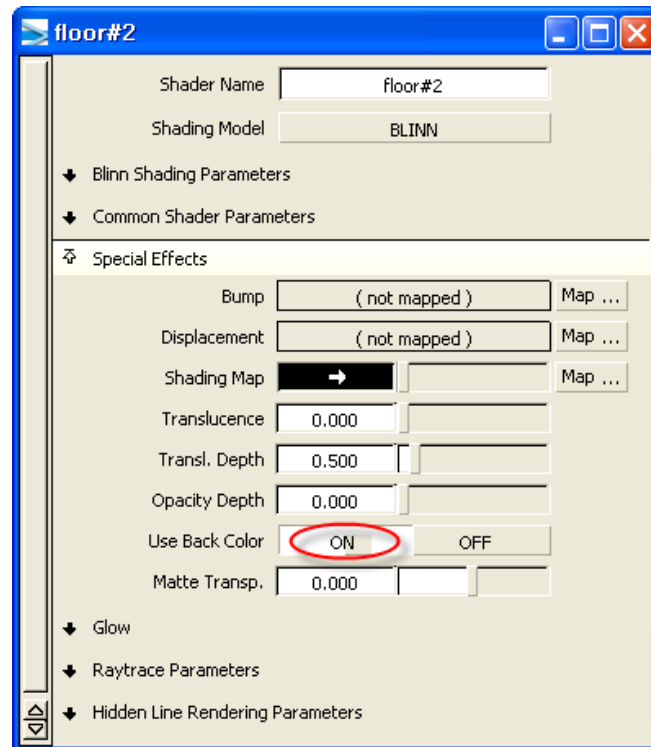
Assign Shader it to floor. (Just select the floor not tire)

< floor render >
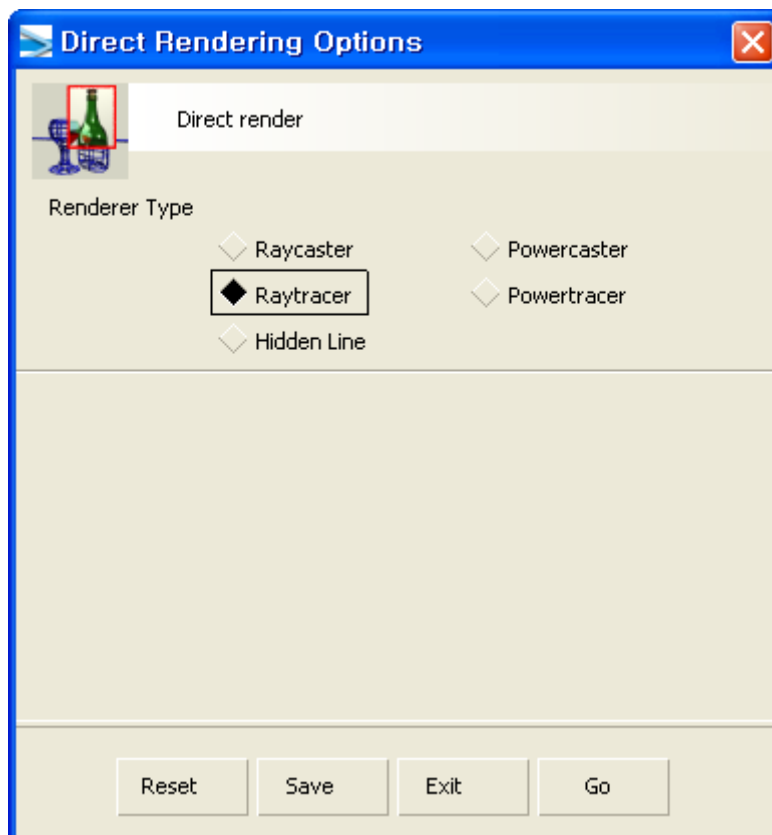
Now make shadows. Two options are needed.
First, double click floor icon and turn on the 'Use Back Color' option.

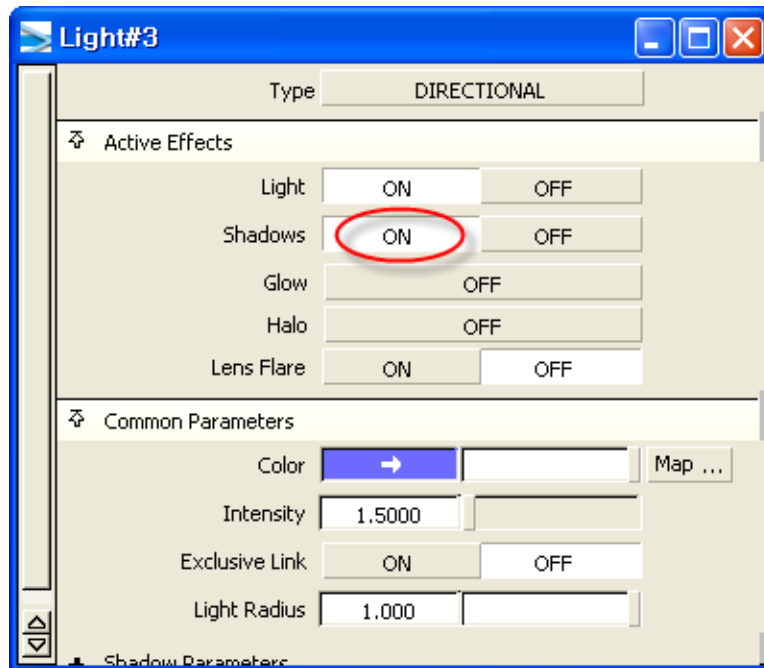< Use Back Color - On >

Then click Menu Bar → Render → Direct Render and set Renderer Type to 'Raytracer'.

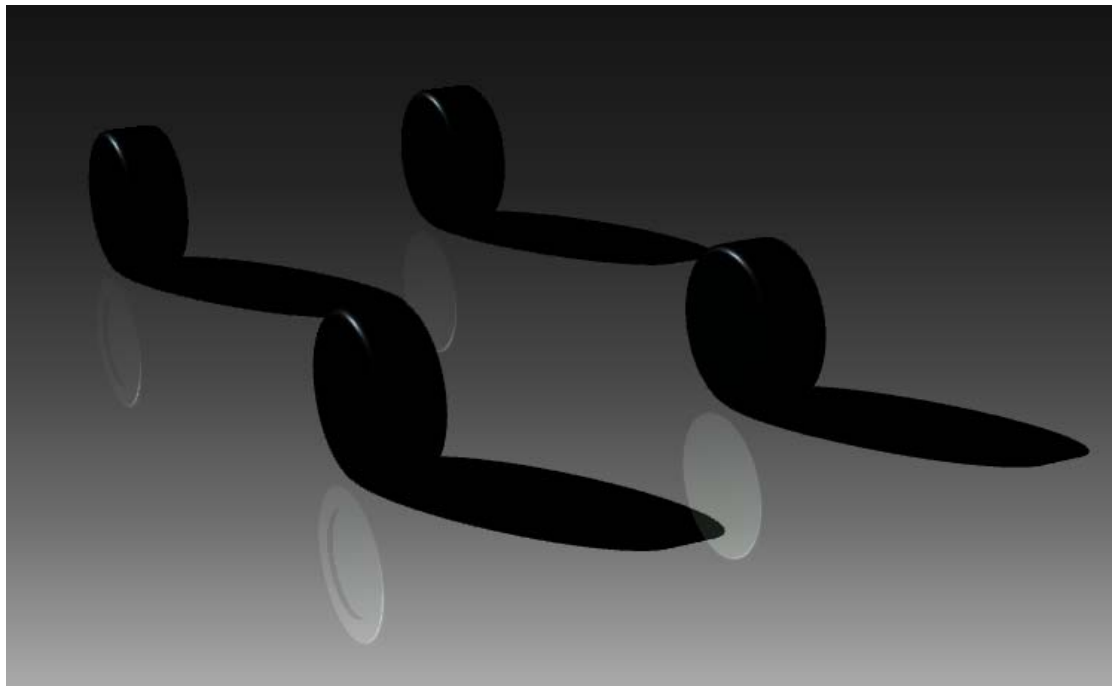< Set Raytracer >

Now make shadows. In Light dialog turn the Shadows on.
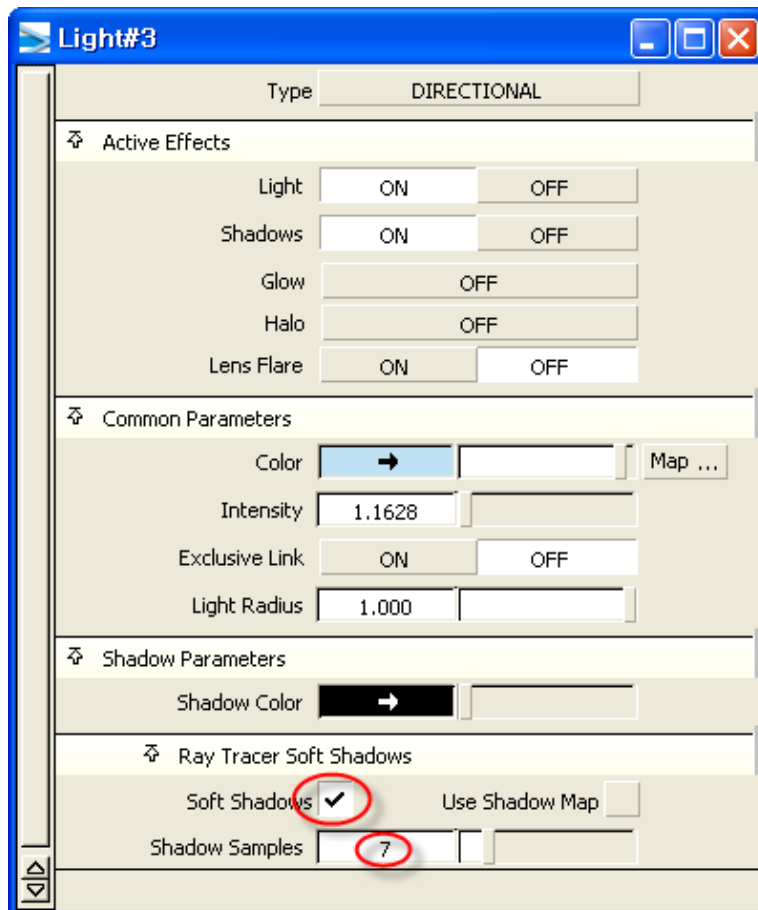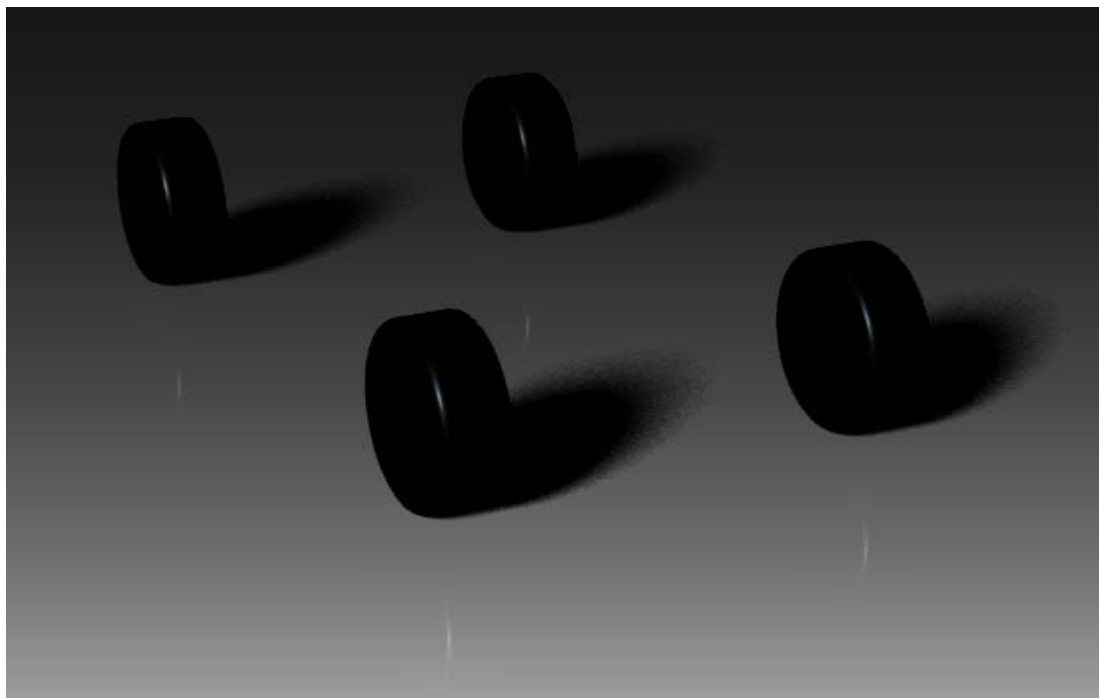

< shadow on >

< Sharp shadows >

Now make shadows smooth. Check 'Soft Shadows' and increase 'Shadow Samples' number. The larger the number is, the smoother the shadows are. But too large number takes much longer time for render.

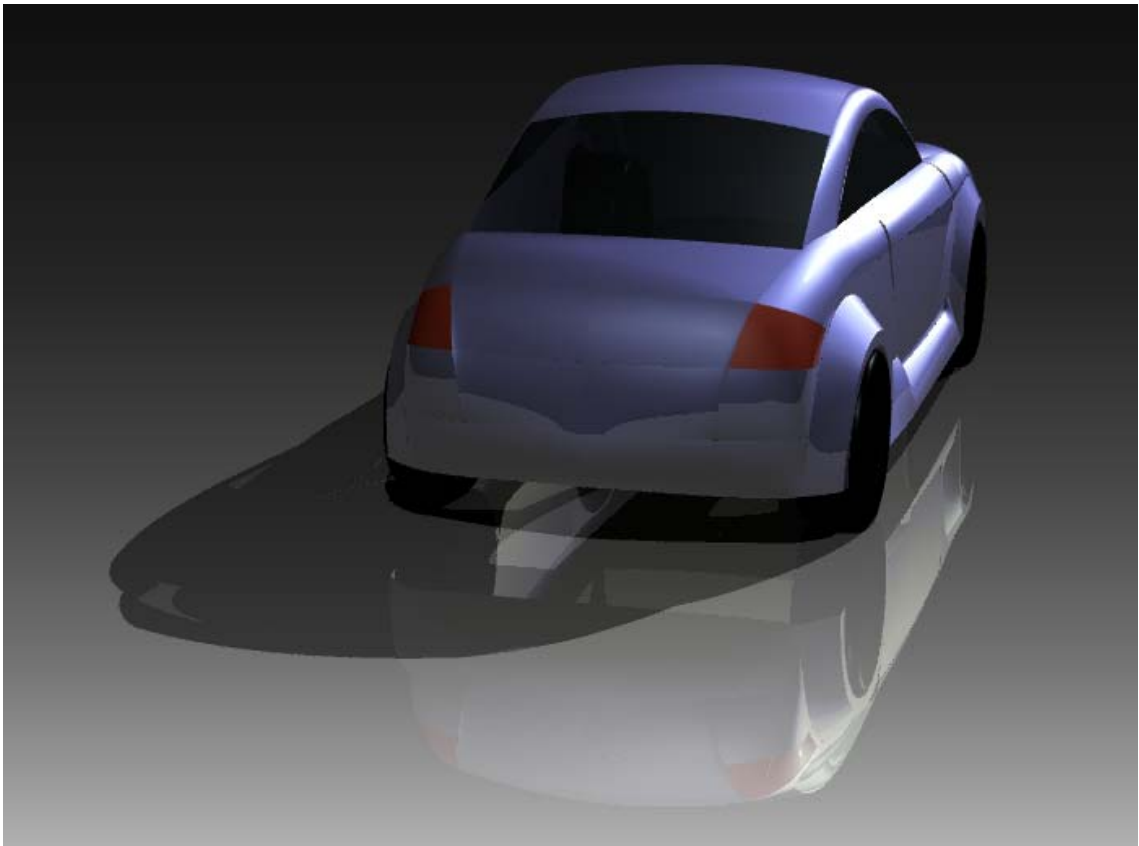< Check Soft Shadows >

< Smooth shadows >

Now, activate all layers and render it. The final result as follows.

< Final result >