

## Make your own 3D Interactive visualization using SpiderGL

1. Download **3D Interactive** and **BioBlenderv0.5.2** folders;
2. Launch **Blender** from the **BioBlenderv0.5.2\Bin** folder;
3. Select your protein (**BioBlender Select PDB File**) and import it in the Blender scene (**Import PDB** button);
4. In **BioBlender MLP Visualization** panel set the parameters for MLP calculation (**Formula** and **Grid Spacing**) and press **Show MLP on Surface** button; in the 3D space the surface is imported and MLP is shown as levels of grey (bright for hydrophobic areas and dark for hydrophilic ones);
5. Modulate **Contrast** and **Brightness** sliders to enhance the MLP visualization;
6. Press **Render MLP on Surface** button to visualize MLP as smooth-shiny areas for hydrophobic regions and rough-dull areas for hydrophilic ones;
7. Export the mesh as mol.obj (**File** → **Export** → **Wavefront (.obj)**, disable Rotate X90 and enable Normals) and save it the **3D Interactive** folder;
8. In **BioBlender EP Visualization** panel set the parameters for EP calculation and press **Show EP**; the field lines are calculated and imported in the Blender scene with the animated particles;
9. Copy **MLPBaked.png**, **0001.png**, **tmp.pdb** and **tmp.dx** files (tmp.dx is the EP) from the **BioBlenderv0.5.2\Bin\2.55\scripts\ui\BioBlender\tmp** folder in the **3D Interactive** folder;
10. Open **scivis.exe** (**BioBlenderv0.5.2\Bin\2.55\scripts\ui\BioBlender\bin\scivis** folder) and calculate the field lines by following the next steps:
  1. Load the **mol.obj** file (click on **OBJ** button);
  2. **READ DX Potential** (import **tmp.dx** from the **3D Interactive** folder);
  3. press **Assign to ELECTROSTATIC!** button;
  4. In the **LINES** panel:
    1. Press **calculate grad** button;
    2. Press **NEW POW** lines;
    3. Enable **show lines**;
    4. Press **Reduce points strongly** button;
    5. Save the lines as **field\_lines.json** (rename the .txt file) and press **Export JSON** (the file is saved in the)
11. Open Mozilla Firefox 4 or Google Chrome browsers and load **3D Interactive.html** from the **3D Interactive** folder et voilà!

N.B. If the visualization does not work (nothing appears) try one of the next 2 settings:

1. Open Firefox 4 browser, in the navigation line (where you normally type URL) type `about:config`, scroll down until you reach `webgl.force-enabled` which is set "false", double click on this line; it will automatically set to "true". Now, close the browser and re-open it.
2. In the properties panel of Google Chrome, add the startup flag `--ignore-gpu-blacklist`.