

## Chapter 4

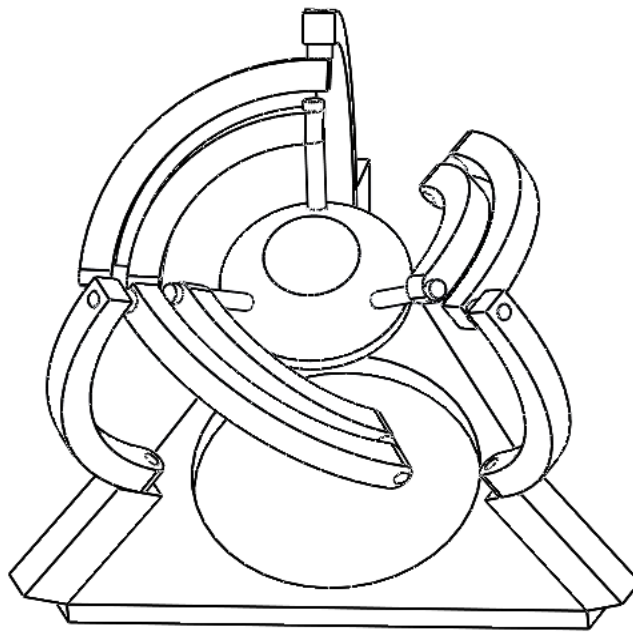
### Simulation

CAD modeling programs can help to explore the shape of components and the interactions of multiple components in assemblies. Another category of software enables us to model dynamics, including applications such as MATLAB and its companion system modeling package Simulink and Working Model.

#### 4.1 Connect Solidwork with MATLAB

In this chapter we discuss how to connect Solidwork with MATLAB through VRML Simulink, which shows that the system works fine.

The first thing that we need is to design the CAD model on Solidwork software as shown in Figure 4.1.



*Figure 4.1: CAD model*

And save a file in term of (file name. wrl), see Figure 4.2.

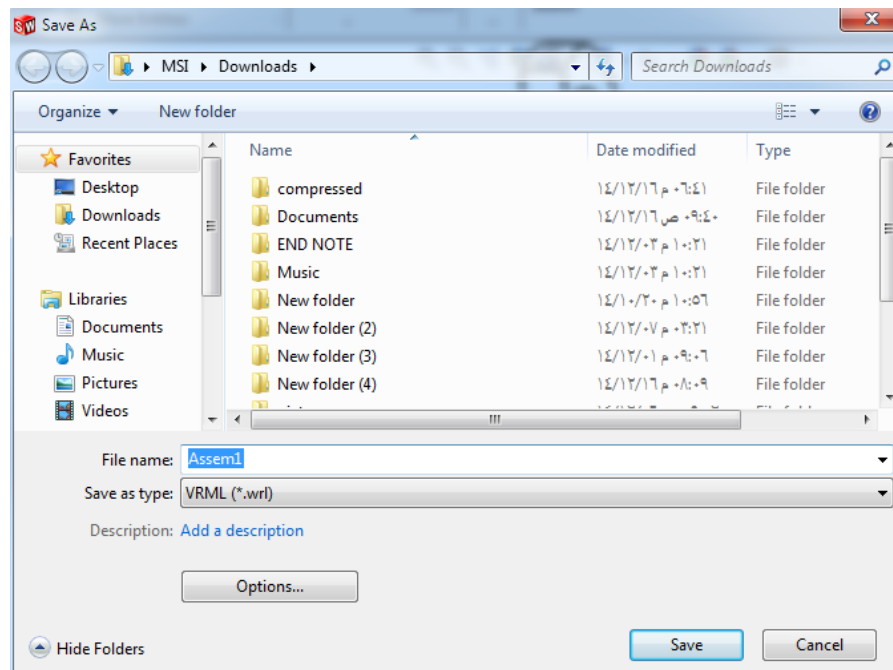


Figure 4.2: form of the file saved from solid work

The second thing is open MATLAB software then the Simulink icon, when we open this icon a libraries of Simulink will open, from this libraries we choose Simulink 3D Animation library. Then choose VR Sink, see Figure 4.3.

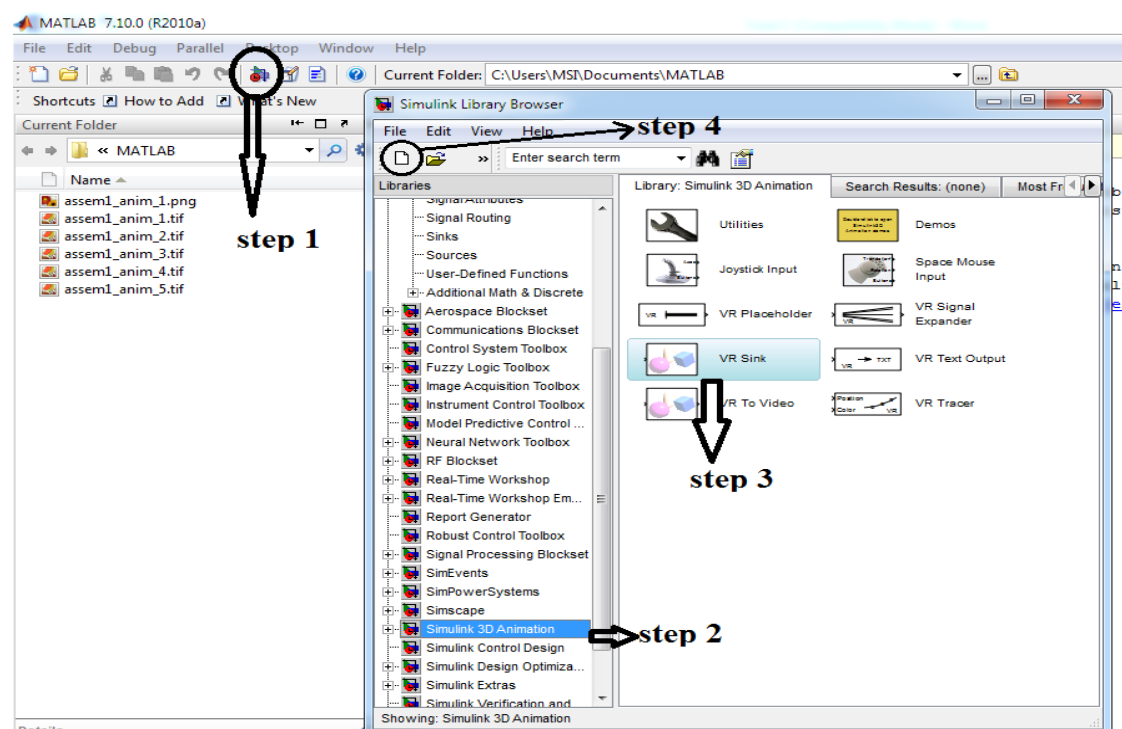


Figure 4.3: steps to open CAD model in matlab

After that we open new model and put the VR Sink to this model as shown in Figure 4.4.

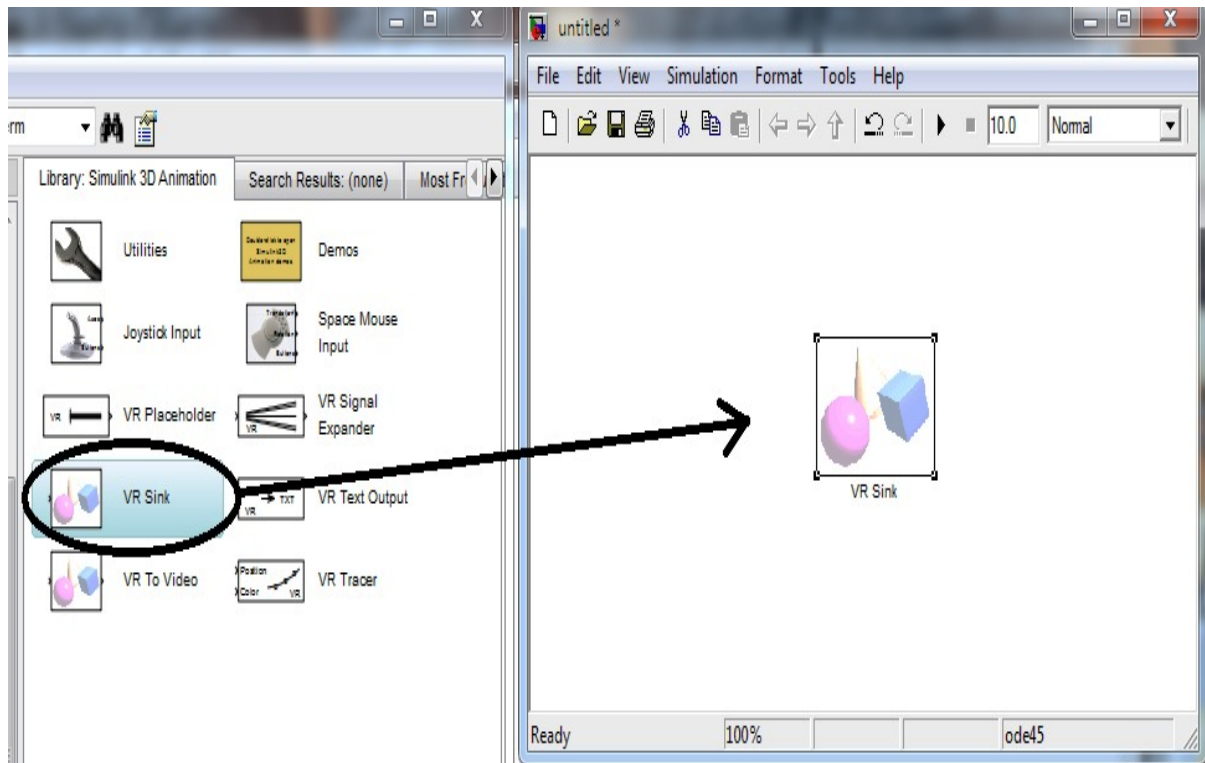


Figure 4.4: How to open VR Sink file

By double click on the block VR Sink a new window will open, from this window, we click on open new file a V-Realm Builder software will open, from this software we open the wrl file that published from Solidwork and save it in wrl form again, then return to the Browser icon and click on it and choose the wrl file that we published from V-Realm Builder, then click ok, see Figure 4.5.

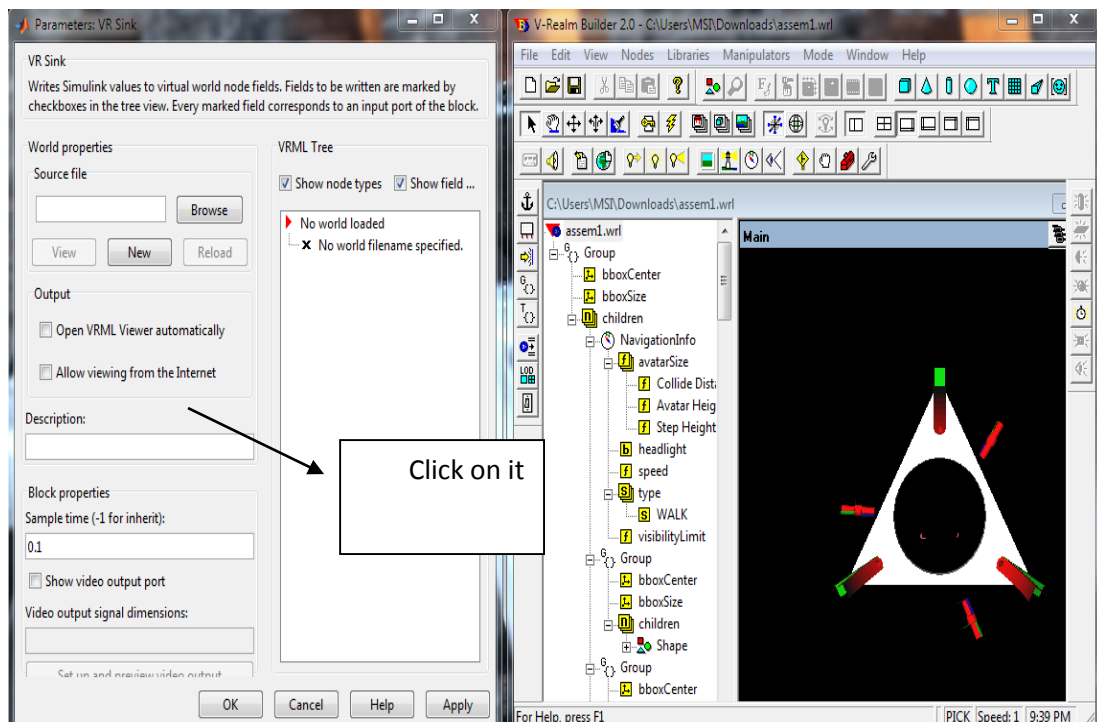
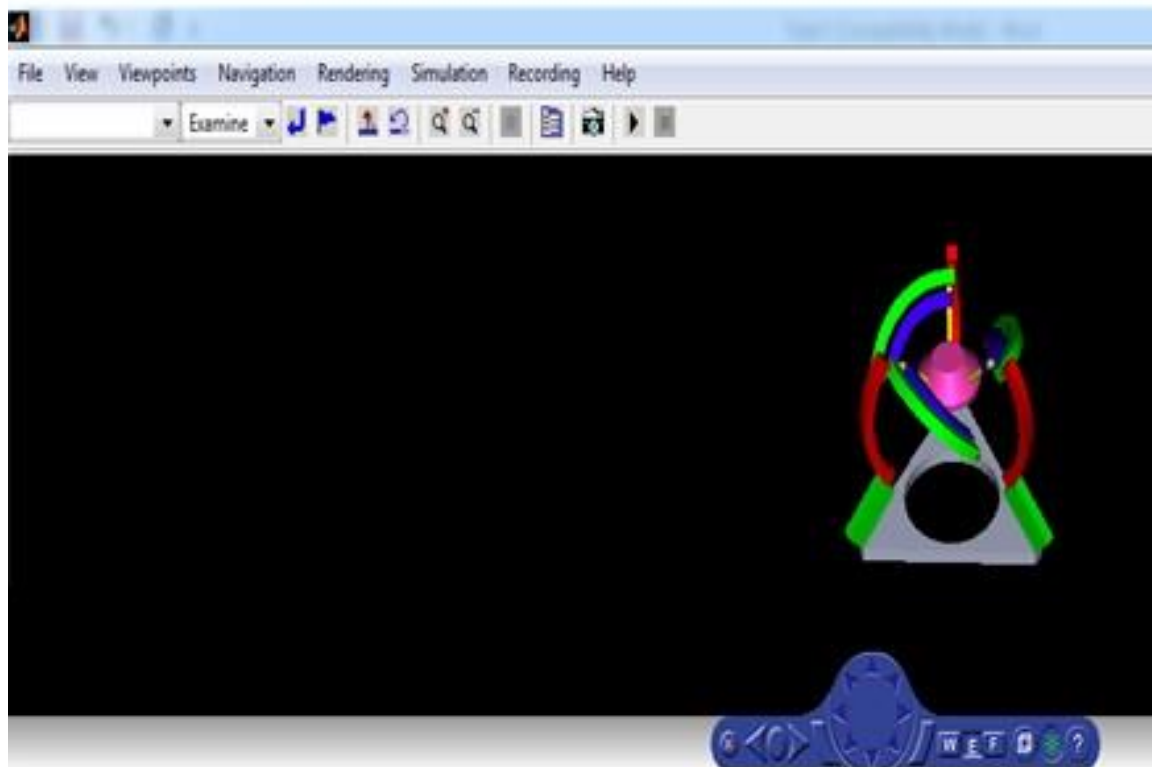


Figure 4.5: How to open V-Realm Builder

After this step return to the VR Sink block and double click on it, a new window will open as shown in Figure 4.6.



*Figure 4.6: The CAD model in MATLAB Simulink*