Length (mm)	L	35
Width (mm)	b	10
Structure thickness (mm)	t_s	0.1
Structure density (kg/m^3)	Ɉ$_s$	8960
PZT thickness (mm)	t_p	0.2
PZT density (kg/m^3)	Ɉ$_p$	7800
PZT modulus (GPa)	c_p	72
PZT dielectric constant	K_3^T	3500
PZT strain constant (m/V^1)	d_{31}	-270×10^{-12}

Using this material helped become familiar with the material before moving on to the next phase of the research project which was a field test using a real size vehicle.

For the next phase, the type of research that was used in this study was sampling different boundary conditions when testing the Piezo Film Sheet in order to attain the most efficient voltage output out of all of them

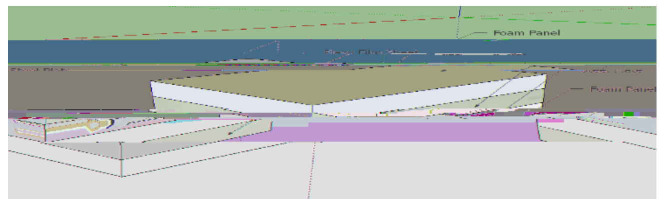

Figure 1

The first boundary tested **(Figure 1)**, was a cantilever orientation. This involved attaching a Piezo film Sheet to a metal surface that will allow the piezo film sheet vibrate once a force acted on it. A foam panel was placed on each side to protect the film. The Piezo film sheet contains a silver ink that contributes with the process of polarization which is how the charge is produced and requires to be protected. Red and black wires were attached to the positive and negative side of the film sheet. The sheets were tested before assembly connecting it to an oscilloscope which read the voltage produced by pressure acting on the material. For this orientation one side of the sheet was clamped simulating on sided fixed.

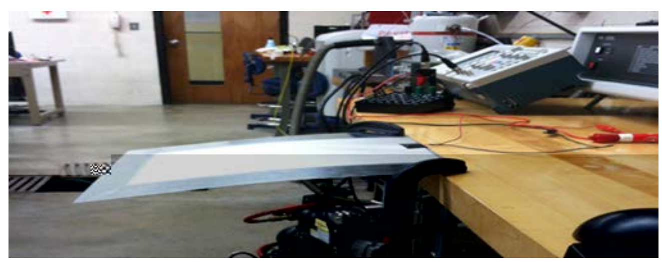

Figure 2

The second boundary condition **(Figure 2)** was a simply supported orientation, To achieve this both sides were left free to rotate