Fig 1

Fig 1 shows the geometry with tow electrodes and the piezoelectric substrate

Electrodes (Al): width (1um) height (0.2um)

Lithium Niobate: width (4.5um) height (22um)



Fig 2

The image in fig 2 shows the conditions for lithium niobate as a Y-Z cut piezoelectric substrate. Please check the values that I have mentioned for Elasticity Matrix, Coupling Matrix, Relative permittivity and density.



Fig 3: free

I have set the boundary condition as free.



Fig 4: Zero Charge condition



Fig 5: Linear Elastic model(LEM):

 I have set two electrode domains as the LEM.



Fig 6:

Set Electric potential as 1V.



Fig 7:Ground



Fig 8: Fixed Constraint



Fig 9: Periodic boundary condition

With u, v, V are on continuous.

Fig 10 Y displacement



Fig 11 X displacement



I have plotted Current and frequency at one of the electrode as shown in the above graph.

I have used current equation as: Pzd.nJ\* 1e-6[m]