



# The Ion Mobility Simulation Software (IMSS): User's manual

**Version 1.0**

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1. Open MatLab and run FAIMS.m file.
2. Input the measurement parameters.

Vm: Max Flow Velocity[m/s]	0	Alpha 2	0
g: Gap height [m]	0	Alpha 4	0
Vpp: Voltage peak to peak [V]	0	Ko: Ion mobility [m <sup>2</sup> /Vs]	0
L: Ion filter length [m]	0	Frequency [Hz]	0
n: Number density [1/m <sup>3</sup> ]	0	Duty cycle [%]	0
Compensation voltage (CV):			
CV Min [V]	0	CV Max [V]	0
CV Step size [V]		0	

Example:

Parameter's input fields			
Vm: Max Flow	50	Alpha 2	-3.14e-5
g: Gap height [m]	500e-6	Alpha 4	9.54e-10
Vpp: Voltage peak to peak	200	Ko: Ion mobility	1.64e-4
L: Ion filter length [m]	12e-3	Frequency [Hz]	500000
n: Number density [1/m <sup>3</sup> ]	2.5e25	Duty cycle [%]	33
Compensation voltage			
CD Min [V]	-10	CD Max [V]	10
CD Step size [V]		2	

3. Select the voltage waveform:








4. Input the number of ions to be simulated:

Number of Ions	0
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5. Press the Graph button:



**Other options:**

-  Hold the ion path plots for all the Compensation Voltages.
-  Hold previous ion spectra.
-  Save the data of the simulated ion paths in an Excel file (SimData.xls) inside the software folder, (The X and Y values of each ion are saved in different data sheets).
-  Save the data of the simulated ion spectra in an Excel file (SimData.xls / Data sheet "Spectrum") inside the software folder.
-  Takes a screen shot (PrtScn.png) of the software main window and save it inside the software folder.