

*The following sections contain plots generated using MATLAB program*  
*Document: 2 || Ahmad Osman - 101070948*

### **ELEC 4700 Assignment 3**

### **ELEC 4700 Assignment-2 Finite Difference Method**

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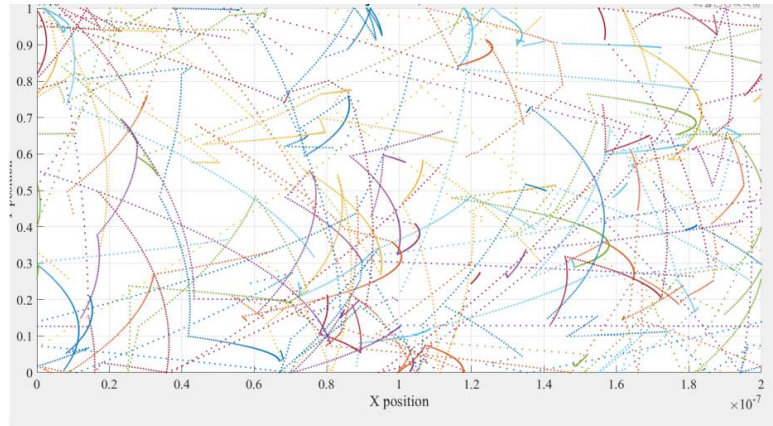
**February 21<sup>st</sup>, 2021**

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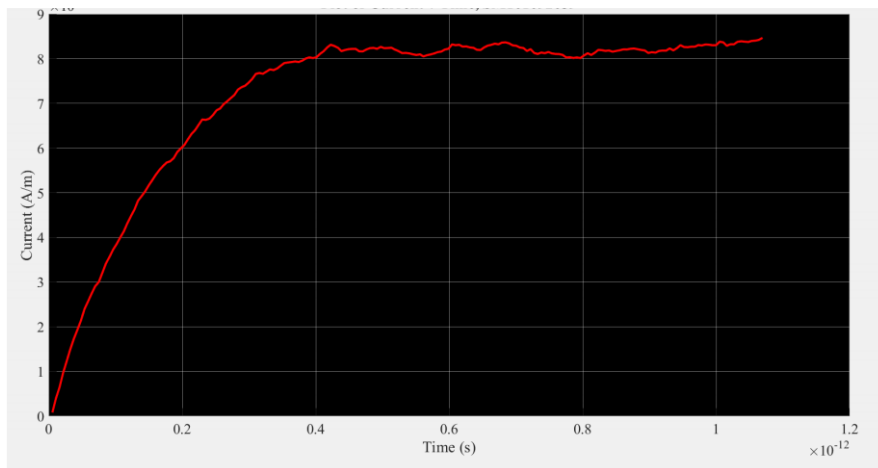
## Question 1

Using the Finite Difference Method the following graphs were produced.

a) Figure 1: Plot of Electron Trajectories

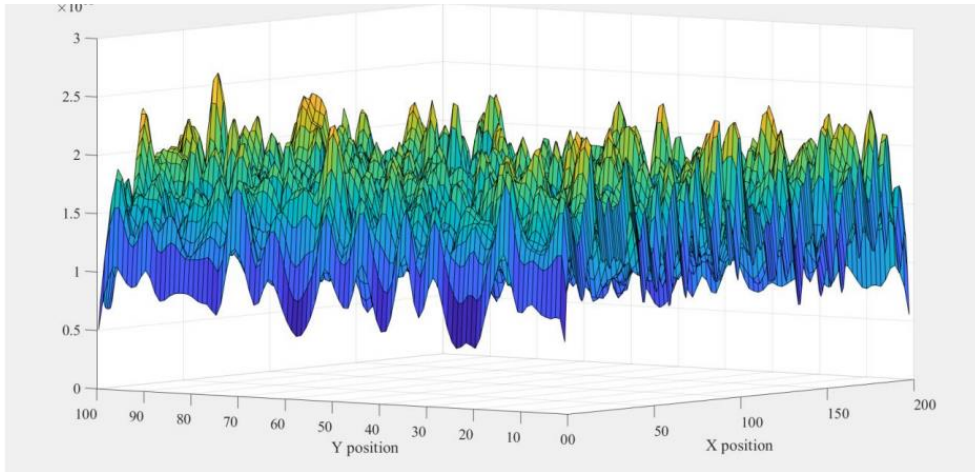


b) Figure 2: Plot of Variation of Current Over Time



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c) Figure 3: Electron Density Map with  $V_x = 0.1V$ .

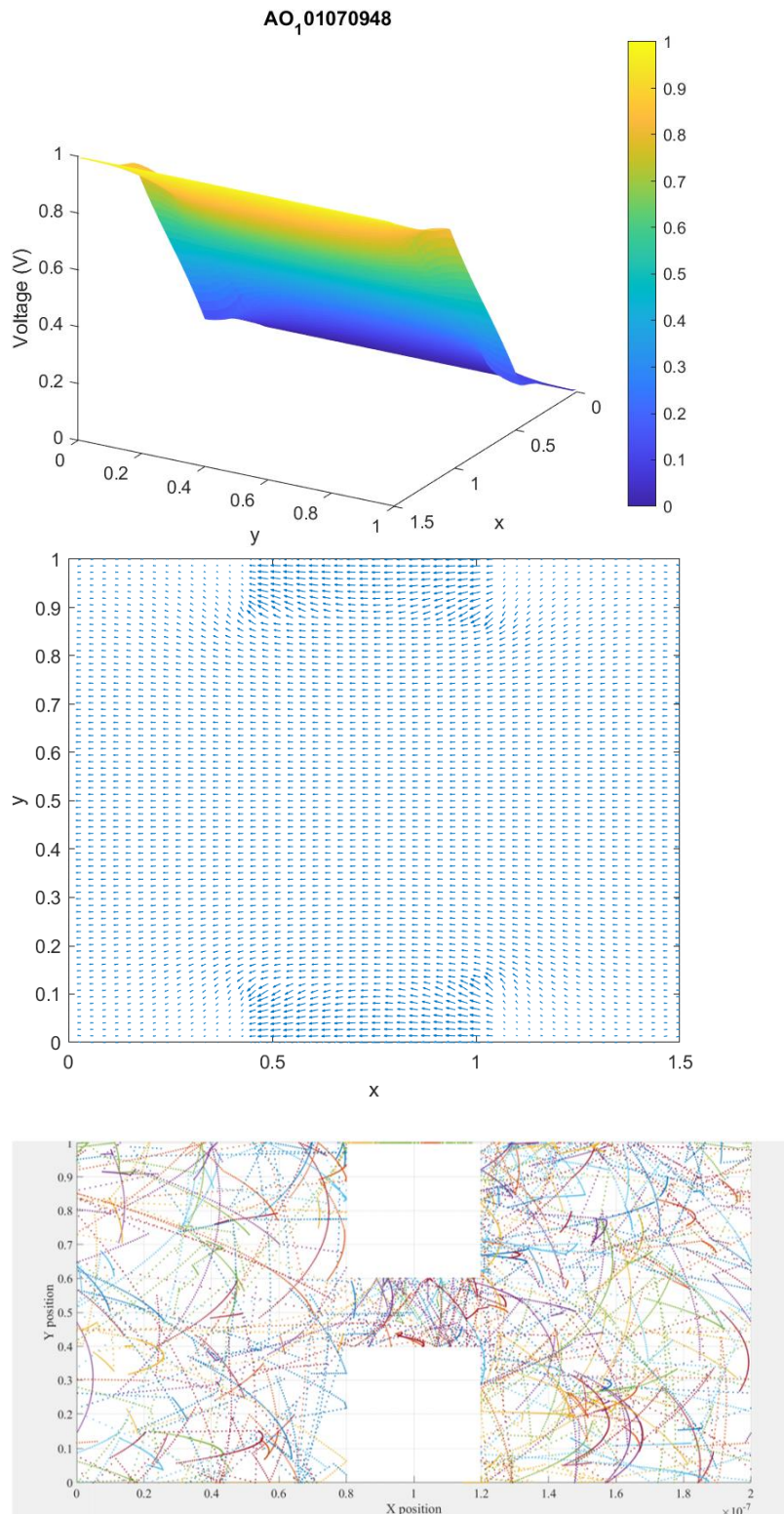


## Question 2

Current flow solved using Finite Difference Method

The following graphs were produced when finding the current flow and show the effect of the "bottle neck" against the current.

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### Question 3

#### Coupling of simulators

Plot below displays the density map at 0.8 V

