#MATLAB CODE FOR IMPLEMENTATION HODGKIN-HUXLEY MODEL

```
clear all
clc
GL=0.3*10^-3;
GKbar=36*10^-3;
GNabar=120*10^-3;
Ek=-72*10^-3;%Vk
Ena=55*10^-3;%VNa
El=-49.4*10^-3;%Vl
Cm=1*10^-6;
sti=25;
K=500*10^-6;
t0 = 150;
sti2=30;
K2= 1*50*10^-6;
t02=1500*10^-3;
sim('DDDD',50)
plot(GNa,'r')
hold on
plot(GK,'g')
hold on
plot(Vm,'b')
axis ([-inf inf -.08 0.15])
grid on
legend ('GNa', 'GK', 'Vm')
User defined function :
function y = fcn(GL, Ek, u)
y = GL*(Ek-u)
end
```

#SIMULINK MODEL FOR IMPLEMENTATION

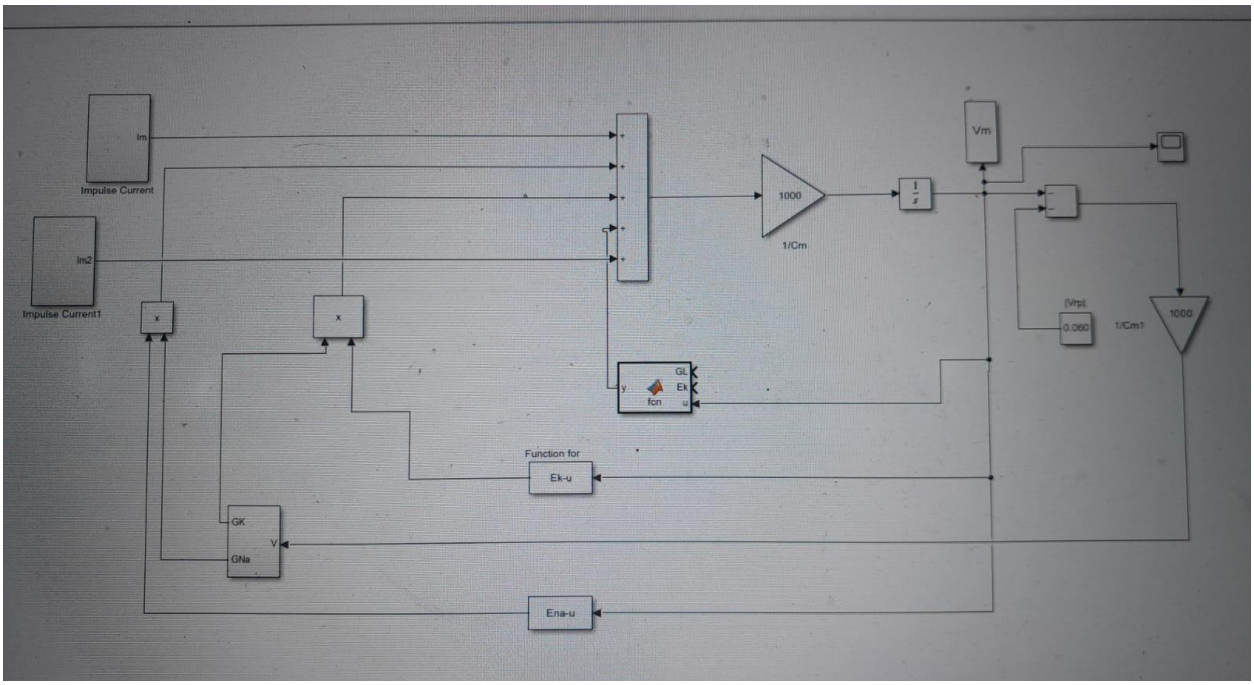

Illustration 8.1 : Simulink model for implementing Hodgking -Huxley Model.

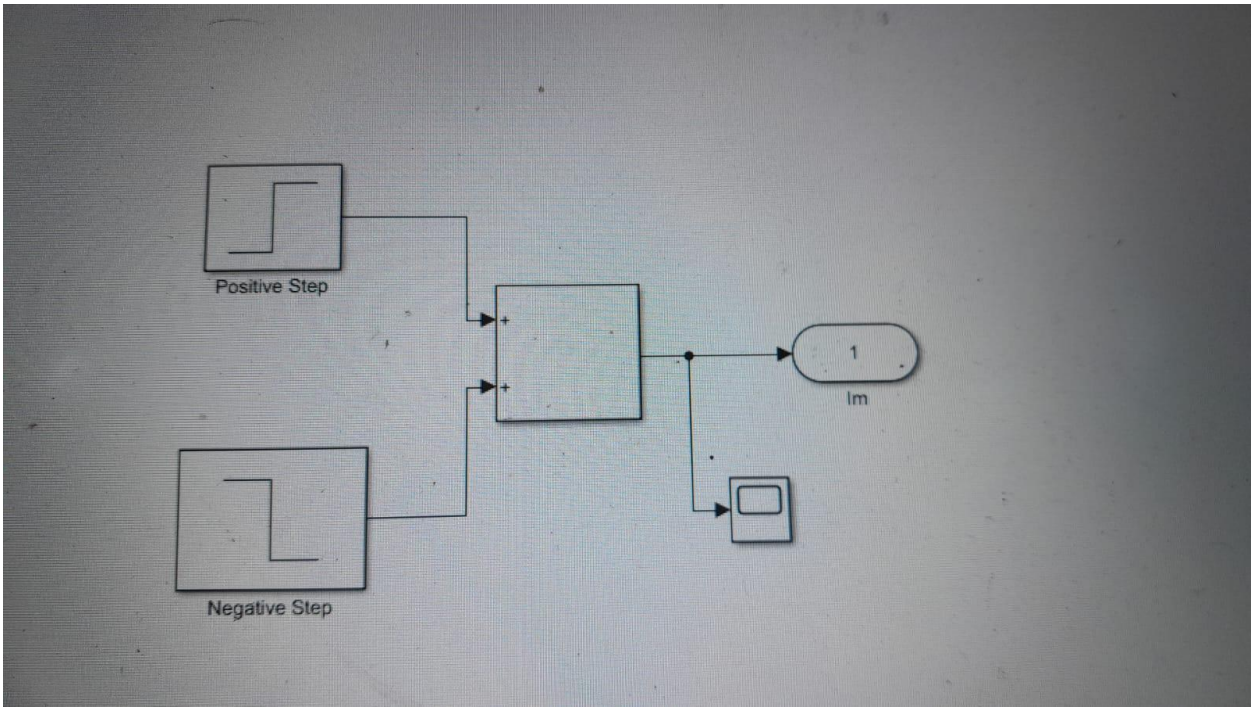

Illustration 8.2 : Subsystem model for Impulse current model for implanting Hodgkin-Huxley Model.

OUTPUT :

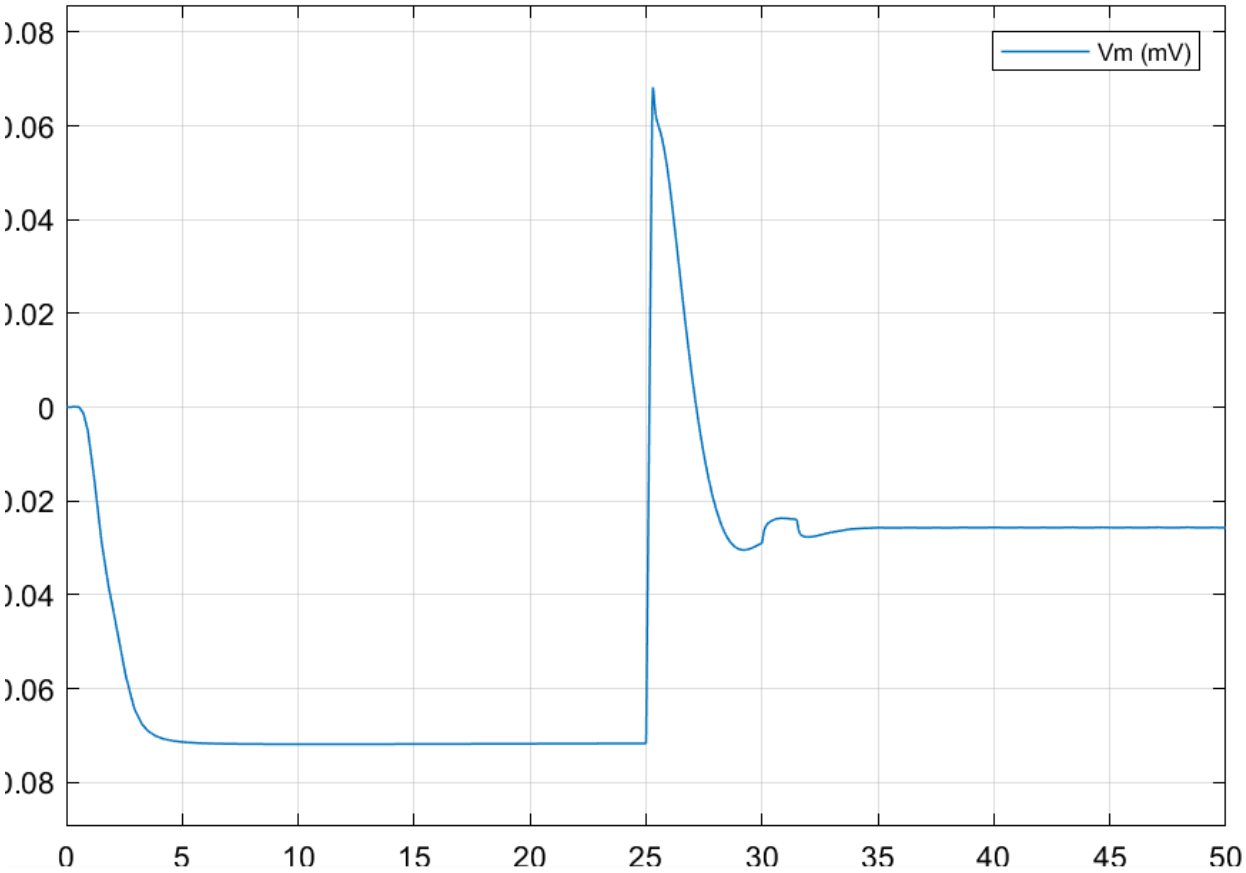

Illustration 8.3: Simulink Scope Plotting Vm Vs Time for K =500 *10^-6

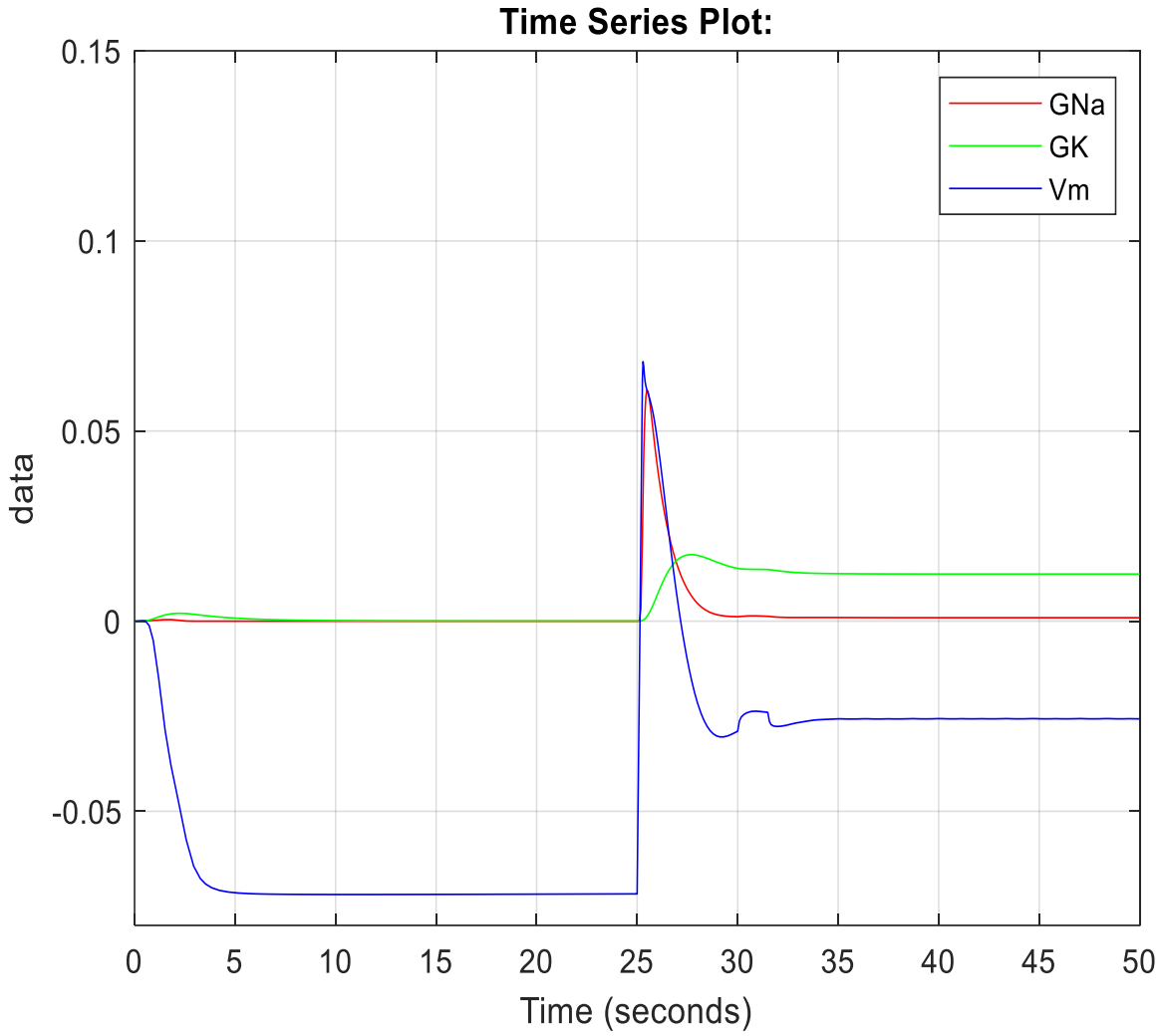

Illustration 8.3: Matlab Plotting GNa, Gka and Vm (mentioned in legend) for K =500 *10^-6

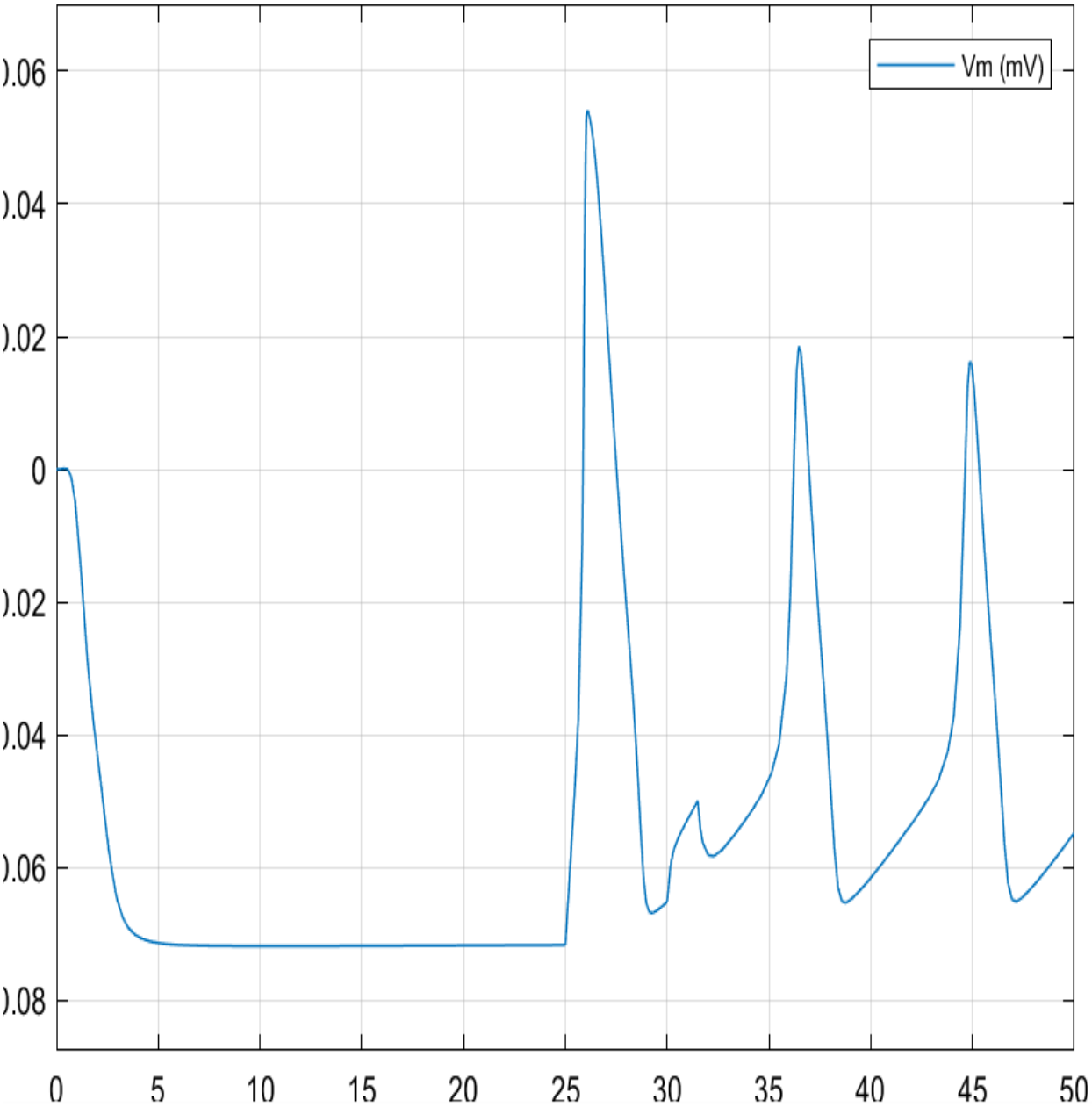

Illustration 8.4 :Simulink Scope Plotting Vm Vs Time for K =50 *10^-6

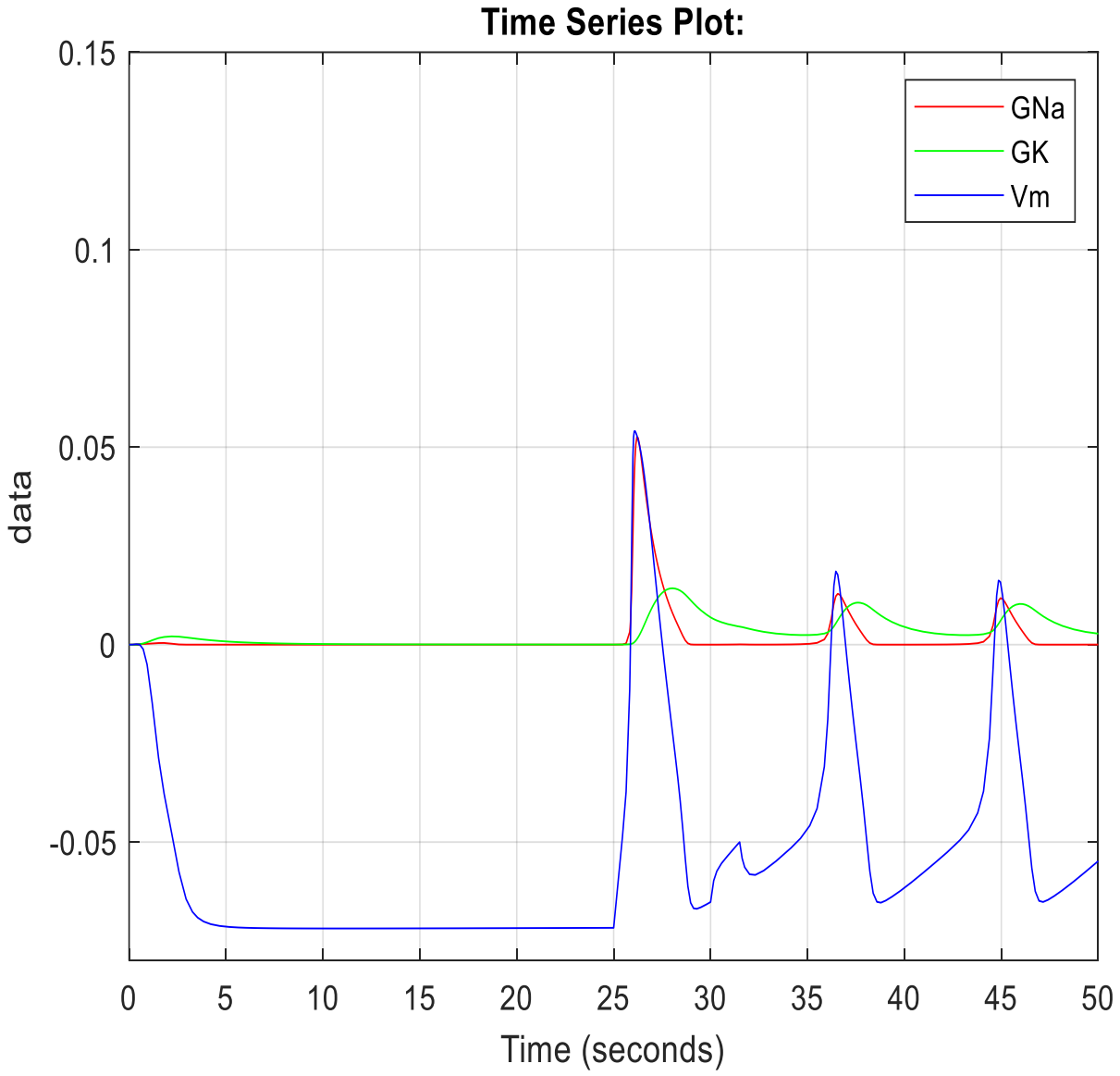

Illustration 8.5: Matlab Plotting GNa, Gka and Vm (mentioned in legend) for K =50 *10^-6

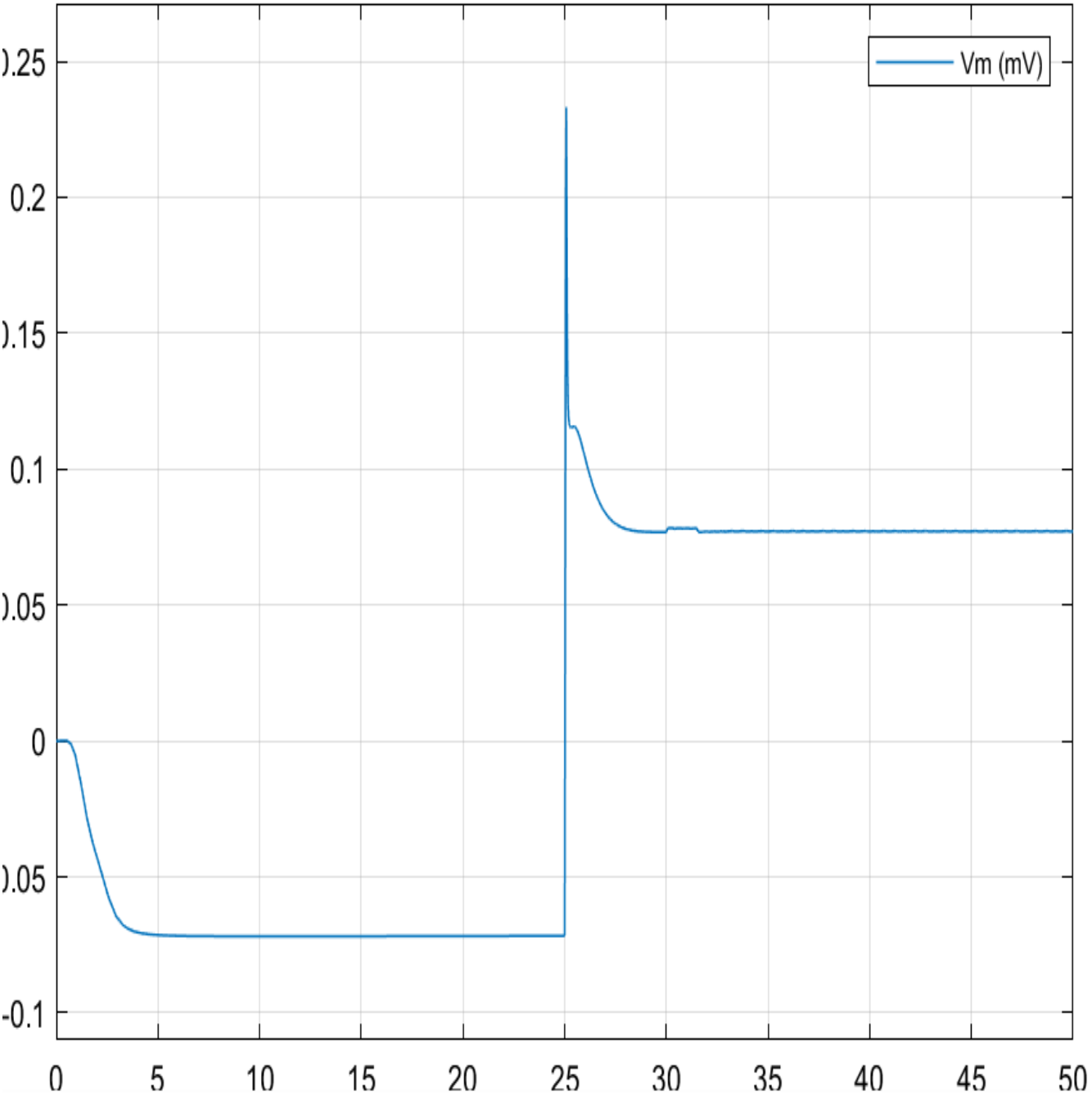

Illustration 8.6 :Simulink Scope Plotting Vm Vs Time for K =5000 *10^-6

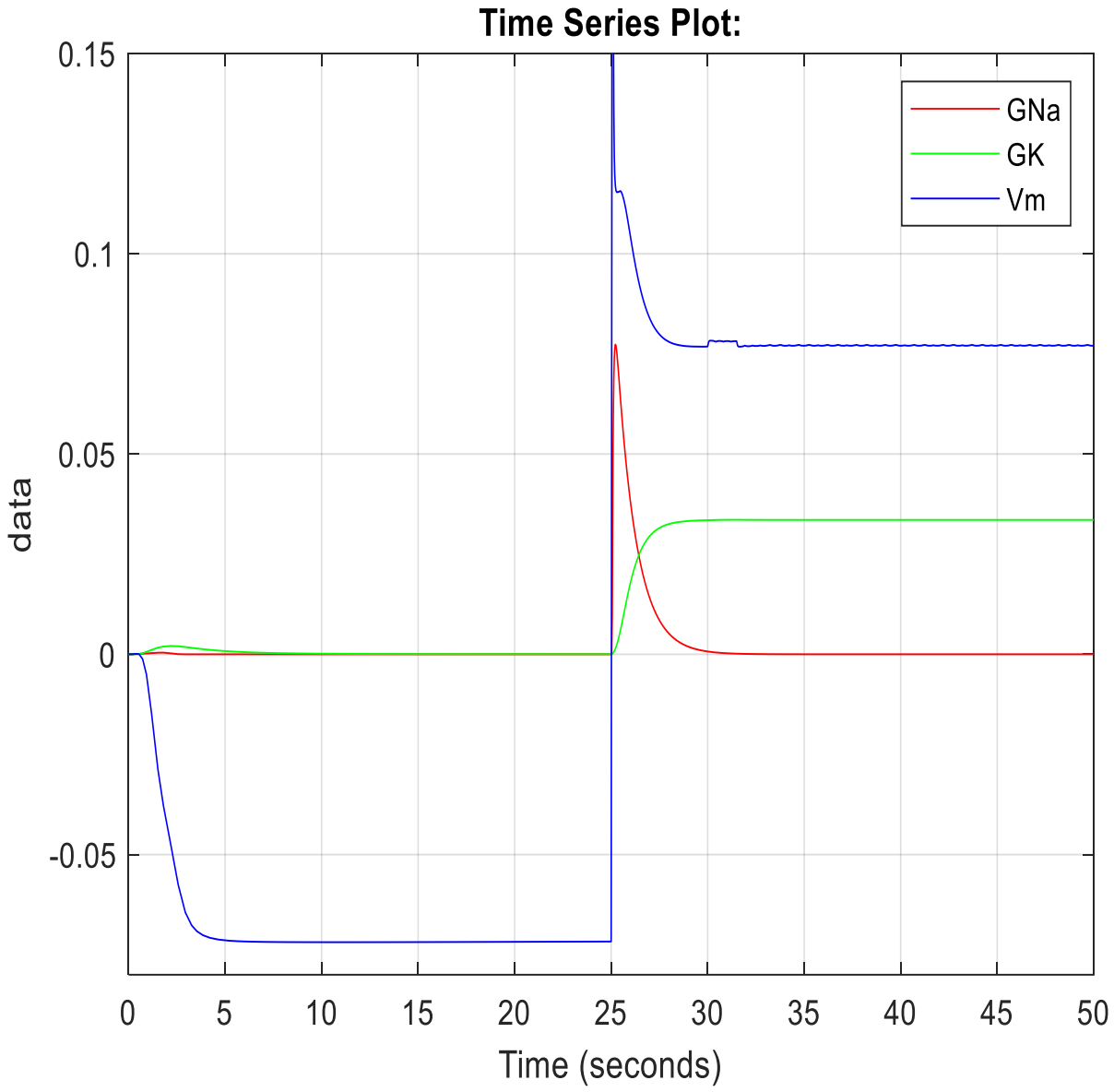

Illustration 8.5: Matlab Plotting GNa, Gka and Vm (mentioned in legend) for K =5000 *10^-6