Connection	DC Voltage (V)	Calculated Capacitance (pF)	Nominal Capacitance (pF)
100 pF and COM	4.934	100	100
47 pF and COM	2.553	51.7	47
22 pF and COM	1.211	24.5	22
22 pF and 47 pF Series	0.889	18	15
22 pF and 100 pF Series	1.02	20.7	18
47 pF and 100 pF Series	1.752	35.5	32
22 pF and 47 pF Parallel	3.792	76.9	69
22 pF and 100 pF Parallel	6.23	126.3	122
47 pF and 100 pF Parallel	7.53	152.6	147

Volume of Cyclohexane (mL)	Voltage (mV)
0	356.9
10	378.3
20	405.1
30	428.5
40	453.3
50	478.7
60	500.5
70	522.5
80	545.5

Voltage due to capacitance of lead	V_0 (mV)	20
Voltage due to capacitance of air	V_{air} (mV)	356.9
Voltage when capacitor filled with liquid	V_{liq} (mV)	571.1
Molecular Mass of Cyclohexane	M (g/mol)	84.16
Density of Cyclohexane	ρ_B (g/cc)	0.779
No. of molecules per unit volume	N_B (m^{-3})	5.57E+27

Dielectric Constant	ε_r	1.6359±0.0067
Electronic Polarizability	α (nm^3)	0.09413±0.00081

Cyclohexane

y = mx + c
m = 2.380±0.022
c = 356.94±1.05

$R^2 = 0.9994$
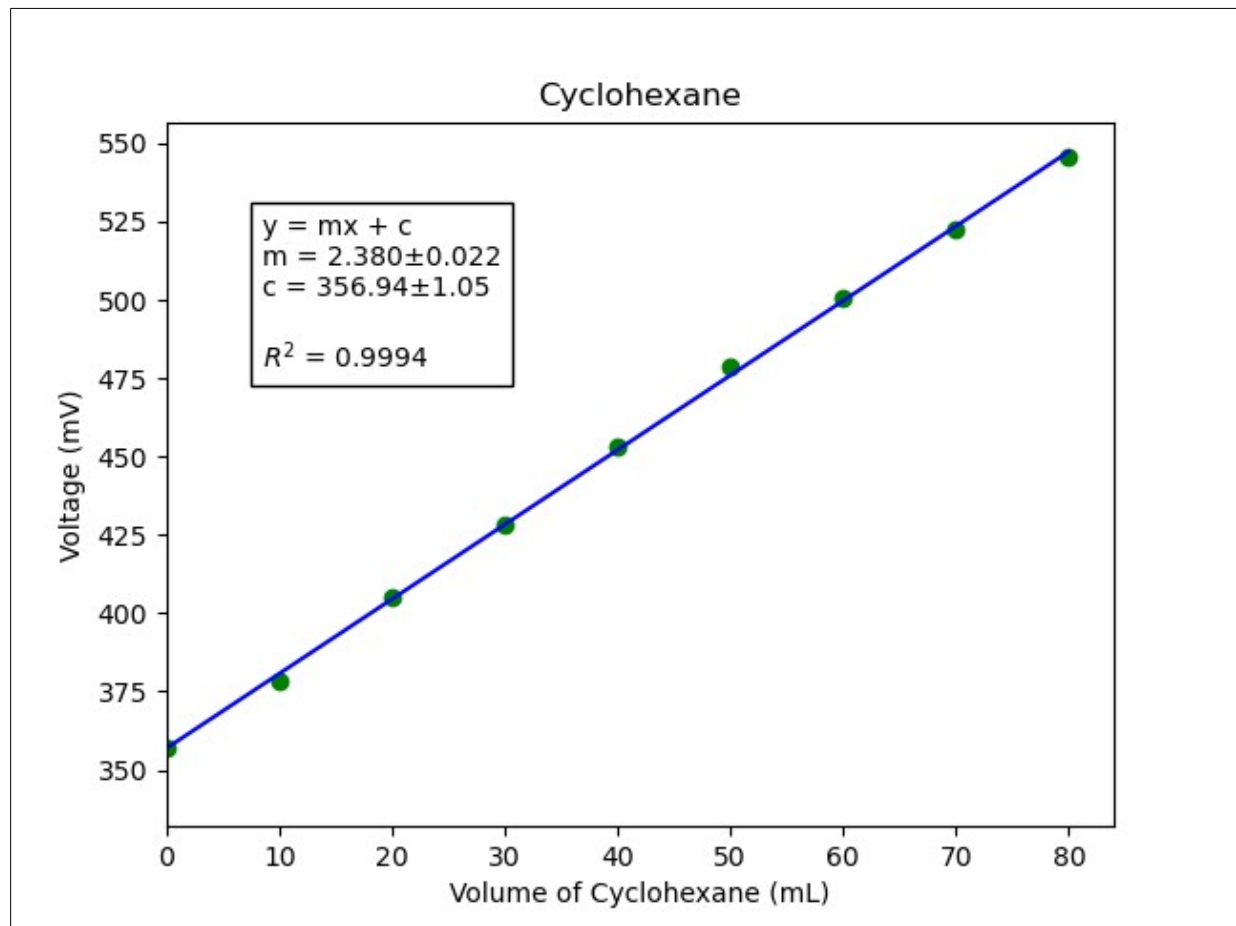
Error analysis and plotting done with *Python*, *matplotlib* and *uncertainties*

Code can be found on my GitHub Profile

Username: TheReconPilot
Repository: IISER-Labs
Link: https://github.com/TheReconPilot/IISER-Labs/tree/master/PHY%20222/Dielectric%20Constant