Somaiya Vidyavihar University
K. J. Somaiya College of Engineering, Mumbai -77
(A Constituent College of Somaiya Vidyavihar University)

FY B.Tech SEM I 2021-22
Engineering Physics Lab Course

Experiment No: 7
Title: Energy Bandgap of Semiconductor

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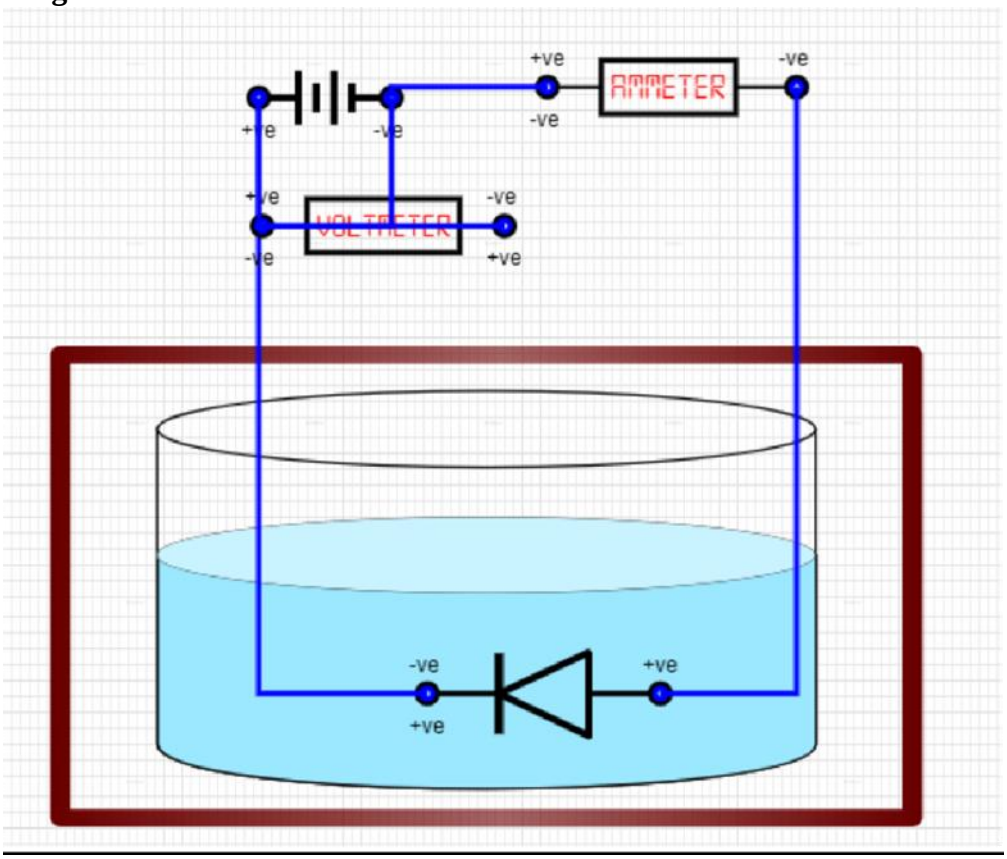
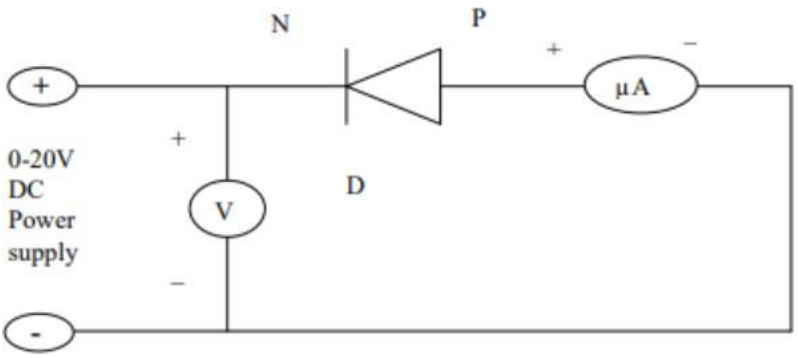
Branch : ETRX
Batch : D2

Aim: To Determine Energy Band Gap of Semiconductor.

Apparatus: Container, P-N Diode, Battery, Ammeter, Voltmeter and a Thermometer

Diagram:



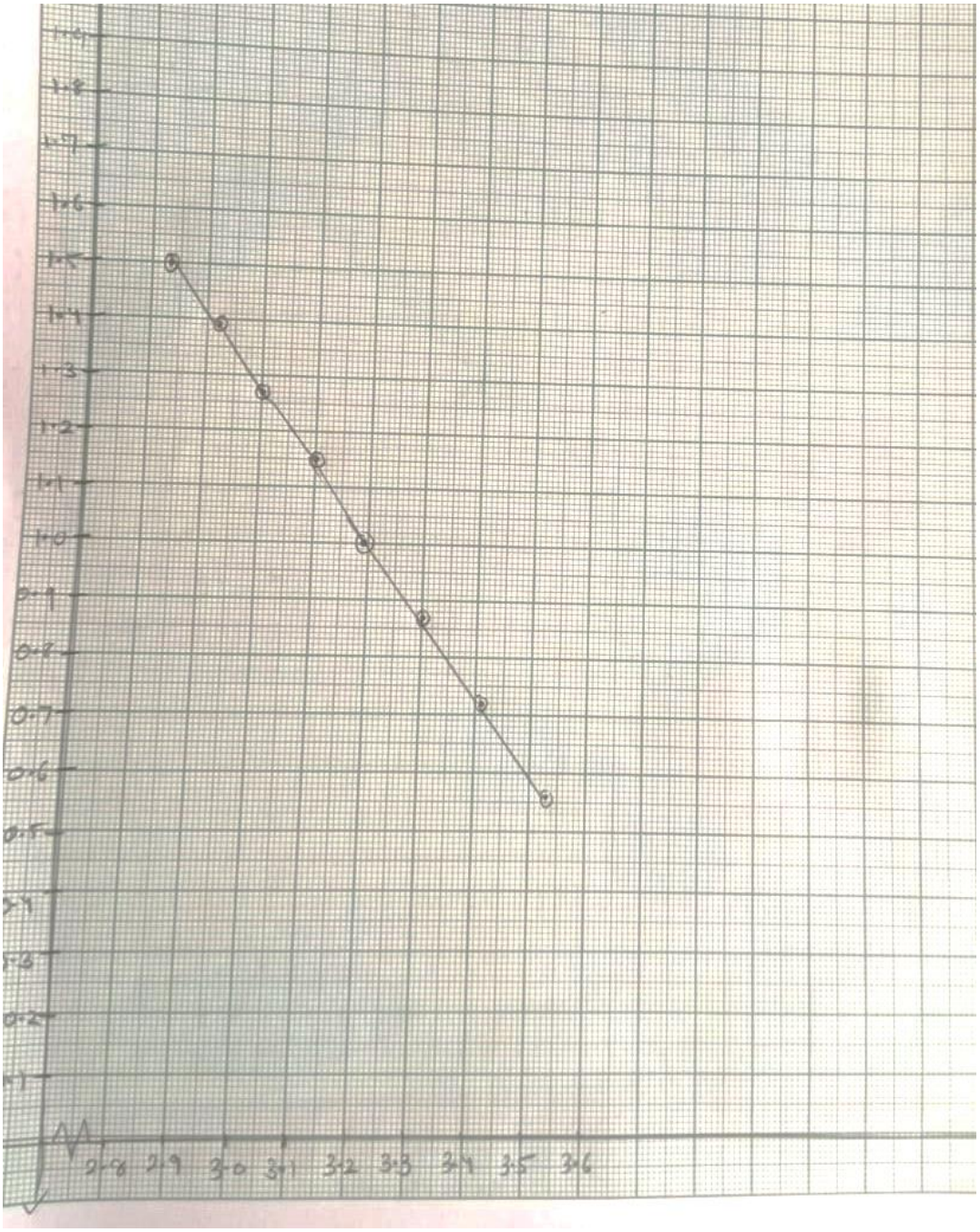


Observation Table:

Voltage selected = 3V

S.No.	Temperature(°C)	Current I_s (µA)	Temperature(°K)	$10^3/T$	$Log_{10} I_s$
01	10	3.686	283	3.53	0.567
02	20	5.346	293	3.41	0.728
03	30	7.568	303	3.30	0.879
04	40	10.476	313	3.19	1.020
05	50	14.214	323	3.10	1.153
06	60	18.934	333	3.00	1.277
07	70	24.805	343	2.92	1.395
08	80	32.001	353	2.83	1.505

Graph:


1·8
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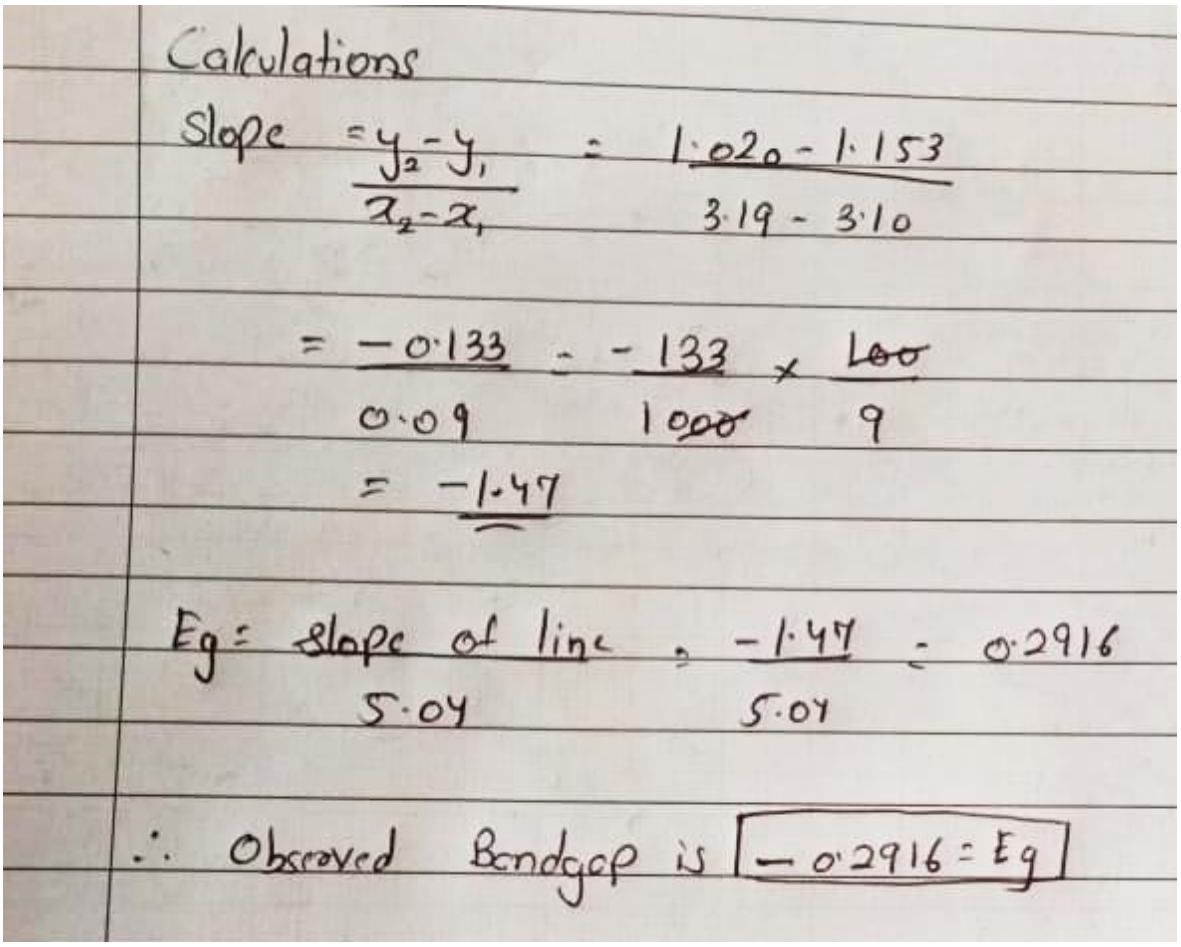
Calculations:



Results and Conclusion:

Thus, We have successfully verified and calculated the value of Energy Bandgap i.e.
Eg= -0.2916