

**LAMPIRAN A**  
**CONTOH PERHITUNGAN**

### A.1 Perhitungan Rata-rata Nilai Konduktivitas Listrik

1. Rata-rata nilai *Sheet Resistance*

Rata-rata *Sheet Resistance* sampel M<sub>1</sub>T<sub>1</sub>

$$= \frac{1,961 + 2,277 + 2,447 + 2,158 + 1,934}{5} = 2,1554$$

2. Rata-rata nilai Konduktivitas Listrik

Rata-rata Konduktivitas Listrik sampel M<sub>1</sub>T<sub>1</sub>

$$= \frac{2,12 + 1,83 + 1,703 + ,1,932 + 2,157}{5} = 2,1554$$

### A.2 Perhitungan Nilai Rasio I<sub>D</sub>/I<sub>G</sub>

1. Nilai Rasio I<sub>D</sub>/I<sub>G</sub> sampel M<sub>1</sub>T<sub>2</sub>

$$\text{Rasio } \frac{I_D}{I_G} = \frac{324,454}{342,053} = 0,948$$

**LAMPIRAN B**  
**DATA HASIL PENELITIAN**

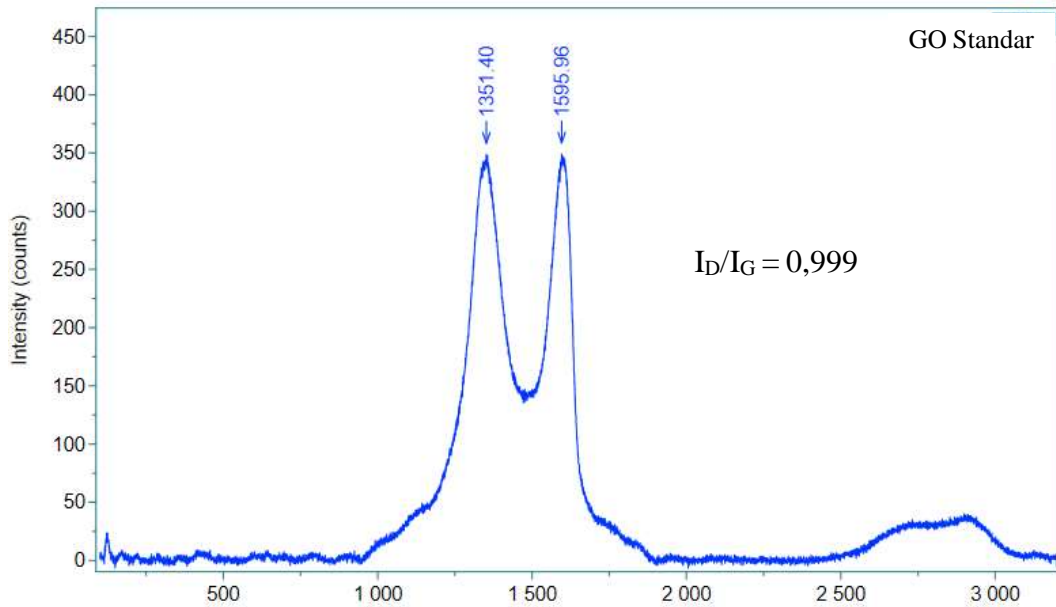
Data Hasil Pengujian *Four Point Probe***Tabel B.1** Hasil Data *Sheet Resistance* FPP (k $\Omega$ /sq)

No	Sampel	Titik I	Titik II	Titik III	Titik IV	Titik V	Rata-rata
1	M1T1	1,961	2,277	2,2447	2,158	1,934	2,1554
2	M1T2	0,616	0,8239	1,018	0,4584	1,812	0,9456
3	M1T3	1,099	2,036	1,374	1,093	1,228	1,366
4	M2T1	3,932	5,787	4,331	4,076	9,88	5,6012
5	M2T2	0,4888	0,5072	0,5661	0,413	0,5171	0,4984
6	M2T3	3,576	2,482	2,895	2,982	3,456	3,078
7	M3T1	6,976	7,13	7,236	7,438	5,979	6,9518
8	M3T2	6,929	8,589	8,598	8,477	8,49	8,2166
9	M3T3	9,613	7,185	6,277	13,65	22,31	11,807
10	GOS	354,4	7505	5755	6192	4474	4856

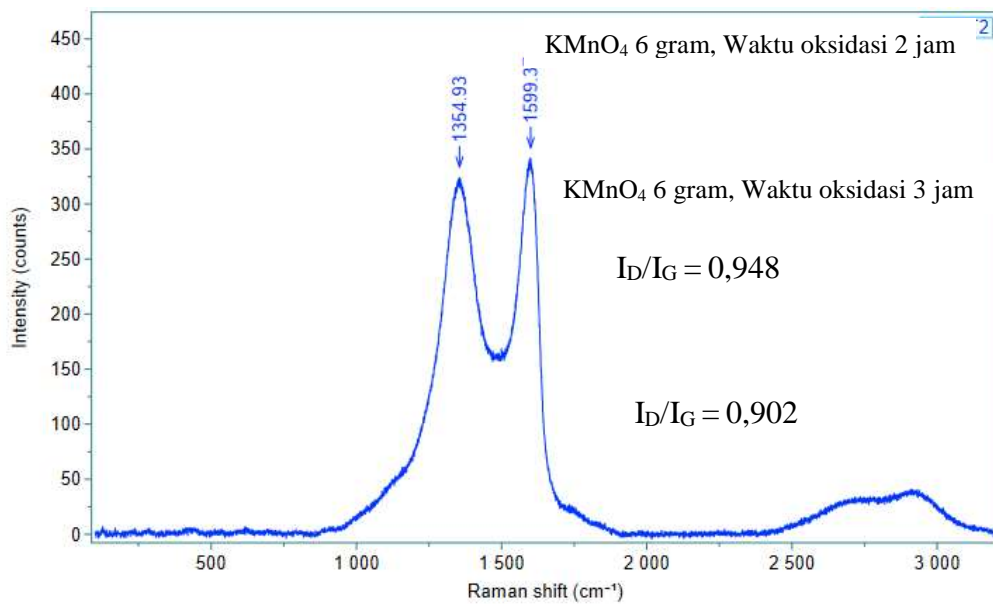
**Tabel B.1** Hasil Data Konduktivitas Listrik FPP (S/m)

No	Sampel	Titik I	Titik II	Titik III	Titik IV	Titik V	Rata-rata
1	M1T1	2,126	1,83	1,773	1,932	2,157	1,9634
2	M1T2	6,244	4,668	3,779	8,391	2,123	5,041
3	M1T3	4,549	2,456	3,639	4,574	4,071	3,8578
4	M2T1	1,496	1,016	1,358	1,443	0,5963	1,18186
5	M2T2	7,637	7,445	8,444	9,183	7,548	8,0514
6	M2T3	1,271	1,831	1,59	1,524	1,316	1,5026
7	M3T1	0,6442	0,6101	0,601	0,585	0,7282	0,6337
8	M3T2	0,5776	0,466	0,4653	0,471,1	0,4714	0,4887
9	M3T3	0,4163	0,5568	0,6372	0,2932	0,1793	0,4165
10	GOS	0,77	0,704	0,923	0,858	0,1178	0,000929

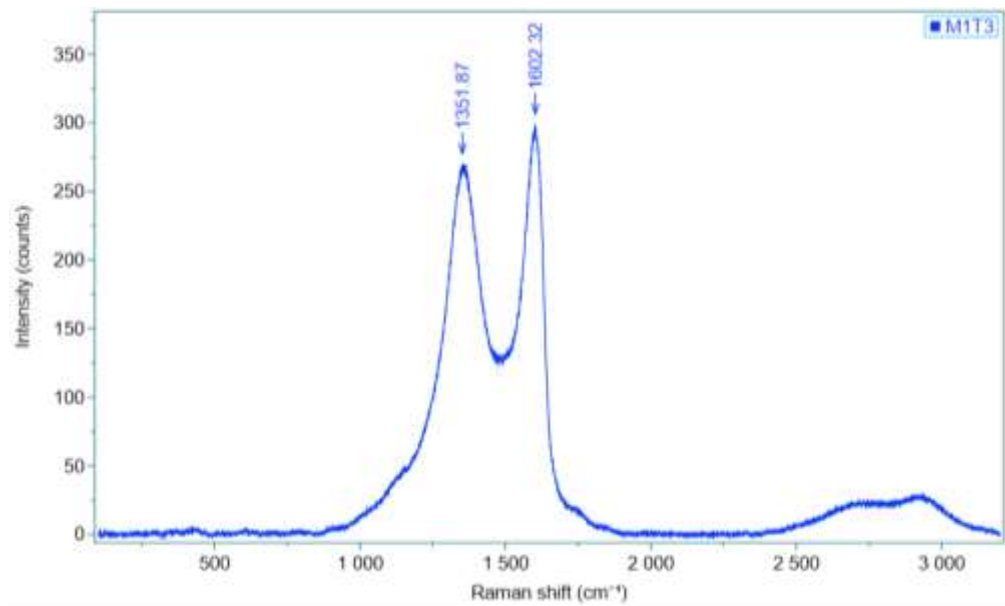
Data Raman Spectroscopy



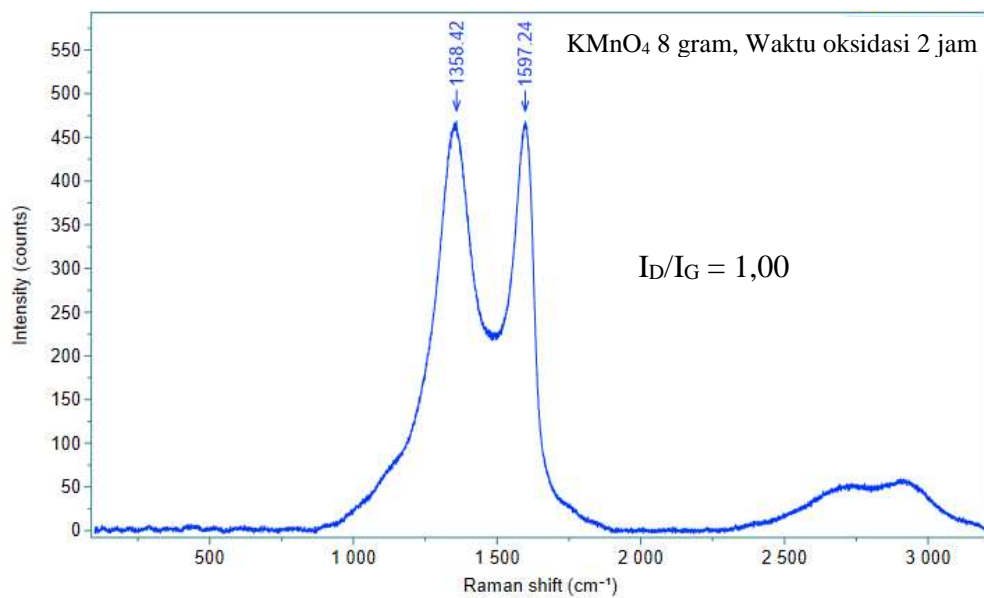
**Gambar B.1** Raman Spektrum dari Membran GO



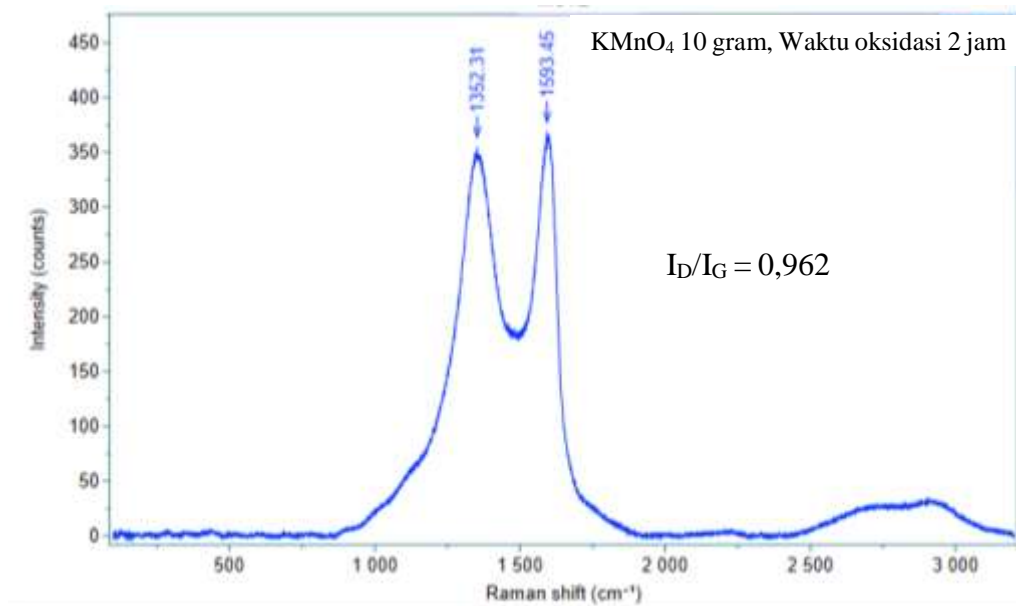
**Gambar B.2** Raman Spektrum dari Membran ZnO/GO dengan KMnO<sub>4</sub> 6 gram dan waktu oksidasi 2 jam



**Gambar B.3** Raman Spektrum dari Membran ZnO/GO dengan KMnO<sub>4</sub> 6 gram dan waktu oksidasi 3 jam



**Gambar B.4** Raman Spektrum dari Membran ZnO/GO dengan KMnO<sub>4</sub> 8 gram dan waktu oksidasi 2 jam



**Gambar B.5** Raman Spektrum dari Membran ZnO/GO dengan KMnO<sub>4</sub> 6 gram dan waktu oksidasi 2 jam

**LAMPIRAN C**  
**ALAT DAN BAHAN**





**Gambar C.1** Furnace



**Gambar C.2** Gelas Beker



**Gambar C.3** *Magnetic Stirrer*



**Gambar C.4** Neraca Digital



**Gambar C.5** Filtrasi Vakum



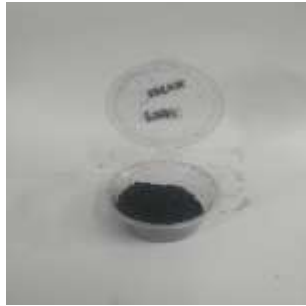
**Gambar C.6** *Ultrasonic Bath*



**Gambar C.7** Filtrasi Vakum



**Gambar C.8** *Air Brush Kit*



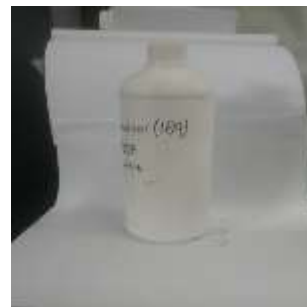
**Gambar C.9** Grafit



**Gambar C.10** Air Deionisasi



**Gambar C.11** Zinc Acetate  
Dihydrate



**Gambar C.12** Isopropanol



**Gambar C.13** Membrane filter mix  
cellulose ester



**Gambar C.14** Aseton



**Gambar C.15** Asam Sulfat ( $\text{H}_2\text{SO}_4$ )  
98%



**Gambar C.16** Asam Nitrat ( $\text{HNO}_3$ )



**Gambar C.17** Potasium Permanganat ( $\text{KMnO}_4$ )



**Gambar C.18** Hidrogen Peroxide ( $\text{H}_2\text{O}_2$ ) 30%



**Gambar C.19** Asam Klorida ( $\text{HCl}$ ) 37%