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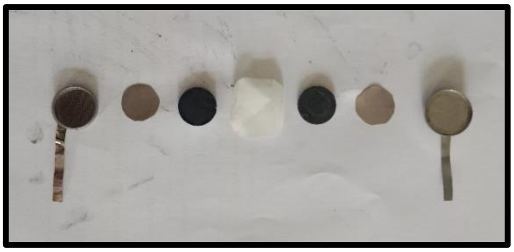
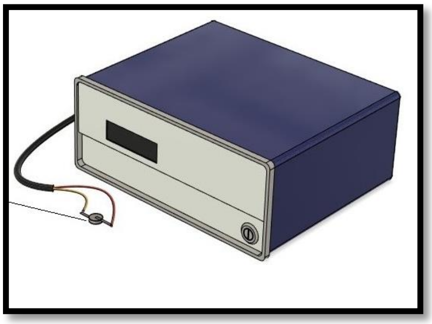
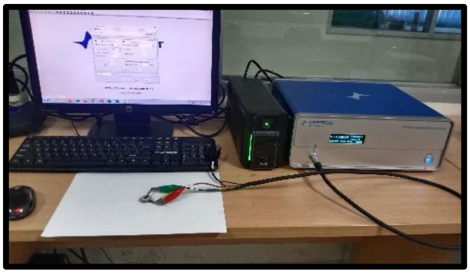
# LAMPIRAN

Lampiran 1. Gambar alat







Lampiran 2. Temperatur karbonisasi

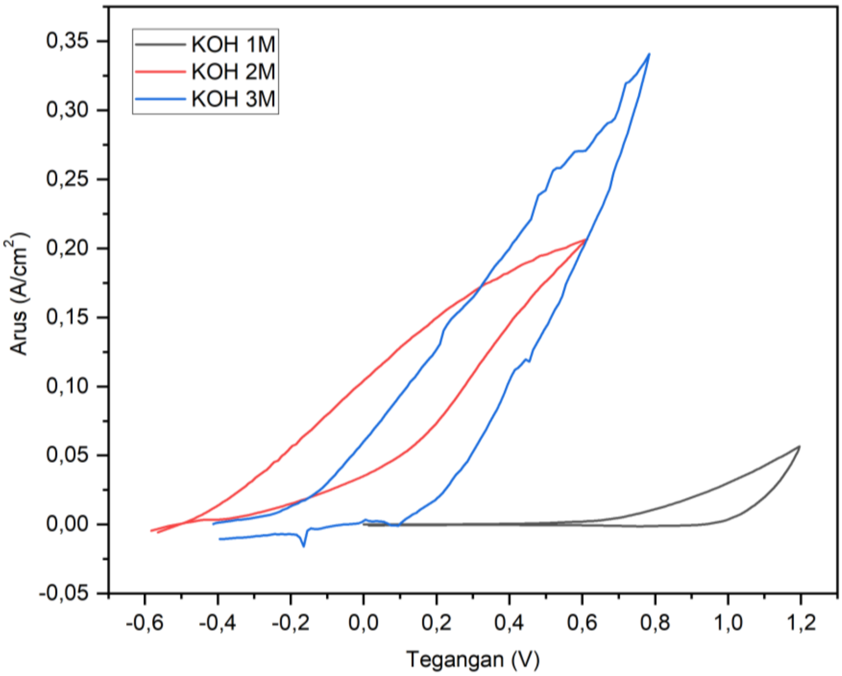
| Waktu(menit) | Temperatur (°C) |
|---|---|
| 0 | 27 |
| 10 | 106 |
| 20 | 214 |
| 30 | 295 |
| 40 | 354 |
| 50 | 391 |
| 53 (ditahan) | 400 |
| 60 | 392 |
| 70 | 391 |
| 80 | 393 |
| 90 | 402 |
| 100 | 399 |
| 110 | 398 |
| 113 (1 jam) | 400 |

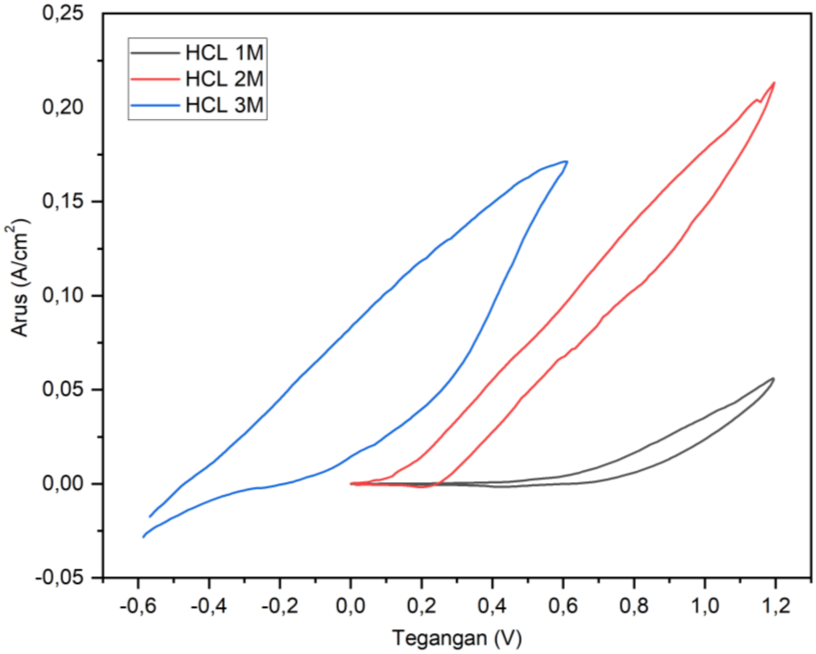
| Waktu (menit) | Temperatur (°C) |
|---|---|
| 120 (1 jam) | 396 |
| 130 | 394 |
| 140 | 392 |
| 150 | 391 |
| 160 | 392 |
| 170 | 397 |
| 173 (2 jam) | 394 |
| 180 | 402 |
| 190 | 400 |
| 200 | 398 |
| 210 | 395 |
| 220 | 392 |
| 230 | 391 |
| 233 (3 jam) | 393 |

Lampiran 3.Temperatur aktivasi lanjut

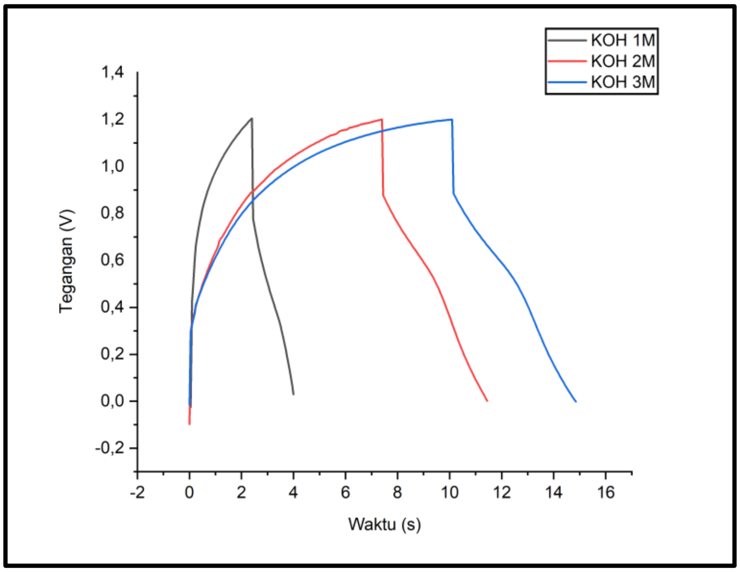
| Waktu (menit) | Temperatur (°C) |
|---|---|
| 0 | 27 |
| 10 | 124 |
| 20 | 217 |
| 30 | 287 |
| 40 | 349 |
| 50 | 380 |
| 56 (ditahan) | 400 |
| 60 | 396 |
| 70 | 392 |
| 80 | 399 |
| 90 | 393 |
| 100 | 400 |
| 110 | 395 |
| 116 | 397 |

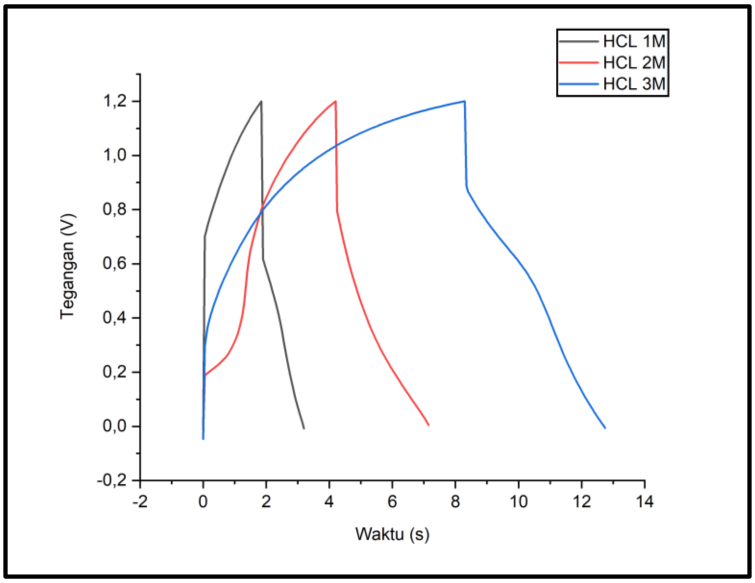
Lampiran 4. Kurva cyclic voltammetry



Lampiran 5. Kurva galvanostatic charge/discharge



Lampiran 6. Tabel spesifikasi superkapasitor

| | Aktivator | | Densitas ($g/cm^3$) |
|---|---|---|---|
| | Jenis larutan | Konsentrasi larutan | |
| Cangkang | | | 0.0010 |
| Karbon | | | 0.00048 |
| Karbon Aktif | KOH | 1M | 0.00039 |
| | | 2M | 0.00039 |
| | | 3M | 0.00039 |
| | HCL | 1M | 0.00039 |
| | | 2M | 0.00040 |
| | | 3M | 0.00039 |

| Elektroda | Jenis Aktivator | Konsentrasi Aktivator | Kapasitansi Spesifik (F/g) |
|---|---|---|---|
| Karbon Aktif | KOH | 1M | 2 |
| | | 2M | 9.83 |
| | | 3M | 15.83 |
| | HCL | 1M | 1.31 |
| | | 2M | 5.91 |
| | | 3M | 11.54 |

| Elektroda | Jenis Aktivator | Konsentrasi Aktivator | Densitas Energi (Wh/Kg) |
|---|---|---|---|
| Karbon aktif | KOH | 1M | 0.4 |
| | | 2M | 1.96 |
| | | 3M | 3.16 |
| | HCL | 1M | 0.26 |
| | | 2M | 1.18 |
| | | 3M | 2.30 |

| Elektroda | Jenis Aktivator | Konsentrasi Aktivator | Densitas Power (W/Kg) |
|---|---|---|---|
| Karbon Aktif | KOH | 1M | 900 |
| | | 2M | 1748 |
| | | 3M | 2400 |
| | HCL | 1M | 700 |
| | | 2M | 1290 |
| | | 3M | 1867 |